

# TELEGRAPH AGE.

A SEMI-MONTHLY JOURNAL DEVOTED TO TELEGRAPHY

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NEW YORK, AUGUST 1, 1901.

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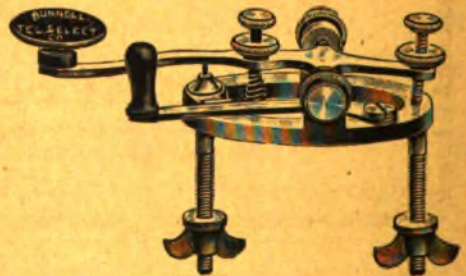
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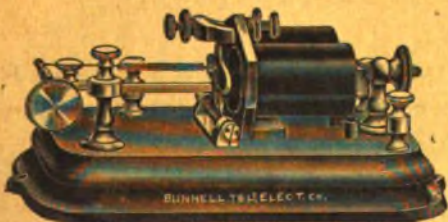
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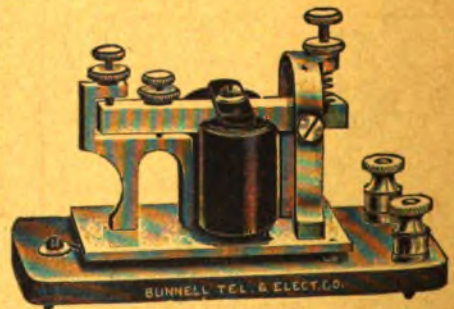
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plex-main wire connections; the quadruplex-local connections; the quadruplex-Postal system; arrangement of resistance coils in dynamo quadruplex apparatus; correct adjustment of the Freir relay; Morris duplex-theoretical diagram; Morris duplex-actual connection at distant station; Morris duplex-actual connection at battery station; open key local system; storage batteries for main office; charging storage batteries from a power circuit; charging storage battery from branch office loops; charging storage battery from incandescent lamp circuit; the Phonoplex system; intermediate switch connection; telephone connections, etc., etc.

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# THE TELEGRAPH AGE.

No. 15.

NEW YORK, AUGUST 1, 1901.

VOL. XXIV.

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## SOME POINTS ON ELECTRICITY.

BY WILLIS H. JONES.

The question quite frequently asked by mail and by operators whom we meet personally is: "What is the best way to place one's self in the line of promotion?"

It would be a pretty difficult matter to designate any particular method which would guarantee that result, but there is one way which will certainly enhance one's chances greatly and make himself sought after when an opportunity for advancement does arise, and that is—get out of the old rut and make yourself conspicuous by doing something different from those about you.

No doubt all have heard the old story of the farmer's boy who was sent to the barn to count a new litter of pigs. He reported that he couldn't tell exactly how many there were, but he saw ten lying around the pen and "one little spotted pig that wiggled about so much that he couldn't count him."

Now, the point is that although there were evidently eleven pigs in that pen, the one that "wiggled about" was the only one that the boy ever remembered when he recalled his visit to the sty.

Here is another story: A well-known lawyer once advertised for an office boy, and in order to judge from the composition and chirography which applicants might possibly best fill the bill, he requested that they apply by letter only. The next morning, as might be expected, his mail contained a great number of applications written in various

degrees of proficiency, but probably ninety per cent. of the letters showed evidence of a friendly guiding hand. The letter that caught the lawyer's eye and secured the situation, however, was this: "Dear Sir: I seen your ad and I want the job. It beats hel how hard times is but Im a orphan and got to hustle."

That boy got the place by being original and doing his own correspondence instead of getting a friend to write it up in the usual stereotyped manner. That boy is to-day one of the foremost lawyers in this country.

Here is just one more—a true story of the New York Western Union main office. Every old-timer who worked there in the early seventies will recognize it.

About that time there was working on a way wire situated in the central position of the operating department a tall, good-natured young man who was not satisfied with merely an external view of his instruments, but yearned for a knowledge of their interior also. His curiosity led him to carry about his person a screwdriver, file, pair of pliers and other useful tools with which he pried into every secret corner of the apparatus.

In addition to the knowledge thus acquired his tools soon became very much in demand by operators who wished to clean or adjust their instruments, and being very good-natured and expert in handling instruments, his friends were not backward in asking his aid whenever anything went wrong. After a while the operators naturally began to look upon him as the official overseer of all telegraph apparatus and he "received orders" right and left. In those days the assistant manager was supposed to be general utility man, and he was only too glad to be relieved of general repairing and the adjustment of apparatus. Smith—let's call him Smith—advanced a step further one day when David Downer, then assistant manager, replied to an operator who had asked assistance: "My Stars! Why do you bother me? Go get Smith." Thus semi-officially recognized, he at once became public property. When the quadruplex and other new apparatus were first installed Smith was the first on deck to pry into the secret, if there was any, and to learn how to balance and handle it. By that time his services were indispensable and he was accordingly appointed head of that branch of work which he had himself created.

Smith still holds the position to-day, but, of course, the responsibility has grown with time. For many years no wires or apparatus has ever been installed without his supervision. He draws good money—as salaries go—and is worth all he gets, but does any one imagine that his chances of being selected would have been nearly so great had



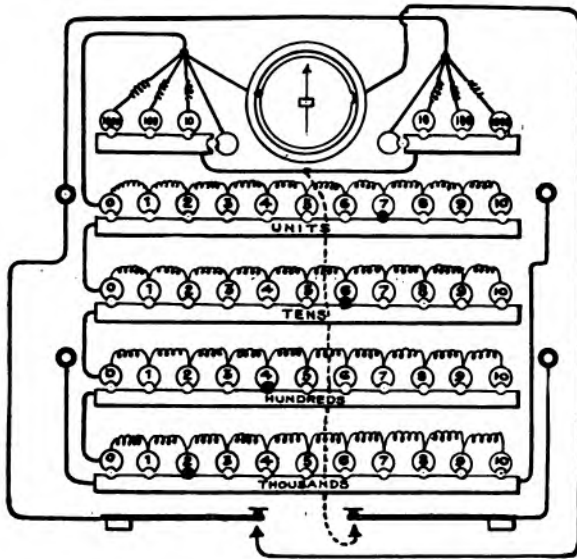
he not equipped his mind and pockets differently from those about him?

Every man who has achieved great distinction in any calling has done so by either far outdistancing the crowd on a common highway, or by creating a new byway of his own. To remain with the crowd is to lose one's individuality.

It must not be supposed that all the short cuts to success have already been discovered and staked by lucky finders. Long after we are dead the same winning tricks will be played by the knowing ones who forge ahead.

Here is one little hint that will hold good as long as the world lasts: Be first in everything. The moment an improved apparatus or new device appears, don't wait until everybody understands all about it, but strive to be among the first who can operate and adjust it. There is always a dearth of help at first and a surplus by the time the crowd shows up.

Don't become discouraged because the opportunity for advancement may sometimes be slow in coming. In a large office one is apt to be somewhat buried, but first show your colors. It is impossible to hide a light completely under the proverbial bushel, for yellow fringes will still stream from underneath the round edges where those who are looking for talent cannot fail to see the sign of promise.



At the request of a St. Louis correspondent we print the accompanying cut showing the inclosed wiring and coil connections of the modern type of wheatstone bridge and galvanometer. The superiority of this type over the old pattern lies in being able to get a direct reading from the plug or plugs inserted to balance the line measured. With the old-style rheostat it is necessary to add together the values of the unplugged resistance coils, thus making possible errors due to miscalculation.

In the accompanying cut the resistance of the line measured, as shown by the plugs, would be 2.467 ohms.

#### Personal Mention.

Mr. O. R. Roberson, assistant electrical engineer of the Western Union Telegraph Company, New York, is enjoying a two weeks' vacation.

Mr. Thomas A. Edison, the inventor, of Orange, N. J., was a recent visitor at the Pan-American Exposition at Buffalo, N. Y.

Mr. Joseph Dull, formerly superintendent of telegraph of the Florida Central and Peninsular Railroad, is now located with the Seaboard Air Line at Jacksonville, Fla.

Mr. James Merrihew, general superintendent of the Western Union Telegraph Company, New York, finds time the latter part of each week to visit his home in the Catskill mountains.

Mr. W. B. Gill, superintendent of the Western Union Telegraph Company, Philadelphia, Pa., together with his family, sailed for Europe a few days since, where he will spend two months sight seeing.

Mr. S. F. Jones, of the electrical engineer's office, Postal Telegraph-Cable Co., New York, has returned home after an absence of six months in the middle west, where he has reconstructed several office installations for his company.

Mr. F. G. Mason, an old time telegrapher of New York, now assignee for the United Press, has returned from a trip to Chicago, where he visited his parents, Mr. Mason's father being superintendent of supplies of the Western Union Telegraph Company, that city.

Mr. F. P. Valentine has resigned his position as superintendent of telephones of the New York, New Haven & Hartford Railroad and has been appointed superintendent of exchanges of the New England Telephone and Telegraph Company, with headquarters in Boston.

Mr. Edward H. Uteley, formerly a telegraph operator for the old Atlantic and Pacific Telegraph Company, and afterwards for the Chicago, Milwaukee and St. Paul Railway, has been appointed general manager of the Bessemer and Lake Erie Railroad, of which road for the last four years he has been the general freight and passenger agent. He is 51 years of age.

Lieut.-Gov. Alfred G. Jones, of Nova Scotia, who is a cousin of Mr. Francis W. Jones, the electrical engineer of the Postal Telegraph-Cable Company, New York, is to be knighted by King Edward. Governor Jones, it will be remembered, was the Dominion High Commissioner for the Canadian and Australian Pacific Cable, and his valuable work in that connection contributed materially to the consummation of that greatest of all single cable projects.

#### Coming Conventions.

The International Association of Municipal Electricians, at Niagara Falls, N. Y., September 2, 3, 4.

The Old Time Telegraphers' Association and the United States Military Telegraph Corps (jointly): at Montreal, Quebec, September 11, 12, 13.

**Miscellaneous Items.**

Mr. J. R. T. Auston, well known in telegraph circles throughout the country, has accepted a position with the Postal Telegraph-Cable Company at Fort Worth, Tex.

Mr. W. L. MacLellan, one of the best known old time New York telegraphers, is now assistant manager of the Waldorf-Astoria office, New York, of McIntyre & Marshall, bankers and brokers.

At Springfield, Ohio, on July 18, the Magneto Electric Company elected Dr. L. E. Niles president; W. S. Van Brocklin, vice-president; L. G. Woolley, secretary and treasurer. This is the company that controls the magneto principle for the operation of telegraphs.

Mr. W. A. Harris, manager of the Western Union at New Haven, Conn., was recently at Newport, R. I. He was on a few days' yachting cruise on his own account, which is about all the vacation he gets in the year. He is familiar with Newport, where he was once a temporary manager and where his presence is always welcome.

Mr. A. Davidson, formerly of the cable steamer "Minia," and of the Commercial Cable Company, New York, and for the past four years with the Central and South American Cable Company at Baranco, Peru, who has been suffering from typhoid fever for the past two months, is now entirely recovered. Mr. Davidson made numerous friends in this country before leaving for South America.

Mr. Thad. M. Schnell, a member of the United States Military Telegraph Corps, who took a prominent part in the handling of telegraphs during the Civil War, and who has resided at Des Moines, Iowa, for many years past, has recently accepted a position with the Postal Telegraph-Cable Co. at Chicago, Ill., where this veteran of the key will no doubt display satisfactorily his old time telegraphic ability.

Mr. Patrick B. Delany, the telegraph inventor, who resides at South Orange, N. J., is the possessor of three costly dogs. There is nothing strange in this, but the names they bear prove that Mr. Delany is still an enthusiastic member of the telegraph profession, notwithstanding the fact that he has not touched a key (commercially) in a quarter of a century. The names of his dogs are "Telegraph," "Multiplex" and "Michael Faraday."

Doctor J. C. Barclay, electrician of the Western Union Telegraph Company, Chicago, Ill., in a recent letter to this paper, writes: "I think you deserve a great deal of credit and all the support from every one connected with the business that can be given to you for what you have done and are doing for the profession at large. Your paper has done more to educate people in the ranks and enable them to better themselves than any paper that was ever published, and if the chief operators and operators do not take advantage of this they have no one to blame but themselves."

It was an old saying of Mr. Walter B. Phillips, that a man never needed a vacation until he had had one. The truth of this remark was abundantly verified, although perhaps not in the sense intended, by the late experience of the New York man who sought recreation on the New Jersey shore. His present need of a further vacation, in which to recuperate from the attacks of the voracious insect indigenous to this American "Mosquito Coast," is but too painfully evident.

**Resignations and Appointments.**

Mr. R. E. Close, formerly operator on the Keokuk and Western Railroad at Keokuk, Iowa, has been appointed train despatcher of the same interests at Centerville, Iowa.

Mr. B. P. Hancock, chief operator of the Postal Telegraph-Cable Company, St. Louis, Mo., has been promoted to the position of traffic chief of the same interests at Chicago, Ill.

Mr. E. W. Blakeley, chief operator, Postal Telegraph-Cable Co., Columbus, O., has been promoted to the position of manager of the same interests, vice W. L. Truesdell, transferred to Chicago.

Mr. Stephen W. Monks, superintendent of construction of the Postal Telegraph-Cable Company at Albany, N. Y., has resigned, and accepted a similar position with the Western Union at Pittsfield, Mass.

Mr. Murray E. Dikeman, manager of the Postal Telegraph-Cable Company at Owego, N. Y., has been appointed manager of the same interests at Binghamton, N. Y. His successor at Owego is Mr. David N. Ellis, son of John S. Ellis, who immediately preceded Mr. Dikeman.

Mr. T. H. Harper has been appointed chief operator of the Western Union Telegraph Company at Toledo, O., vice Mr. F. C. Hackett, who has been transferred to a similar position at Cleveland, O.; and Mr. F. J. Krumling has been appointed wire chief of the same interests at Toledo.

**Obituary.**

Erwin L. Hayes, a telegrapher, of Elmira, N. Y., died on July 18, after a lingering illness.

John Fottrell, of Wilmington, Del., an old timer and well-known telegrapher, died on July 13, aged 62 years.

James F. Valentine, aged 40 years, foreman of construction of the Western Union Telegraph Company, Jacksonville, Fla., died on July 14.

Mr. John H. Cheever, president of the New York Belting and Packing Company and of the Mechanical Rubber Company, the father of Mr. H. Durant Cheever, of the Okonite Company, New York, died July 9, at his home at Wave Crest, Far Rockaway, New York city, in the 78th year of his age.

**New York Visitors.**

Mr. E. B. King, manager Western Union cable station (Jupiter-Nassau cable), Jupiter, Fla.



## ON BALANCING QUADRUPLIX'S AND POLAR DUPLEX'S.

BY E. L. BUGBEE, WASHINGTON, D. C.

Since the questionable scheme of putting up quadruplex and duplex sets in some out of the way place and sending them to the operating tables on "legs" has come into use, much valuable time is lost in getting "q.c." or some other invisible person to come to the set to balance.

This is the more aggravating when business is behind and wires working badly, because every set needs frequent attention, and "q.c." can be in only one place at a time.

Where it happens that both ends of a quadruplex are thus removed the delays are more than doubled; and when in addition the circuit is repeated the delays are sometimes longer than the intervals of working.

It often happens that one "q.c." will "come in" and cannot get the other. Two good operators at the opposite end, perhaps competent quad men also, are powerless to help him because the "ground" switch is on the set elsewhere. "Q.c." has other troubles pressing upon him; in fact, more than he can possibly attend to, and he reluctantly leaves this one temporarily. Meanwhile the other "q.c." comes in and can't get the one who sent for him. He also has troubles of his own and "can't stay here all day."

I have often wondered why, under such circumstances, a working balance is not found in some other manner, but it seems that very few men have ever got beyond the original instructions, namely, "get the other end to ground, then go to ground yourself, turn your relay armature to center," etc.

Now, there is a way to balance without going to ground at either end. I have practiced it more or less for years, and if I were working a polar duplex I would not ordinarily ask the other end to ground from the beginning of the year to the end of it. All that is necessary is to say "break," stopping the other end from sending for a moment. On a quadruplex it is a little more troublesome. It is necessary to stop the sending from the other end on both sides and to close the key on the second side to get the full force of the home battery.

My plan then is as follows: Place a finger of the left hand on the armature of the polar relay, resting the hand or arm against something to steady it. If the key at the other end is open, press forward on the armature; if the key at the other end is closed, press backward on the armature until the magnetic force of the coils is nearly overcome by the pressure of the finger. Then with the right hand open and close the key, working the pole-changer slowly, making very long dashes. If the relay armature under the pressure of the finger follows the movement of the key, that is to say, if the receiving sounder closes when the key closes, the balance is too short and needs lengthening by taking out plugs from the rheostat. On the contrary, if the armature goes backwards when the key

closes, the balance is too long and needs shortening by putting in plugs in the rheostat.

For the static, if the armature jumps when the key closes, more condenser is needed, and, on the contrary, if it jumps when the key opens the condenser should be reduced.

It may be that the armature is off from the center. If so it may be turned in or out as required. That can be pretty accurately judged by the eye and more so by the finger. After moving the armature the balance may need further correction to perfect it.

When the armature is on the center and the balance correct there will be no movement or jump of the armature under the most delicate pressure of the finger; and the finger can be trained to a very delicate touch. The first efforts to balance in this manner may be awkward and inaccurate, as they no doubt were after the old method, but "practice makes perfect," and it is possible to acquire sufficient skill in a short time to get a good working balance without the presence of "q.c." at the other end, to "ground."

This method of balancing is especially valuable at the terminals of a repeated circuit. There ought never to be any time lost by being out of balance at the terminal end of a polar duplex in waiting for the repeater station to come in to "ground" for a balance; nor on a quadruplex under any ordinary conditions.

### Recent Telegraph Patents.

A printing telegraph has been patented by John Rogginger, of Milwaukee, Wis.

A patent for a telegraph apparatus has been taken out by John Burry, of Fort Lee, N. J.

A telegraphic transmitting, receiving and translating arrangement has been patented by Alexander Muirhead, Shortlands, England.

A method of telegraphing, indicating time, or actuating mechanism electrically, has been patented by César R. Loubéry, Paris, France.

Two patents for telegraphic instruments have been awarded to John J. Ghegan, Newark, N. J., assignor to J. H. Bunnell & Co., of New York.

Patents for a telegraph switching apparatus and for a device for the protection of multiple-telegraph instruments, have been awarded to Francis W. Jones, of New York.

General A. W. Greely, chief signal officer of the United States Army, has devised a telegraph and cable code, which is said to be much simpler than those at present in use. A patent (No. 678,363) for this code was granted to General Greely by the United States Patent Office on July 16.

### Odds and Ends.

"Please send a little louder, I am hard of hearing," was the remark made on a wire recently.

The message read: "Am hoc, came on ove." It ought to have read: "Am here, came on Erie."

### The Importance in Telegraphy of Apparently Little Things.\*

BY THOMAS D. LOCKWOOD.

(Concluded from page 294.)

In operation also, we can well look after small matters. I have known reputable operators to adjust with a very slack armature spring, and a distant magnet; others to adjust almost altogether by the magnet screw; others, again, to prefer a moderately slack armature spring and a moderately distant magnet. Yet although I have found many who did not know it, the best results, as is evident by applying intelligent thought, are to be attained by working with the magnet as close to the armature as can be arranged without taking the chance of straining the latter; to adjust the limit stops so that while the armature is thus close it can never absolutely touch the magnet cores; to keep the magnet adjustment generally permanent; to have a highly adjusted armature spring, and as far as possible to adjust altogether by such spring. For, when this is done, we make the most of whatever current there is on the line and thus get a snappy forward attraction, while the tight spring gives an equally sharp retraction. Any temporary readjustment can be much more effectually done by adjusting the spring than by changing the position of the magnet.

Sometimes a relay, otherwise good, will exhibit signs of residual magnetism, and will thus become difficult of adjustment. A very little change will often remedy the effects of this phenomenon. This is accomplished by transposing the main wires and relay binding screws, so that the direction of the current through the relay winding is reversed. Yet how few are the operators capable of thinking of this simple expedient; and how few are they who have any acquaintance with the thought that polarity is changed when the direction of the current through the magnet coils is changed; or, indeed, with the phenomena of polarity at all.

Every man either at way or terminal stations should be sufficiently familiar with the pin switchboard to make any ordinary change wanted or called for, with certainty. That is, he should be able to put on a ground connection on either side of the instruments; to transfer any line to any set of instruments; to cross-connect any two lines; and if a main battery is placed at his station to determine the connection of the same with any or all of the lines, and to reverse the said connection.

None of these are great things, but I have known many operators who could not perform them all. The moral, of course, is, that they should be taught.

In the matter of batteries, we may surely assume that at stations where there are main batteries, there must always be some one of requisite skill to look after them, and that we may therefore restrict our considerations to local batteries. The care of these, of course, should be understood by every

operator; but, alas! it is not. Indeed, how can it be, if we have no organized plan of instructing those newly taking the vocation of an operator, and if we let each one gradually learn by rediscovery, instead of seeing to it that each young operator shall be able to avail himself of the accumulated knowledge of the years that have passed.

Often a local battery is allowed to remain without attention far too long, and is at last only taken apart, cleansed and renewed because it is actually unable to work any longer. When disconnected, if it be one having porous cups, it is found that the substance of the cup in a number of places is plugged or filled up with crystalline copper, and that the porousness is to a corresponding extent impaired. It is well to remember in setting the battery up again that these copper incrustations and deposits may be prevented in a new cup, and diminished in an old one, by the simple expedient of so placing the zinc that it shall not touch the bottom or sides of the cup. This fault can only occur, of course, in the old-fashioned Daniell cell, where the zinc substantially in the form of a four-rayed rod stands on end in the porous cup. It can be prevented by putting a little flat piece of wood in the bottom of the cup for the zinc to stand on, or by boring a hole through the top of the zinc and inserting a small cross-rod therein, by means of which the zinc may be hung across the top of the cup with its lower end a little distance from the bottom thereof.

In batteries—local batteries in particular—it frequently happens that the connections or screw clamps between the cells are allowed to oxidize, or to become covered with crystalline accretions; this last in the case of potassic bichromate batteries especially; and the crystals in such batteries, being chrome alum, are, therefore, non-conducting and insoluble. Too much stress cannot be laid upon the value of absolute cleanliness in this respect, and of bright surfaces in all such mechanical connections. Any carelessness in such matters produces an unnecessary resistance with consequent lowering of current and waste of energy.

Every operator at every station, however important or non-important, should know when and how to take a battery to pieces, how to clean it, and set it up again. I fear that all operators do not. Every operator should know that in a blue vitriol battery the solution of zinc sulphate should be strong enough, but not too strong; and that the current is unduly weak, both when the zinc solution is too weak, and when it is too strong. But I fear that many operators have no such knowledge. As I have previously said, how should they know such things if they are not taught, and how can they be taught if there is no one to teach them? I recollect an instance where at a certain summer resort I had occasion to send a telegram, and going to the office found the operator (a lady, and depending on a register,) in great tribulation because her register would not emboss. The local current was so weak that she could not read a word on the register. Being an old craftsman, I, of course, wished to help her, and taking a look at the local

\*Read before the convention of the Association of Railway Telegraph Superintendents, at Buffalo, N. Y., June 19, 20, 21, 1901.



battery, found it in the most deplorable condition. I had neither time nor inclination to make a thorough job of it myself, yet being satisfied from the look of things that the zinc solution was saturated, I emptied out about two-thirds of the solution surrounding the zinc plate and filled it up with water. To the great astonishment of the operator, who had watched me closely, evidently with the idea in her mind that only an inspired idiot could hope to strengthen a battery by weakening its solutions, the current instantly recovered its strength and the register consented to work. To this day she tells the wondrous story of the gentleman who strengthened the battery by weakening it. This, therefore, is another instance of the importance of the day of small things.

But to show how easy it is to go from one extreme to the other, I may mention an instance showing the way in which another young operator applied such knowledge, after I had, as I supposed, charged him with it sufficiently and correctly. He took his battery to pieces and set it up again under my supervision, duly setting aside a portion of the clear sulphate solution to start the current of the renewed battery; but obviously made up his mind on one point while doing so, to a certain extent in opposition to my instructions. The next time he had to do the same unpleasant work he decided for himself that if it was a good thing to throw out two-thirds of the old zinc solution (and it clearly was) it would unquestionably be a much better thing to throw away the whole of it. This he did, and, of course, with the result that when the battery was again set up it developed practically no current. The unfortunate operator was in despair, and had to own up that he had thought he knew more than his chief, and to acknowledge what he had done.

He was shown that the trouble could be remedied at once by buying a little sulphate of zinc and by substituting a solution of the same for a portion of his fresh water, and was told the reason why. And he was also told that under similar circumstances, the battery—if not wanted immediately—could make its own sulphate of zinc solution if short-circuited for a couple of days. He never forgot again, and I learned that when I had bright persons to teach, it was always a good plan not only to show how, but also why things should be done in one particular way rather than another.

When gravity batteries are used and there are no covers to the jars, there is a very great tendency to evaporation. When I first worked with gravity batteries I was told this, and was also told that to counteract such tendency, a layer of crude cotton seed oil must be poured over the top of the zinc solution. But crude cotton seed oil is a most abominably filthy article, and after thinking the matter over, I decided to try melted paraffine in its place. This answered the purpose admirably, quickly solidifying in a thin covering over the liquid. But it is too expensive for general use; and I presently found that tallow makes a very good substitute. It prevents evaporation, and when the cell is to be cleaned, the film of tallow can

with ease be cut across and round, and taken off in two or three pieces, exactly as a cook would remove flakes of congealed fat from the surface of cooled soup.

Sometimes a Leclanché cell with sealed porous cup, will not work at all satisfactorily. It seems as though the cup though really porous is utterly impervious to the battery fluids. When this happens, it is probable that the vent holes in the sealing have been stopped up. This being so, the remedy is to run a pointed iron or steel rod, such as a fine screw-driver, through the holes into the mixture so that the gas may escape. But if the so-called porous cup be really too hard or glazed, it can be made to work by boring several holes through its sides.

There are, of course, a multitude of other small points regarding the conductor, battery and instruments which might be mentioned; but this paper is already too long, and I have thought it best to speak of little things of import which are not often mentioned in books, but which have come under my personal observation. Doubtless every one of my hearers is well posted on these and many other similar matters; but they are so common to us seniors, that we forget they were not matters of course to us when we were juniors.

I think they indicate, first, the need of some practical plan for the instruction of young operators, not only in sending and receiving Morse, but also in everything that can be taught about the line, instruments and batteries with which he is to be associated; and, second, that there might properly be a regular inspection system for lines, batteries and instruments, but especially the two latter, this being so carried out that each office should be thoroughly inspected at least twice a year.

The two ideas might be combined in the person of a suitably qualified, and well experienced operator, who visiting offices periodically could not only perform such personal inspections, but could likewise devote a portion of his time to the questioning and instruction of the younger operators; and in some cases also of such of the older ones as do not already know it all, or are not too old and case-hardened to learn.

Eighteen acting telegraph operators at Police Headquarters, New York city, have protested against the obstacles which they say are thrown in the way of becoming regular operators. At present they each get \$1,400 a year, while regular operators, of whom there is none at headquarters, get \$1,850.

Complaint is made of the exorbitant charges exacted for telegraph messages by the United States Government land lines in the Philippines. Evidently the desire to make the lines self-sustaining is the cause for the high rates.

The Corean (Asia) telegraph bureau reports a business for 1900 amounting to 72,443.26 yen (\$36,222), being an increase of 21,756.37 yen (\$10,878) over 1899.

**Electrical Units.**

In response to a request for the publication of the electrical units as recommended by the International Electrical Congress, in August, 1893, and which have since been adopted and legalized by the United States, England and other countries, they are given as follows:

The unit of resistance, the international ohm, which is based upon the ohm equal to  $10^9$  units of resistance of the C. G. S. system of electro-magnetic units, is represented by the resistance offered to an unvarying electric current by a column of mercury at the temperature of melting ice, 14.4521 grams in mass, of a constant cross-sectional area and of the length of 106.3 centimeters.

One B. A. unit = .9889 legal ohms = .9866 international ohms.

One legal ohm = 1.01122 B. A. units = .99767 international ohms.

One international ohm = 1.01358 B. A. units = 1.00233 legal ohms.

The megohm = 1,000,000 ohms.

The microhm =  $1-1,000,000$ th ohm.

The unit of current, the international ampere, which is one-tenth of the unit of current of the C. G. S. system of electro-magnetic units, and which is represented sufficiently well for practical use by the unvarying current which, when passed through a solution of nitrate of silver in water, and in accordance with the standard specification, deposits silver at the rate of 0.001118 grams per second.

Milliampere =  $1-1000$ th ampere.

The unit of electro-motive force, the international volt, which is the E. M. F. that, steadily applied to a conductor whose resistance is one international ohm, will produce a current of one international ampere, and which is represented sufficiently well for practical use by  $\frac{1}{118}$  of the E. M. F. between the poles or electrodes of the voltaic cell known as Clark's cell, at a temperature of  $15^\circ$  centigrade.

As a unit of quantity the international coulomb, which is the quantity of electricity transferred by a current of one international ampere in one second.

As a unit of capacity the international farad, which is the capacity of a condenser charged to a potential of one international volt by one international coulomb of electricity.

The microfarad =  $1-1,000,000$  of a farad.

As a unit of work the joule is  $10^7$  units of work in the C. G. S. system, and which is represented sufficiently well for practical use by the energy expended in one second by an international ampere in an international ohm. It is equal to .7373 foot-pound.

As a unit of power the watt, which is equal to  $10^7$  units of power in the C. G. S. system, and which is represented sufficiently well for practical use by the work done at the rate of one joule per second.

746 watts = one horse power.

The kilowatt = 1,000 watts.

As a unit of induction the henry, which is the induction in the circuit when the E. M. F. induced in this circuit is one international volt, while the inducing current varies at the rate of one ampere per second.

One horse power = 550 pounds raised one foot per second, or 33,000 pounds, one foot per minute = 746 watts.

Mils = thousandths of an inch.

$d^2$  = circular mils.

The circular mil is now generally used as the unit of area when considering the cross-section of electric conductors, the resistance being inversely, and weight of copper directly, proportional to the circular mils.

**Dispatching Trains by Telephone.**

Mr. Thomas E. Clarke, an old time telegrapher, now general superintendent of the Delaware, Lackawanna and Western Railroad Company, at Scranton, Pa., has decided to run the trains on a portion of his system by telephone instead of by telegraph as at present.

The work of installing a complete telephone system along the line of the Morris and Essex division of the road is being pushed with all possible dispatch. It is the intention of the company to equip each station with a complete telephone system to be used in the place of the present telegraph system in transmission of orders pertaining to the arrival and departure of trains, the officials believing that greater accuracy and saving of time in the carrying out of orders can thus be secured. It is proposed to equip the various branch lines first, and then, after a careful trial, if the plan is found to satisfactory, the main lines will be fitted out.

This new departure will in no wise effect the present working force of railroad telegraphers, for in the majority of stations along the lines of the Lackawanna road the operator also performs the duties of ticket and freight agent, and at those stations where individual operators are employed the force will still be maintained, as it is not the intention of the company to discontinue the telegraph system, except so far as it applies to the dispatching of trains. Superintendent of Telegraph L. B. Foley, who has charge of this work, states he is unable to say just how soon the new system will be in operation, but the work is being hurried as fast as possible.

Telephone lines have been constructed from Hoboken to Washington, N. J.; from Hoboken to Morristown, N. J., to be extended to Dover, N. J.; from Tobyhanna to Gouldsboro, Pa.; from Hallstead, Pa., to Binghamton, N. Y., and from Scranton to Clark-Summit, Pa., over all of which trains will be moved by telephone. These lines cover the portions of the railroad system where the traffic is very heavy. For the purpose of dispatching trains regular "19" and "31" train order blanks will be used. In order to insure safety and to record the train orders transmitted by telephone a phonograph will be placed in each circuit, the wax cylinder being large enough to record twenty-four hours' work.

TELEGRAPH AGE should go regularly to every one interested in the telegraph. Write for sample copy.



**James H. Drakeford.**

James Haile Drakeford is one of the brightest men among the younger generation in the employ of the Western Union Telegraph Company. He is a native of South Carolina, having been born at Camden, in that State, on October 19, 1872. He has been in the telegraph service for about ten years, continuously during that time with the Western Union, commencing his business career before he was twenty years old. His first position as an operator was in 1891, when he was stationed at the well-known Battery Park Hotel, at Asheville, N. C. From there he went to the Charlotte, N. C., office for a brief time, or until December 15 of the same year, when he was called back to Asheville to fill the position of chief operator. The occupancy of this post, however, was of short duration, for in January following, 1893, he was transferred to the Richmond, Va., office, where as an



MR. JAMES H. DRAKEFORD,  
Western Union Manager at Asheville, N. C.

operator he remained until May 15, 1894. By this time, although not yet 22 years of age, so capable a telegrapher had he become, that he received the appointment as manager of the Asheville office, to which point he once again returned. This responsible place he has since held both to his own credit and to the advancing reputation of the office.

On the first of January last Mr. Drakeford was married to Miss Clara Bristol, of Chicago, Ill., the only daughter of Mr. C. H. Bristol, general superintendent of construction of the Western Union Telegraph Company in that city. Mr. Drakeford is a prominent Mason and has filled various high positions within that order. At present he is a High Priest of Royal Arch Masonry in Asheville, a trustee in the only Scottish rite body in that State and a member of the Ancient Arabic order of the Nobles of the Mystic Shrine.

**Responsibility for Electrolysis.**

The report of the Master in Chancery on the Peoria, Ill., electrolysis litigation is unique in its frankness, and, in so far as it places the entire responsibility for the alleged damage to the mains and services of the Peoria Water Works Company upon the electric railway companies, says the Telephone Magazine, it establishes a precedent which may be far reaching in its effects upon the capital invested in electric roads throughout the country.

The question of the right of the railway companies to use the earth as a return commenced almost simultaneously with the introduction of the trolley. The telephone companies first raised objections to this owing to the interference with their service, which at that time was almost entirely on grounded circuits. The railway companies were victorious in the resulting litigation and the telephone people were required to introduce the metallic circuits as a result. The question involved in the controversy was somewhat different from that due to the Peoria conditions, and it is fair to assume the railways had as much right to the earth as the telephone companies.

Subsequently, however, attention was directed to the apparent deterioration of certain metallic underground structures, such as water pipes and lead-covered cables. After some experimenting it was found that, owing to the poor rail bonds, the rails being used as a return, the railway currents were leaving the rails at points remote from the power stations and following the water mains and lead-covered cables as the path of the least resistance, and, within certain districts adjacent to the power stations, returned to the rails.

These districts may be entitled the "danger districts," for damage is chiefly done when current leaves the mains or cables to return to the rails. Under these conditions the cables become the anode and the rails the cathode of an electrolytic cell, the earth, where moist, acting as the solution in the cell. The rapidity with which the deterioration occurs is largely affected by the difference in voltage between the cables and the rails. The greater the difference in voltage the more rapid becomes the deterioration, and vice versa.

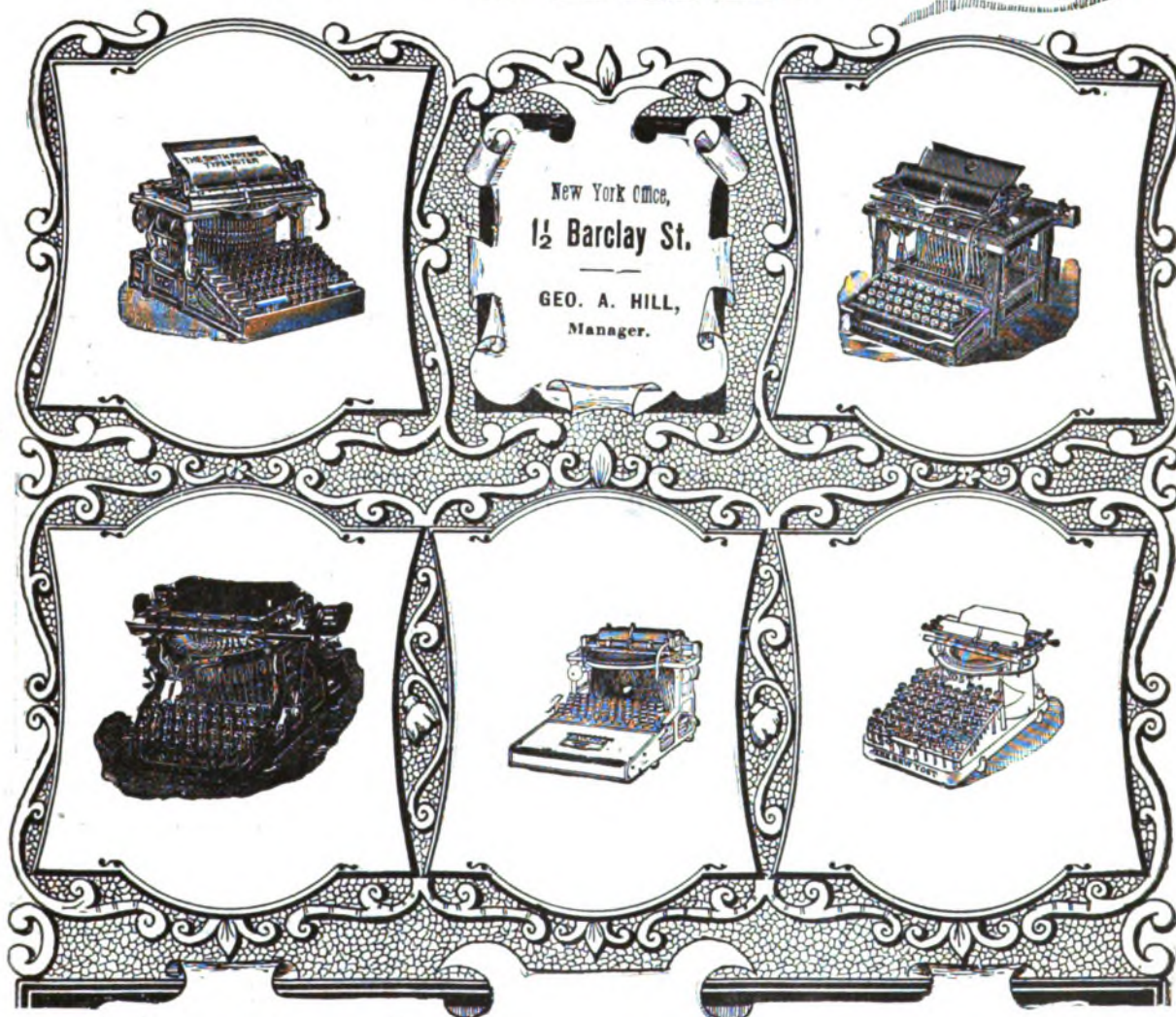
The decision under discussion points to the adoption of the overhead double trolley or a completely insulated metallic circuit as the only means of effectually and completely removing the cause of trouble.

The Western Union Telegraph Company has adopted the Atkinson repeater. This repeater is the invention of Mr. R. L. Atkinson, who up to a short time ago was a member of the Western Union force at 195 Broadway, New York. This repeater was described and illustrated in our issue of August 1, 1899.

On July 19, 1883, eighteen years ago, the big telegraphic strike, which lasted a month, occurred. It was a memorable affair and widespread in its operation.

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NEW YORK, August 1, 1901.

**NOTE.**—We desire to state that back numbers of this paper, those issued more than six months prior to any current date, will be charged for at the rate of twenty-five cents apiece when they can be furnished. This price is fixed because of the necessarily limited stock we carry, and of the difficulty we commonly have in filling an order. Oftentimes the request is for papers of a more or less remote date, with the expectancy of being supplied at but ten cents a copy, whereas in order to obtain the desired issue we are ourselves frequently obliged to pay the larger sum, or even more. The growing value of complete files of TELEGRAPH AGE should cause our readers to carefully preserve their issues.

**THE ROBERSON QUADRUPLIX.**—The Roberson Quadruplex System, which has been recently adopted by the Western Union Telegraph Company, and which will be put into extensive use throughout that system, was illustrated and described in our issues of March 16 and April 1 of this year. Those who desire copies of these issues can obtain the same at 10 cents apiece. As there are only a few of these numbers left, we would urge those who wish to become posted on this new system to procure copies before they are entirely out of print.

Rumors of telegraphic consolidation between the Western Union and Postal Telegraph-Cable companies are rife again, and the officials of both are once more denying that there is any truth in the report. On account of the frequency and pertinacity with which these recurring canards are circulated, it is suggested that the companies concerned prepare a denial blank for ready use when called upon for information.

## Work of the Editor.

It is odd what curious conceptions frequently prevail as to the functions of an editor and the methods employed in the making up of a paper like TELEGRAPH AGE. Sometimes exceedingly grotesque questions are put to us by correspondents regarding the matter. Some people there are who imagine, apparently, that pretty much everything that appears in this journal originates with and is written by the editor, and that the whole is the direct expression of but a single individual. Others, again, appearing to believe that scarcity of material is one of the difficulties that has to be met and overcome in a newspaper office, accordingly send in vast quantities of matter, much of it "original," for purposes of helping to "fill up." This is doubtless well meant, but the waste basket invariably receives the "stuff," or, possibly, to let the contributor down easy, it is "declined with thanks."

Then there is the man who thinks it's easy enough to edit a paper and who always has advice and suggestions on tap to fit every possible exigency. His diction is usually muddy, and his grammar execrable.

Now, as a matter of fact, the editorial problem resolves itself into the proposition, not altogether of what to print, but equally so of what not to print. From the great mass of material which comes to us from many sources it is the editor's business to make proper selections therefrom. This is no easy task, for it involves the careful and discriminating reading of enough matter to fill a dozen such papers as this. From out of it all is culled and winnowed the desired information bearing on the telegraph—practice, policy, incident, history, story, the welfare of the fraternity, etc., appropriate and essential for publication in an exclusively telegraphic paper. All matter thus selected must necessarily be put in proper shape for use—in a word, it must be edited. This means rearrangement frequently; the combining of information and often its verification; the writing of words or paragraphs of introduction; the choosing of headlines, etc. It will thus be seen that it is not the dilemma occasioned because of a lack of matter wherewith to fill our pages that confronts the editor, but rather because of the very superabundance from which pertinent choice must be made.

While, of course, the successful editor should be a well informed man, to many laymen he is supposed to (should) know all that is transpiring in the telegraphic world, all that ever has occurred therein, and to be able also to make a fair guess of what may happen in the future. His mind should be a perceptive as well as a receptive one, a complete storage reservoir of facts and dates labeled and arranged for immediate use, and held ready at all times to honor offhand all drafts of questions that may be made upon it. And yet, how quick is the otherwise complaisant eye to detect an error. If the painstaking effort of the editor, made evident in every department of the paper, be not sufficient to at least relieve him of intentional or even careless acts of commission as well as of omission, nothing will probably save him. For, when all proofs have been carefully



read and revised and the paper finally made up, and the printed page goes to the reader bearing the dreadful and inexcusable misspelling of a name (very likely the fault (?) of the printer, or more likely because it was badly written in the original copy), then must the unfortunate editor come in for a share of criticism that nothing can offset.

#### Telegraph Age and Its Agents.

To act in a representative capacity for TELEGRAPH AGE evidently carries with it a certain amount of influence, and imparts to the individuals so employed and identified a prestige and standing in telegraphic circles not easily otherwise acquired.

This we judge to be the fact when we note that within a single week, lately, no less than three of our agents, located in different parts of the country, have been singled out for promotion. The names of these fortunate persons who have thus been selected are: C. F. Bartlett, to be chief operator of the Postal Telegraph-Cable Company, at St. Louis, Mo.; T. H. Harper, to be chief operator of the Western Union Telegraph Company, at Toledo, O., and R. E. Close, to be train dispatcher of the Keokuk and Western Railroad, at Centerville, Iowa.

These are well merited promotions and were conferred because the appointees were deemed fit by reason of experience, fidelity and by close and intelligent application to the interests which they faithfully served. They had made a practical study of the science of telegraphy, following out the admonitions so frequently expressed in this journal and urged upon its readers. They had prepared themselves for more advanced positions, and of this fact their respective companies were fully cognizant, for, as in the case of almost all corporations, whether so admitted by employees or not, a closer watch is kept upon the men than usually appears on the surface.

The ethics of the situation is with the painstaking and studious employee, and promotion is the logical result. Favoritism may exist, but the instances of its exercise are comparatively few, and real worth in the ranks will almost invariably meet with recognition and reward. For in ninety-nine cases out of a hundred the future officials of all grades in the telegraph service must, in the very nature of things, come from the bottom. How important, then, to the individual to prepare himself and make ready while yet a young man for a future that normally should be full of promise!

We are gratified to know and to feel that the influence of this journal has been of a tendency to awaken enthusiasm and to stimulate ambition in the individual. Without enthusiasm nothing can be accomplished; with it all opposition may be overcome. We have the testimony of many operators that their uplift in character and purpose in life, and consequently their business betterment, is due to the influence exerted by TELEGRAPH AGE. This is a pleasing reflection.

We believe the tendency to-day among a majority of telegraph operators, especially among the younger men, is to acquire a greater technical knowledge of their profession. And we may be pardoned for ex-

pressing the belief that in part, at least, this is due to the admonitory course pursued by this paper. For it is in evidence that hardly a month passes without our receiving information notifying us of the appointment of one or another of our agents to positions of greater responsibility along the line of promotion. It would appear, therefore, that the experience gained in representing this journal and of coming under its influence makes for better things. Our agents in all parts of the country now embrace a fine body of men, including superintendents, managers, chief operators and a large number of operators, many of the latter of whom are well qualified to occupy more important places, and to whom doubtless suitable reward will sooner or later be extended.

#### Wireless Telegraphy on Shipboard.

Fresh interest has been aroused in wireless telegraphy by the successful tests recently made from going and coming trans-Atlantic steamships of the transmission of messages to the coasts of Ireland and England, covering distances of from forty to sixty miles and under all conditions of weather. These practical demonstrations of the feasibility of sure communication with the shore by vessels out of sight of land, suggests many interesting features possible in this science, applicable alike to commercial and to naval purposes.

The results achieved have been of a character to awaken a greater attention to the system of wireless telegraphy in this country, and the subject in its various aspects is receiving more serious consideration, especially by maritime interests, than at any previous time. The possibility of its adoption for the earlier announcement of the arrival of steamers and of the establishing in connection therewith offshore signal stations along the coast, notably at Sable Islands, near Nova Scotia, that being the point of separation, west and south, for incoming steamers, and of utilizing as far as may be light ships for the purpose, is being mooted.

While as yet but few vessels have been fitted with the necessary instruments for the exercise of wireless telegraphy, and these but for experimental purposes, it seems probable that the near future will witness many others so equipped, both on the ocean and the Great Lakes, as the system develops and demonstrates its use and worth. The real question that confronts steamship companies in this connection is whether it will pay them to maintain this system on board their ships and to employ expert telegraph operators for its execution. If so, the further question of whether the steamship of the future will number among its officers a chief telegraph operator, will not be without interest.

The cable repair steamer *Minia* sailed from Halifax, May 1, to repair a broken Western Union cable in mid-ocean. One end of the broken cable was secured on May 16, and the other on June 1, in a depth of 15,000 feet. The cable was spliced in a few hours after the second end was found. It is claimed that this establishes a record for deep sea repairing.

**Women in the British Post and Telegraph Office.**

It is probable that women have always been included among the employees of the post-office. The writer can remember when the head of the post-office in the great town of Sheffield was a woman, and when there was a "postmistress" of Gibraltar. The post-office sometimes "runs in families," and cases are not infrequent where a postmaster is succeeded by his widow, or daughter, or other female relative. For the most part, such cases would indicate a desire on the part of the authorities to reward long and faithful service or to exercise compassion towards dependent relatives. Not only are postmistresses fairly common in these days, but postwomen—that is, female letter-carriers—are by no means uncommon. There recently retired from the Bristol post-office a postwoman who was born in 1825, and who must have been delivering letters for the best part of sixty years. She was 72 years of age when she retired, and it is estimated that she must have walked a quarter of a million miles during her long service. Although she served a very sparsely populated district, she was never stopped nor molested in any way on her round, and it is needless to say that she gained the respect of all with whom she came in contact. The Lords of Her Majesty's Treasury, recognizing the exceptional circumstances of this woman's service, granted her half-pay in the shape of pension, and the inhabitants of her native village took the occasion of her retirement to present her with a handsome testimonial. Another postwoman in the Bristol district has just succeeded her aunt as sub-postmistress, the latter having served for forty-seven years and reached the astonishing age of 95. The niece had served for forty-two years as postwoman, so that she must be well on to 60 on taking up her new appointment. The post-office cannot be an unhealthy occupation, or its employees would not live to such abnormal ages. But there are young postwomen as well as old. We have seen the portrait of one who cannot be much above 30, and who, attired in the official overcoat and cape, with a saucy felt hat and feather, looked uncommonly smart and business-like. She is the wearer of two good-conduct badges, and appears to take her full round of duties—making two rural deliveries a day, besides meeting the trains and attending to the traveling post-office apparatus. A man could hardly do more, and some men do a great deal less. But then this woman was Scotch!

But women have invaded the higher ranks of the post-office service. This may be said to have been brought about by the acquisition of the telegraphs in 1870, when a considerable number of female telegraphists were taken over by the Post-Office from the several telegraph companies then existing. It would appear that women were first employed in telegraphy in 1853, the innovation being due to the initiative of Major-General Wylde, a director of the Electric Telegraph Company. General Wylde was in attendance on the Queen at the time, and it is said that Her Majesty expressed to him her approval of the employment of females as

telegraphists. The extent to which such employment has obtained during the past forty-five years would probably be a source of surprise, as well as of gratification, to Her Majesty. At the present time the Post-Office employs not far short of 30,000 women in various capacities, and of these it is probable that the largest number are employed in telegraphy or in duties relating thereto. In London alone the number would appear to exceed 1,500, of whom no fewer than 1,000 are employed at the Central Telegraph Office in St. Martin's-le-Grand. The salaries range from 10s a week to a "girl graduate," to £300 a year to the matron who superintends the establishment, the intervening grades being those of supervisor and assistant supervisor, with salaries ranging between £100 and £200. There can be no doubt that, for all but the hardest duties and the night work, women are admirably adapted for telegraph work. They are more tractable and patient than men, and have a finer sense of touch and hearing, the latter being an indispensable qualification when so much telegraph "translation" is now done by sound, aural signals having largely displaced visual in these days of progress. All kinds of instruments are worked at the central office, and there are few, or none, which cannot be efficiently operated by a fairly-skilled female telegraphist. The writer has even seen the Hughes type-printing instrument, one of the most laborious and difficult to work, admirably operated by a young woman. Telephone work, too, is peculiarly suited to girls; and there is here a large field for female employment in the future. Not only in London, but in all the large cities—Manchester, Liverpool, Birmingham, Edinburgh, Glasgow—women are largely employed in telegraphy, and with equally satisfactory results. The romance of the telegraph has been heightened by the employment of women, and courting, and even kissing, are said to be practiced on the wires. Mr. Scudamore, whose commanding energy bestowed on the country the inestimable boon of cheap telegraphy, told in one of his early reports on the reorganization of the system how a young woman in London formed an attachment for, and became engaged to, a young man in Berlin, whom she had never seen, and how they subsequently got married, purely on the strength of a telegraphic courtship! But then, as Mr. Scudamore pointed out, "the whole world is the country of the telegraphist. Sitting at one end of a wire, no matter what its length, he converses as easily with the operator at the other end as if he were in the same room with him. Strange as it may seem, he knows by the way in which the operator at the other end of the wire does his work whether he is passionate or sulky, cheerful or dull, sanguine or phlegmatic, ill-natured or good-natured. He soon forms an acquaintance with him, chats with him in the intervals of work, and becomes as much his companion as if he were working face to face with him." What more can an amorous couple require than this?—unless it be an exchange of photographs; for the telegraph has not yet achieved the transmission of likenesses, although in the fac-simile telegraph we have a close approximation to such a result.



Quitting the region of romance, it may be noted that young women of the class from which telegraphists are drawn are largely employed as counter-clerks or "counter-women" at the various branch post-offices in London and other large towns. If it be remembered that a post-office clerk nowadays has to be something of a banker, an insurance agent, a parcel receiver, as well as a stamp-seller and an interpreter of the Postal Guide, with its 500 odd pages, it will be seen that the department has great faith in the capacity of women for the performance of the most exacting duties. Such faith has, apparently, not been misplaced, for women are being employed in increasing numbers at post-office counters, and the work, it would seem, is neither too intricate nor too exacting for them. Time was when the public, or some portion of it, made rather a stand against the female post-office clerk, and when the comic journals delighted to expose her flirtations and frivolities from week to week. But it is much more dangerous to flirt across a post-office counter than through a telegraph wire between London and Berlin unless the wire happens to be "milked" by some inquisitive person en route. Somehow, the comic man was never very happy in his hits at the post-office girl, and it is now a recognized thing that certain post-offices shall be served by women, and very well served, too.

But a still higher development of female labor has taken place in the Post-Office since the acquisition of the telegraphs. The great account branches of the department have called in the aid of the woman clerk to such an extent that it is doubtful whether they may not one day outnumber the men employed. Thus, in the Accountant-General's department, where a total of more than eighteen hundred persons are employed, more than six hundred are women. These latter are employed in two separate branches—namely, the Postal-order branch and the Clearing House branch, and the salaries range from 12s a week for sorters to £400 a year for superintendents, the intermediate classes being clerks, principal clerks and assistant superintendents. The work in the Clearing House branch is wholly connected with the telegraphs, and is largely taken up with the bringing to account of press telegrams, sent without prepayment, and the making out of accounts against the various newspapers on whose behalf they are transmitted. This is a more or less complicated class of work, but it is performed with perfect efficiency by the two hundred or so women clerks employed in it. The term "Clearing House" is no doubt a survival from telegraph days, that being the designation given by the old companies to what is known in the Post-Office as the "Message Branch." The Postal-order branch, although of more recent date, employs twice the number of persons employed in the Clearing House branch, a large army of "sorters" accounting for most of the difference between the two establishments. It is clear that much sorting must be required when millions of orders have to be placed away in pigeon-holes, regard being had not simply to the amount of the order, but to its number and cipher

as well. The facility with which orders can mostly be traced is the best evidence of the care with which the work is done by the women sorters employed upon it. Last year upward of 67,000,000 of orders were issued, representing a total value only a trifle less than 25,000,000 sterling.

It is in the Savings Bank Department that the most extensive employment of female labor is to be found, the establishment for the current year exceeding a thousand persons, and nearly equaling that of the male branch of the office. A new feature is to be found in this year's list—namely, "girl clerks," of whom a total of sixty contrasts with one hundred and fifteen boy clerks. There are upward of two hundred sorters and six hundred second-class clerks, the establishment being completed by first-class clerks, principal clerks, assistant superintendents of two grades, and a superintendent who rises to the princely maximum of £450 a year. We wonder if a sorter or a girl clerk carries a superintendent's baton in her pocket, because, if so, there would be the splendid leap from about £30 a year to the princely amount just mentioned. It is not difficult to understand that there must be much work in the Savings Bank Department exactly suited to the female capacity and the female love for order and precision. Millions of documents have to be dealt with in the course of the year—acknowledgments for sums deposited, warrants for sums to be withdrawn, declarations of various kinds, and a host of forms which is positively bewildering. Most of these, no doubt, pass through female hands, and probably also some of the ledgers are posted by the more experienced women. The odd thing is that, of all the millions deposited and withdrawn during the year, not a penny enters or leaves the building in Queen Victoria street known as the Central Savings Bank, which is simply an office of account. The money is dealt with by the postmasters throughout the country, and here again the female element comes in, many postmasters' assistants being women.

It remains only to notice one other branch of the service—the Returned Letter Office, where women are employed in any numbers. Here about fifty persons are engaged in the work of returning "dead" or derelict letters to their senders, an operation requiring care and confidence, but no great skill. Hence the salaries only run from 14s a week in the case of a "returner" to £170 a year in the case of the superintendent. This office used to be called the "Dead Letter Office," and is so called by many old-fashioned persons to this day. But the women clerks have never known it by this designation, as their employment in this branch of the service is of comparatively recent date.

Only one great department—the Money-order Office—has escaped the female invasion so far. But the fiat has gone forth, and henceforward money-orders, like postal-orders, will be sorted by female hands instead of by male. The Money-order Office is a comparatively small establishment, and it is understood that a small contingent of women clerks drawn from other branches will inaugurate the era of female labor there. By and by, no doubt, a proportionate number of women clerks

will be borne on this establishment, as in the other great branches of the office.

One department we had very nearly missed—the Medical Department. Even here women are employed, there being a female medical officer and an assistant female medical officer. There is also, unless we are mistaken, a lady doctor at Manchester. It was Mr. Fawcett, when he was postmaster-general, who introduced women into this department, and the large number of females employed in London would seem to afford an ample justification for this course.

We have thus seen how enormously the employment of women by the Post-Office has increased since the acquisition of the telegraphic service in 1870. It has spread into nearly every branch of the service, not even excepting the secretary's office, where it is understood that women typists are employed; and it is probable that the solicitor's office is the only one which has escaped the invasion of the "monstrous regiment of women." Women solicitors are not yet an accomplished fact, but they will come in time no doubt. It would seem, too, that the example of the Post-Office has spread to other departments of the Civil Service, the Inland Revenue establishment showing a number of "female assistants" in the office of the Controller of Stamps and Stores, and a number of "female tellers" in the Stamping Department. The Customs is more modest, only figuring for a few women typists at the present moment; and this is probably the extent to which most other government offices are committed to the "forward movement" so far. Even the Treasury, it is understood, has its women typists, so that "My Lords" will be able to judge for themselves as to the value of female labor in the public service.

Appointments in all branches are eagerly sought after, and the number of female candidates attending the competitions held from time to time is enormous. From twenty to thirty candidates per vacancy is a not uncommon proportion in the more important competitions, and a severe training must be gone through before a candidate has the smallest chance of success. "Cramming" has to be done by women as systematically as by men before the ordeal appointed by the Civil Service Commissioners can be successfully faced; and the "Civil Service factories," as the crammers' establishments have been rather cleverly, if cynically, described, are almost as full of one sex as of the other. Whether the best material is obtained in this way is a matter beyond the scope of this article, although it is a point which has engaged attention in the recent past, and will be increasingly debated in the near future. Let it suffice for the present to say that the material turned out so far has been found sufficient for its purpose, and that the Civil Service sieve is not too narrow in the mesh, having regard to the enormous number of persons anxious to get through it.

It would be idle to speculate whether the increased employment of women in the public service is due to considerations of policy, of philanthropy, or of parsimony. It is a great fact, and it will re-

main so long as there is simple, useful work to be done, which can be as well, or better, done by women than by men.—Chambers' Journal.

#### A Hot Weather Episode.

A young man telegrapher in the West and a young lady manipulator of dots and dashes in a neighboring city, had a genuine scrap over the wires on one of the recent hot days. The young man became so excited over the affair that determining on vengeance he took the first train for the home of his opponent. On arriving at the telegraph office at his point of destination, he excitedly asked for his recent adversary. When confronted by a pretty young lady he was somewhat taken back, but soon recovered himself and said:

"I thought you were a man, and I came here with the intention of taking a few punches at you!"

"All right, punch away!" the pretty young lady nonchalantly replied. The young man's equilibrium was immediately lost again; he offered a hasty explanatory apology, which was accepted, and then made a flying start for home.

A great deal of food for reflection—more than they need these dog-days—has been supplied the two contestants by this impulsive young man's hasty trip, and it is pretty safe to conjecture that they will both laugh many a time over the unique occurrence.

It is needless almost to add that the young lady is kept busy denying that she has aspirations for pugilistic honors in the female field or elsewhere.

The trouble was occasioned over a message of market quotations, and his office associates were uncharitable enough to presume that the young man's expectations were not realized on a certain cereal, and that this, coupled with the extremely hot weather, caused him to lose his temper, several hours of valuable time and a certain portion of his prestige.

The pretty young lady was not to be bluffed; so he could not vent his spleen on her and it is safe to presume that she returned any compliments he may have offered her over the wire.

PACIFIC CABLE.—A dispatch from London says: In the House of Commons J. Austen Chamberlain, Financial Secretary to the Treasury, detailing the progress of the Pacific cable, said that several sectional cable houses had already been sent out, and were being erected at the various landing places. The survey had been satisfactorily completed over 1,500 miles of the proposed route, and the manufacture of cable had already begun. Mr. Chamberlain said landing sites had been selected in Queensland, New Zealand, Norfolk Island and at Vancouver, and that the cable board was satisfied as to the ability of the contractors to complete the work by the end of 1902.

Every telegrapher who loves his profession, who is determined to master its technicalities, and thus insure for himself the confidence and respect of his official superiors and place himself in the direct line of promotion, should subscribe for TELEGRAPH AGE.



### Telegraphers Mutual Benefit Association.

Assessments 381 and 382 have been levied to meet the claims arising from the deaths of Joseph S. McGlathery, at Mobile, Ala.; Charles B. Leek, at Ashtabula, O.; William C. Daley, at Baltimore, Md.; Harry C. Bliss, at Bangor, Me.; Hettie A. Humphreys, at Carson City, Nev.; John U. Ansley, at Augusta, Ga.; Fred T. Meyer, at Brooklyn, N. Y., and Daniel P. Hartley, at Batesburg, S. C.

The mortality experienced during the present fiscal year is the heaviest in the history of the association. The total number of deaths reported to date is larger than that of any full year since organization, and to meet claims arising from same the executive committee has deemed it advisable to call an extra assessment for the month of August, 1901.

During the year three of the charter members passed away, and of the remaining deaths fifty per cent. show a membership of more than twenty years.

This statement strikingly illustrates the care and attention which has always been given to the selection of applicants for membership, and is the most potent reason why the cost of the insurance has always been so moderate.

Members are again reminded that it largely devolves on themselves to keep the cost of the insurance well within the limit fixed by the by-laws, by bringing the merits and benefits of the association to the attention of all eligible persons, to the end that by a substantial increased membership the ratio of deaths may be kept normal.

### Subterranean Telephoning.

The success that has attended the laying of the subterranean telegraph cable between London and Birmingham, a distance of 113 miles, has prompted the postal authorities to utilize the cable for telephoning. This is considered to mark the limit of underground telephoning with the existing apparatus, says the Scientific American. Several of the other leading provincial towns, such as Liverpool, have petitioned the postal authorities to connect their cities with London by a direct subterranean cable, such as that running to Birmingham, but their requests have been refused until a method of transmitting underground telephonic messages over long distances is found. The British Post Office is gradually providing a reliable telephone system throughout the whole of the United Kingdom by the aid of the telegraph wires. For this purpose \$10,000,000 has been authorized by Parliament, a large portion of which sum, however, is being expended upon the London telephone system, which it is expected will be partly in operation in the autumn of this year. The competition between the government and municipal telephone systems on the one side, and the National Telephone Company, which has hitherto enjoyed a monopoly, on the other side, is very keen. One town in the south of England, the first to possess a municipal telephone, has been the means of reducing the charge of the private company from \$50 to \$20 per annum.

### The Alaskan Telegraph.

The Signal Corps of the army expect to have telegraphic communications established between the State of Washington and Sitka, the capital of Alaska, by September 1, and to aid in the work upon the lines already in progress, Major Dunwoody, the acting chief of the Signal Corps, has asked for the enlistment of about forty additional telegraph operators and linemen.

Considerable difficulty is experienced in obtaining operators to enlist in the army for service in Alaska. The department is, however, holding out the inducement of the large advantages and opportunities offered to men who go to Alaska and become familiar with the country in the great gold and copper regions.

Captain Bonnell, who is building the telegraphic line from Valdez northward to Eagle City, is in need of more men, and as soon as he has completed his task work will be commenced on a line connecting Eagle City with Fort Hamlin.

The line from St. Michaels already extends to Fort Hamlin, and the idea is to extend the wires across to Eagle City.

The Canadian line from the latter place was expected to be opened July 15, and will probably be delayed only a short time. The cable between Juneau and Skagway will be completed this summer, and from the latter point a line will connect with the Canadian telegraph, and thus communication will be established between Washington and Sitka, the capital of Alaska.

### Picture Telegraphy.

Many attempts, more or less successful, have been made to transmit pictures through a telegraph line, says the London Electrical Review. Elisha Gray and others have used the writing telegraph to make facsimile drawings at a distance, and Sczpeanik has devised an apparatus intended to enable us to actually see by telegraph, but this apparatus is complicated, and has not as yet been practically successful. Quite recently Herr Otto von Bronk has devised a simple and ingenious apparatus for printing at the receiver a photograph of any illuminated object placed in front of a lens at the transmitter. Herr von Bronk makes use of the wonderful susceptibility of steel wires to magnetic strain, utilized by Poulsen in his telegraphone. The image or the object is thrown by a photographic lens on a surface made up of a mosaic of selenium cells. Each cell is in circuit with one of a series of electromagnets arranged so as to produce transverse magnetic strains in a ring of steel wire, each strain being, of course, proportional to the intensity of light acting on its corresponding selenium cell. These strains are reproduced on a similar ring at the receiving station by a synchronous rotating arm, just as a telegraphone record would be copied on to another wire moving at the same speed. By reversing the original operation, the magnetic copy of the picture is re-translated into an optical one, a photographic negative being produced.

**A Telegraphic Wooing.**

Tom Walton was very much surprised at finding himself deeply in love with a girl whose name he did not even know. It happened in this way. Tom was a telegraph operator in the city, but lived in a small suburban town. As he sat in the train one morning on his way in to work he noticed among the passengers who boarded the train at one of the stations a beautiful girl who entered his car and took the seat directly in front of his. The morning paper had no further interest for Tom that day. All the way in to town he sat watching the girl in front of him. I shall not attempt to describe her. Tom says she is the most beautiful girl he ever saw. Of course he is prejudiced, but I must admit that I have only seen one girl who surpassed her. However, that has nothing to do with my story.

What impressed by friend even more than her beauty was her extreme modesty—not the timid, fluttering kind of modesty, which is so easily imitated by the heartless coquette, but the strong, self-reliant kind, which makes men keep their distance. She did not shrink from the admiring glances bestowed upon her by every man in the car; neither did she encourage them. She simply ignored them. A man who would attempt to flirt with such a girl must either be a fool or be gifted with unlimited assurance. Tom was neither; so he contented himself with admiring her in silence.

Week after week went on, and each day found poor Tom more and more deeply in love. The unconscious object of his admiration traveled on the same train every day. Sometimes she sat near him, and his eyes nearly devoured her wonderful beauty. At other times she sat at the other end of the car, where he could only catch occasional glimpses of her past the heads of his fellow passengers. One day he made a great discovery. Her name was Helen. He had heard a girl friend call her so. That night Tom sat up until 3 o'clock, writing love letters to Helen, and tearing them up as fast as he wrote them.

The next morning Helen again occupied the seat just in front of Tom. He sat gazing at her and building castles in the air. Presently his mind turned to the love letters he had been writing, and he began to frame a new one. As he mused, he idly fingered the window catch, which made a clicking sound similar to that of a telegraph instrument. Unconsciously he spelled out the words of the letter.

"Dearest Helen," ran the message, "I love you dearly. Say you will be mine and—" but he got no further, for suddenly the girl turned in her seat and looked him full in the face, her eyes blazing with indignation. Then she turned back and, seizing the catch on her window, clicked out the reply: "How dare you?"

Tom was completely dumbfounded. He felt like jumping out of the window and ending his miserable existence. He reflected, however, that such a rash proceeding would do him no good and might possibly wound the feelings of the young lady. Moreover, his first duty was to apologize. Of

course it would not do any good. She would never have anything to do with such an idiot as he had shown himself to be. Still he could not well leave matters as they were, so he again reached for the window catch.

"I beg your pardon," clicked the improvised key.

"Your insolence is unpardonable," was the reply.

"But let me explain. I did not know—"

"I don't care to hear your explanation."

Just then the train pulled into the station and the offended girl left the car without so much as looking back.

Tom went to his work with a heavy heart. He could think of nothing else all day but the stupid blunder which had destroyed all possibility of his ever winning the heart of the fair telegraph operator.

On the following morning he took an earlier train than usual in order to avoid meeting the fair Helen. But he had not reckoned on the fact that she might also wish to avoid him. This was the case, however, and Tom was somewhat startled when he saw her enter the car. There was only one seat vacant, and that was just in front of the unhappy young man. It seemed as though the fates had conspired to bring these two people together. The longer Tom pondered the matter, the more he saw the hand of destiny in this matter, and he decided to make one more effort to obtain forgiveness. Reaching for the window catch he sent the following message:

"I'm awfully sorry I offended you yesterday."

There was no answer, and the young man continued:

"I had no idea you understood me; I unconsciously telegraphed what was passing in my mind."

Still no answer.

"If you don't forgive me I shall be miserable for life."

At last the answer came:

"Please stop. You are attracting everybody's attention."

"Then let me come and tell you how sorry I am."

After a long pause the girl answered; "You may come."

Tom's heart leaped with joy as the window catch clicked out these words. He lost no time in accepting the invitation, and it was not long before he had persuaded her to forgive his foolish conduct of the day before.

After that he met her every day on the train, and their acquaintance soon ripened into sincere friendship on the part of the young lady. As for Tom, his feelings had long ago got beyond that stage. They talked of many things during their daily rides to the city, but for a long time they both avoided all mention of the episode which led to their acquaintance.

One day, however, Tom said: "Do you remember the message I sent you by the window catch?"

"Of course I do," replied his companion, looking out of the window to hide her blushes. "How could I forget such a piece of impertinence?"

"I know it was impertinent, and idiotic, and all

that," replied Tom. "But still, if it had not been for that, I should never have known you; so I am not at all sorry. Are you?"

"How can you ask such a question? Haven't I forgiven you long ago?"

"Yes, but forgiveness is not enough."

"Not enough!"

"No. I want something more. I—you know—well, the fact is, I—I meant every word of that message, Helen. Tell me, if I should repeat that message now, what would your answer be?"

Still looking out at the flying landscape, Helen placed her dainty finger on the window catch.

"Click, click, click, click." Tom's heart was in his throat as he heard the instrument click her answer, "Yes."—Isaac Anderson, in San Francisco Post.

#### Officials Graduated from the Ranks.

An examination of the "Biographical Directory of Railroad Officials," with especial reference to the course through which the officers named therein have attained their present positions, reveals the fact that the operating department appears to present the greatest number of successful careers. There are approximately 5,000 names mentioned in the directory. Under a classification which includes in the operating department, telegraph operators, clerks, brakemen and shop men, there appear to be over 1,700, or over one-fourth of the whole, who have entered the service in the department, and by far the largest portion of these, or over 600, began as telegraph operators. There are also now filling places at the heads of their department, 166 who began as brakemen, and 62 who were originally firemen; about 400 who began as mechanics in the shops, and over 200 who were laborers. The general office and accounting department furnished about 1,100, the engineering department 900, and the various clerical and subordinate positions in the traffic department about 850.

#### The International Association of Municipal Electricians.

An electrical engineer of international reputation, whose name is withheld for the present, has agreed to prepare a paper to be read at the sixth annual convention of the International Association of Municipal Electricians, to be held at Niagara Falls, N. Y., September 2, 3 and 4, 1901, on "The Advisability of Placing High and Low Potential Wires or Cables in the Same Series of Conduits or Through the Same Manholes." This is a live subject, and will present an interesting and timely topic.

Arrangements are nearly completed whereby the new Edison storage battery and the new Stowager storage battery, of Rochester, will be exhibited for the first time.

The New York party, which will number 100 or more, will leave New York on Sunday, September 1, at 7.30 P. M. F. C. Mason, superintendent of the police telegraph, Brooklyn, N. Y., has the matter in charge.

#### Organizers of the Old Time Telegraphers' Association.

Editor TELEGRAPH AGE:

As you are a friend to the forty-niners of the telegraph, will you please publish the addresses of those now living of the seventeen persons named herewith, who assisted in organizing the Old Time Telegraphers' Association at Cincinnati, O., September 7, 1880, as follows: G. E. Allen, E. C. Armstrong, Martin Barth, N. M. Booth, E. C. Bush, J. W. Chapin, W. G. Fuller, N. Hucker, F. C. Jones, T. H. Logan, W. H. Markle, J. Patrick, J. D. Reid, J. A. Townsend, M. J. Waldon, G. T. Williams and J. J. S. Wilson.

N. M. BOOTH.

Evansville, Ind., July 19.

[The only members now living of the original seventeen named above as organizers of the Old Time Telegraphers' Association are G. E. Allen, Utica, N. Y.; Martin Barth, Westmoreland, Tenn.; our correspondent, N. M. Booth, Evansville, Ind.; W. G. Fuller, Gallipolis, O.; Nathaniel Hucker, Buffalo, N. Y.; J. A. Townsend, Dunkirk, N. Y.; G. T. Williams, Cleveland, O.—Editor.]

#### New Code Language.

The International Telegraph Conference, to be held in London, England, next year, will doubtless prove to be of special importance to telegraph administrations and the public.

According to the list of "Propositions pour la Conference," issued by the Berne office, the British Government will propose a modification of Article IX of the regulations which prohibits "the employment of groups of letters having a secret meaning." It will also be submitted that the transmission of groups formed by vowels and consonants conveniently combined will be simpler than the words of the official vocabulary.

This will doubtless be found a step in the right direction if the two classes of letters are associated with two classes of signals of the international Morse alphabet, or otherwise systematically combined with one class or other of those signals in a preconcerted manner, as profusely illustrated in Mr. Nicolson's booklet, "Telegraphic Signals and International Code Vocabularies, Classification of Signals, Etc.," New York and Glasgow, 1897. We formerly offered this important work at a dollar; a few copies are left, which may be obtained at the same rate, and which will be sent on receipt of price to any address in the United States or Canada, all charges prepaid. Address J. B. Taltavall, TELEGRAPH AGE, 253 Broadway, New York.

FRENCH CABLES IN INDO-CHINA.—A Paris paper states that the French are laying a cable from Amoy to Thuanan, in Indo-China. Later they will lay another cable from Amoy to Vladivostock, which will enable the transmission of messages between France and Indo-China, by way of the Siberian and Danish lines, thus avoiding the British and German cables. It is the desire of the French government to establish telegraphic and cable service all over the world, under its own control, and free from the supervision of other governments.



## LETTERS FROM OUR AGENTS.

## To Our Correspondents.

While we are desirous to receive from our agents letters for publication respecting their various offices and of their personnel, for all efforts of this character are appreciated, we would earnestly request that such communications be confined strictly within the limits of the subject, and not so much space be devoted to hunting and fishing items and other extraneous matter, as is frequently the case. We wish to make the department of "Letters from our Agents" an attractive one, but if we were to publish all that comes to us in the shape of irrelevant matter, of no possible interest to the general reader, it would frequently require us to surrender a number of additional pages to contain it all. The current information of any office will, if carefully chronicled, furnish a welcome digest of news that will be read with pleasure and satisfaction by thousands, and this limit should be the legitimate contents of all letters. And we wish that our correspondents would avoid the too frequent habit, at all times a bad one, of abbreviating words in writing. This is a peculiarity among telegraphers, we know, but what may be plain to the writer, and for local interpretation, is usually a mystery to the editor, and is apt to lead to error in the printed statement.

## ST. LOUIS, MO., POSTAL.

Owing to the promotion of Mr. B. P. Hancock to a position in Chicago, who leaves many friends in St. Louis, the personnel of the St. Louis chiefs is now as follows: C. F. Bartlett, chief operator; T. J. Irwin, assistant chief operator; T. E. Bastable, traffic chief; G. C. Goodwin, assistant traffic chief; T. P. Wheeler, night chief operator; T. M. Skinner, night traffic chief; T. J. Neiderweiser, late night chief.

Miss Matilda Genevieve Seeger, of St. Louis Postal, and Mr. Patrick J. Shea, of the Cella Commission Co., of St. Louis, Mo., were married in Chicago, Ill., July 10.

Miss De Esta Conrad, manager of the St. Louis Cotton Exchange office, is spending a month in Ohio.

Miss Carrie Spencer, manager of the Wainwright Building office, is spending a week on the lakes.

Miss Clara Ellersieck is visiting relatives in the Ozarks; E. L. Dougherty is also in the same region.

Mr. T. P. Wheeler is visiting relatives in Walnut, Kas.

Mr. John Welch, of Nashville, Tenn., paid us a short visit.

## NEW ORLEANS, LA., WESTERN UNION.

Mr. J. Powers, late night operator at the Southern Pacific ferry landing office, resigned to accept the chief clerkship to J. K. Ridgely, division passenger agent of the Louisville & Nashville Railroad.

Mr. R. L. McKibbin, a well-known telegrapher, late city passenger agent of the Louisville & Nash-

ville Railroad, has resigned; also Mr. Walker, chief clerk to John Kilkeny, former division passenger agent.

Mr. Geo. Glynn has resigned from the check force, and accepted a position as operator with the Ocean Towboat Telegraph Co. Young Glynn has best wishes of his many friends.

Managers Cummings, of Jackson, Miss.; Lundy, of Ocean Springs, Miss., and McMurchy, of Baton Rouge, La., were recent visitors. Late arrivals: Messrs. J. T. Dearman, M. M. Lott, T. D. Ford, W. A. Relf.

Mr. S. W. Capers is on the extra list.

Mr. O. M. Donovan is now manager at Hattiesburg, Miss.

Mr. Louis Tognoni has resigned from the clerical force to accept the managership at Poplarville, Miss.

## CHICAGO, ILL., WESTERN UNION.

Louis M. Saddler, for the past thirteen years manager at Kankakee, Ill., died after a short illness with kidney trouble, July 5. Mr. Saddler was well known in the Chicago office, and his many friends mourn his loss. He was born at Loraine, Germany, and was 34 years of age.

Mr. A. R. Jones, formerly operator at Kankakee, is acting as temporary manager.

L. B. Allen, for the past eight years manager at Aurora, Ill., died suddenly on June 26. A widow and one child survive him. His position has been filled by Mr. McDermott.

Burglars made an attempt to despoil Newt Crittenton of some of his personal property the other night, but he courageously lighted a match, whereupon the intruders disappeared.

A death claim of \$1,000 was paid promptly to the widow of John P. Jamieson, deceased, on June 22, by Ohm Court No. 673, C. O. F., National Union.

Mr. Ray F. Finley, late of the Western Union force of Kansas City, Mo., made us a call on July 16, while on his way to the new position he has accepted with the Long Distance Telephone Co., at Maumee, O.

Mr. A. J. McGrath and wife were rusticing recently in Minnesota.

Mr. Copeland has gone to Denver, Col., with his family for an outing.

Mr. Thomas Hanley and Miss Bertha Armitage were married at Montreal, July 9. Congratulations and good wishes are expressed by all.

## WACO, TEX., WESTERN UNION.

After two years of arduous campaigning in the Philippine Islands as commander of Company F, Fortieth Infantry, U. S. Volunteers, Captain Wm. McK. Lambdin, of Waco, Tex., is at home, and is receiving the congratulations of his many friends.

Captain Lambdin returns with a military record of the very best, his discharge reciting thirteen engagements in different parts of the archipelago, one of which was a bloody hand to hand conflict with an immensely superior force of the enemy, and which probably stands without a counterpart in the annals of the insular hostilities, Captain Lambdin losing seven men in a less number of minutes, he himself,

revolver in hand, assisting in repelling the Filipino attack. In this engagement the enemy's force was almost annihilated.

As demonstrative of the courage and determination of Captain Lambdin and his men, it is a noticeable fact that his company lost nine killed and fifteen wounded out of a numerical strength of 106 men, a larger percentage of loss than was sustained by any other company of the same regiment.

The fraternity will remember Captain Lambdin as a crackerjack operator, at one time with the Western Union at Waco, Tex., and various other points, and later as manager for the Postal at the same place, and will be proud of his military achievements.

Captain Lambdin was frequently given favorable mention in the reports of his departmental commander, and the skill with which he maneuvered his men attracted the attention of General Shafter at the Presidio in San Francisco, therefore it is very probable that he will soon bear a commission in the permanent military establishment.

The personnel of this office is as follows: H. L. Henderson, manager; S. M. Renick, chief operator; W. Gaines Sparks, night chief operator; Messrs. W. D. Lessing and J. M. Clement, day operators; Mrs. E. L. Boutz, split trick. Clerks—Mr. A. B. Kelly, Misses Nellie Hackett and Birdie McCorkle.

The American District Telegraph service has recently been installed here, and is keeping a force of five messenger boys busy.

Mrs. E. L. Boutz has been ill for some weeks with a malarial attack, but is now convalescent, and expects to be back to her table at an early date.

Mr. Walter Sparks is doing the telegraphing on the Logan wire, with Mr. C. E. Stetler filling the same position for the Christi people, while at the pool room, Mr. Fred Boutz is looking after the race wire.

Mr. A. E. Gehrig is the efficient lineman and electrician for this office.

Mr. J. Render Read, an operator from Alabama, is visiting relatives here.

#### PHILADELPHIA, PA., POSTAL.

The great increase in the market business during the early morning hours has caused a number of additions to be made on the early trick, and the creation of an entirely new trick, namely, the all-night trick, from 12 to 8 A. M. Mr. Horace Holtzinger has been assigned to duty for these hours. Mr. Samuel Higo moved from 6 A. M. to 5.30 A. M., and Jay A. Thomas added to the 6 A. M. force. Other additions were made at 6.30 and 7 A. M.

Chief Operator C. A. Stimpson and Wire Chief Miles Dunn reported several mornings at 6 o'clock in order to personally acquaint themselves with the condition of wires and the movement of business in the new Delaware, Maryland and Virginia district. New wires are being strung, which will greatly facilitate matters.

It looks as though vacation privileges will be at a premium this summer. The regular force is so thinned out that night men and outsiders have been ordered on daily. Good men are in demand, and the force earning lots of compulsory extra. Quite

a number have been compelled to lay off on account of illness, among them Wire Chief Frank Holtzinger, H. P. Ruffee, Jacob Lemish and Philip Sherwood.

Arrivals: Messrs. Wm. M. Anderson, from a branch office; L. S. Miller, from the Western Union; Miss M. Atkinson, from the Western Union, Germantown, office; E. H. Baker, from the Postal, Germantown, office; H. A. Crosson, from the American District Telegraph; L. N. Merrick, Pittsburg, Pa.; Wm. S. Mecke, Harrisburg, Pa.; M. L. Schwinger, New York city; Jas. F. Houghton and Harry Tracy, from the Philadelphia & Reading Railway; Richard Sterling, from the Western Union; T. F. Hannigan and E. J. Smith.

Much sympathy is felt for our friend Bud. Gagen, at a broker's office, who almost immediately after being called home on account of his mother's illness was again sent for on account of the illness of his young son, reaching whom only to find him dead.

Mr. H. Nauer, formerly at the newspaper overflow office on South Eighth street, is now with a broker.

The night force are being worked to their utmost capacity; business is good.

#### BOSTON, MASS., POSTAL.

Mr. Frank C. Frazee, of the Globe force, was a member of the class of 1901 at the Boston University Law School, and received his degree a few weeks ago. Mr. Frazee will resign his position soon to practice law in Baldwinsville, N. Y., his home.

Miss Hattie Cameron, who formerly worked the Broad street wire, was recently married to Mr. Clarke.

Senator J. B. Clancy has returned to his position as manager at the Chamber of Commerce, the State Senate having adjourned. Mr. J. D. McDonald, who was acting manager during Mr. Clancy's absence, has returned to the main office.

Mr. H. J. Finn has been transferred to the 3 A. M. night trick, working the Chicago wire.

Assistant Night Chief J. A. Coughlin has a son. Mr. N. H. Tracey has returned to his duties at the Globe, after a month spent with the Harvard crew at Gales Ferry, Conn.

Mr. J. M. Kenney has been appointed operator at Clark's Hotel, vice T. F. Carey, resigned.

Mr. William Manning has been assigned to the Court Square office, vice James Keough, transferred to the main office.

Resigned: Messrs. C. H. Labonta, A. B. Palmer, W. E. Dickinson, Thos. F. Carey.

#### ANACONDA, MONT., WESTERN UNION.

The personnel of this office is as follows: James Gibbs Davies, manager; Mrs. James Gibbs Davies, bookkeeper; A. A. Bright, night operator for Western Union Telegraph Company, at Standard office; Mr. Edward C. Danforth handling The Associated Press for the Standard; Fred Davidson, messenger.

The American District Telegraph Company will install their service here within the next two or three months.

Mr. Charles Chapman looks out for the interests

of the Western Union Telegraph Company in our branch office at the Anaconda Copper Mining Company's office.

Mr. J. C. Derks, former operator at the Standard office, has recently been promoted to the telegraph editorship on that paper.

#### PHILADELPHIA, PA., WESTERN UNION.

Mr. J. D. King, a well known operator of Cape Charles, Va., was on July 15 appointed chief train dispatcher of the New York, Philadelphia and Norfolk railroad. The appointment is a gratifying one to Mr. King's hosts of friends, and especially so to the train dispatchers and operators on the division, by whom he is well liked. Merit and faithfulness is sure to have its reward and Mr. King's elevation to this important position is the natural outcome of the same. We heartily congratulate and wish him still further prosperity and honor.

Messrs. Pennypacker and Brenckman were sent to Camp Egbert at Perkasio, Pa., to handle press matter, of which there was an abundance.

Western Union messenger No. 48, whose name is Joseph McCann, is a boy of sterling character and honesty. He recently found a wallet containing \$850. He discovered the owner, to whom he returned the pocketbook and contents intact. He was rewarded with a sum of money and a ton of coal.

Some years ago, printer C. B. Wood took out an endowment policy while in England. After leaving that country he neglected the matter, the policy apparently lapsed and the transaction was entirely obliterated from his mind until recently, when a letter from the London company apprised him of the fact that they held for him, subject to the surrender of the policy, quite a sum of money which had accumulated on what premiums he had paid before he left England. Mr. Wood put himself immediately in communication with the Insurance Co., and is now in daily anticipation of a check.

Owing to the unusually heavy business a good many of the day and night men are doing double work.

In consequence of the heavy night work at the switchboard Messrs. Webb and Potteiger have been given an assistant in the person of W. C. Shugar.

#### CLEVELAND, O., WESTERN UNION.

Mr. F. C. Hackett, formerly chief operator at Toledo, has been transferred to same position at Cleveland, vice L. G. Seibel, who has resigned to take charge of the electrical department.

A number of new names appear on the roll. Among them are Messrs. Sprence from Houghton, Mich.; L. A. Stockwell from the Postal, Cleveland, and R. B. Carney and C. L. Chapman.

Shappart Lindsley and Miss Ryan are on vacation.

#### MONTREAL, QUE., CANADIAN PACIFIC.

We are now in the midst of the usual summer rush; every wire is taxed to its utmost capacity, and the "Wolves" are happy.

Some of the men and many of the ladies are sub-

stitute hunting, but their task does not appear to be an easy one, as there is a scarcity of operators in this vicinity at present. The continuous hot spell makes us all feel like taking a vacation.

Superintendent A. W. Barber, of Toronto, who has been on a visit here, has left for the East.

Mr. Walter Barclay is representing this company at Beaconsfield, and Mr. James Quelch is doing likewise at Dorval, during the yacht races.

Mr. W. J. Morrisette, manager at Halifax, N. S., is here on a visit.

Dr. Stirling Morrison was a recent visitor.

Master Geo. Rivet has accepted a position as junior clerk with the Canadian Pacific Railway ticket office, St. James street.

Miss Nellie Massey is on the sick list.

Among those who have recently gone over to the Great North Western are Messrs. H. Keating, Thomas Massey and D. Dungan.

**Arrivals:** Messrs. J. P. Downey, W. J. McLaughlin and J. Mathews.

**Resigned:** Messrs. O. M. Young and E. C. Hartford. The former has accepted a position with a Quebec broker, and the latter has left for Toronto. Mr. Arthur Hutchison has also left for Ottawa.

The closing of Rattes' office has put Mr. W. J. Elwell out of business.

Mr. Harry Forsythe, of the superintendent's office, contemplates taking a trip to Buffalo.

#### NEW YORK, WESTERN UNION.

Mr. David R. Downer, a former assistant manager of this office, was a recent caller.

Mr. John M. Moffatt, at one time a chief operator, and secretary of the New York Telegraphers' Aid Society, is seriously ill at his home, Dunmore, Pa.

Mr. John Rathbone has fully recovered from trouble with his eyes and has returned to work.

Mr. Charles S. Pike, of this office, has charge of the New Jersey State Camp office at Sea Girt, N. J., during the encampment of the militia.

Mr. F. O. Nourse is acting as assistant manager

#### How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by his firm.

WEST & TRUAX, Wholesale Druggists, Toledo, O.  
WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75c. per bottle. Sold by all Druggists. Testimonials free.

Hall's Family Pills are the best.



during the absence of Mr. Thomas M. Brennan, who is on his vacation.

Messrs. J. A. Bates, W. J. Evans, P. J. Purfield, S. V. Richart, H. M. Herrington and C. E. Loops were sent to Pittsfield, Mass., to help out on the report of the noted Fosburgh murder case.

On vacation: Miss M. C. Donovan, E. F. Welsh, C. C. Lever, L. W. Sitzenstatter, H. M. Stiles, A. G. Trulan, T. W. Donovan, T. Girault, J. F. Moran.

Resignations: M. J. Welsh, J. K. Thrower, J. P. Rohling, A. M. Levenson, B. B. Stoddard, L. E. Westrope, F. W. Kinne, G. W. Ivory.

Appointed to waiting list: G. F. Mass, J. W. Morris, W. W. Welsh, J. L. McHale, R. J. Whitford, E. F. Stevens, H. H. Brannan, H. Lieber, J. M. Quigley, A. W. Nelson, W. R. Klitz, C. A. Beale, George Bain, M. L. Snyder, Ira Baker.

John M. Casey, aged 24 years, who for some years worked as an operator at 195 Broadway, New York, died on July 18 at Denver, Col., whither he went for the benefit of his health some months ago.

John J. Cleary, one of the most popular young operators in the Commercial News Department, died in New York on July 21.

Night Manager James C. Robinson accompanied his wife recently to Newport, R. I., his old home, where she will remain for some time for the benefit of her health.

Mr. James Dunn, formerly of this office, left for Europe July 21.

All popular music at less than half price. "Utopian Waltzes," "Whirlwind March," "Ben Hur Chariot Race," "Belle of Manhattan" March and Two-Step, "When You Were Sweet Sixteen," "My Old Virginia Home," "Left On the Battlefield," "Dolly Gray," "The Sweetheart That I Loved In Boyhood Days," "Spider and Fly," 18 cents each. "Palms," "Popular Gems," "Lang's Flower Song," "Calvary," "Rusticana," 10 cents each. Pianos—all prices—sold \$1.00 per week. B. L. Brannan, 195 Broadway, New York. (Adv.)  
NEW YORK, POSTAL.

An astonishing record was made recently on the Philadelphia bonus wire by A. E. Whitaker at the New York end and W. J. Furman, receiving at the Philadelphia end. Mr. Whitaker sent 102 messages in one hour, from 10 A. M. to 11 A. M. He feels confident he can beat this record by using a Twentieth Century key.

Messrs. Charles Obst, assistant traffic chief south and west; B. F. Wilson and Edward Hodnett have returned from their vacations.

Mr. Charles McCarthy, all night chief; Miss M. Crawford and Messrs. F. W. Wright and W. W. Albright are on vacation.

Mr. O. H. Davidson, late of the southern division, has been appointed to a responsible position in the U. S. Internal Revenue Department, New York city.

Messrs. M. E. McKittrick, F. Gariepy, Theo. Taylor and Geo. Baumeister have been transferred from the night to the day force; John Paul transferred to the Herald night force.

Arrivals: C. W. Brownell, Chas. Agnetti, M. J. Moran, J. M. Daly, N. E. Popp, W. J. Finn, M. B.

Dudley, J. L. Kopler, Wm. Howard, H. Waldron, J. J. O'Donnell, P. O. Purcell, E. J. Moore.

NEWPORT, R. I., WESTERN UNION.

Telegraphically speaking, this is the greatest season we have seen in many years, and some believe that July was a record breaker. Certain it is the volume of business was very heavy; in fact, there was an August business in July.

The trial races between the Constitution, Columbia and Independence made between 450,000 and 500,000 words of press, necessitating reinforcements, which came from Boston in the persons of the much-liked Thomas Devine, whom all the reporters know, and the good old soul Patsey Flaherty, who has been here before in the same capacity, and is always persona grata. Flaherty was assigned to the Boston Herald wire at Brenton's Reef during the day time, with Devine on the New York Sun and Mr. M. W. Handy on the Publishers' Press. The manager, Mr. A. Waadle, had to give his attention to matters too numerous to mention, but they were each and every one handled with eminent success. For an office of this size to suddenly swell out into such immense proportions as does the Newport office at this season of the year is no easy matter for the manager to handle, but it is evident Mr. Waadle is equal to any occasion. Night manager Rowe had quite a little picnic to keep the whole push going, and that without much delay.

Those who came in from the broker offices about town and performed good service were O. E. Howard, Harvey J. Lockrow, Edward Devine, D. E. Harrington and Joseph Riley.

The regular New York Yacht Club races for the Astor Cup were sailed last week, and so take it altogether it is a very busy season at Newport; far ahead of anything ever known before in Newport for the month of July.

Mr. and Mrs. Geo. W. Brownson, who are on a visit through the East, called recently upon Manager Waadle. Mr. Brownson is chief operator at the Western Union in Kansas City.

INDIANAPOLIS, IND., WESTERN UNION.

The heavy increase in business between Indianapolis and Terre Haute office has necessitated the installation of a quadruplex between those two offices. For this purpose Mr. M. S. Allen, quad. chief of this office, went to Terre Haute July 17.

Mr. Jerry Hogan, an old employee of this office, but now of Denver, Col., was called here by the death of his mother, July 23.

The Telegraphers' Baseball Club of Cincinnati, accompanied by several other operators, were the guests of the Indianapolis telegraphers Sunday, July 21.

They were met at the train by quite a number of the home boys, who had a chartered street car awaiting their arrival to take them over the city. At noon all assembled at Banquet Hall, Fairbanks Park, where dinner for seventy-five was served. Two hours were spent in social session, during which many of the boys added to the enjoyment of the affair by singing, speech making, etc. At

2.30 all started for Capitol City Park for the ball game. The players were: Cincinnati—Creighton, Durfus, Washington, Duffy, Gorman, Chenel, Ewald, Pons, Bell. Indianapolis—Kurz, Banty, Finan, Bannwerth, Laskey, Hamilton, Rapp, Barrett, Adams. The visitors won by a score of 13 to 11. The mercury registered 105 and how the boys played ball would have pleased any enthusiast to have witnessed the game. This entitles Cincinnati to the championship series.

Among others who were among the visitors were: W. Campbell, T. Connelly, John Duffy, A. Egan, W. J. Guynan, Augustus Renner, John Stangle, Harry Stangle. The latter acted as official photographer, and took pictures of the crowd at Fairbanks.

The Indianapolis boys, under supervision of Fred Kurz, spared nothing to add to the amusement of the visitors, and we hope to again have the pleasure of duplicating the occasion.

From all reports the visitors seem to have been well pleased in the manner they were taken care of. Indianapolis baseball team stands ready to hear from other cities who are seeking games.

#### Fourth of July on the Thames.

The fourth annual outing of the London, England, staff of the Commercial Cable Company took place on the Fourth of July.

A party numbering about forty left London by a special train for Reading, about 35 miles distant, and there boarded a steam launch for a trip up the River Thames. The weather was beautiful and a delightful time was spent. There was luncheon and music on board. The party landed for a short time in the beautiful woods near Pangbourne, for which the Thames is celebrated.

A formal dinner was served at the Caversham Hotel and speeches were made, and although the American ambassador, Mr. Choate, was not present, the assembly was both delighted and amused. Several members of the staff sang songs, many of their own composition, and one of them mystified the party by sleight-of-hand tricks of unusual cleverness.

It was the second day of the Henley regatta, and numerous canoes, punts, houseboats and other river craft were passed, and from all of them the American flags, which profusely decorated the Commercial launch, were heartily cheered.

The whole affair was a great success, due to the energy and excellent arrangements of Messrs. E. G. Phillips and W. M. Kent.

OLD TIME TELEGRAPHERS' ASSOCIATION.—Mr. John Brant, of New York, secretary of the Old Time Telegraphers' Association, has recently mailed to all of the members printed copies of the annual proceedings of the meetings of 1880, 1882, 1883 and 1884. On account of the death of President Garfield there was no meeting in 1881. The programme of the Montreal meeting, which will be held September 11, 12 and 13; will be issued within a week.

#### Train Dispatchers' Convention.

The fourteenth annual convention of the Train Dispatchers' Association of America was held in San Francisco on June 11, fifty delegates from all parts of America being present. Fifty new members were elected. The present membership is 629.

The secretary's report announced that the debt of the association had been paid in full during the year. In making this announcement he took occasion to give a historical résumé of the causes that led to the incurring of this debt and of the policy followed by the association since, and offered the following resolution, reaffirming that policy:

"Whereas, The Train Dispatchers' Association of America is organized for the purpose of promoting harmony and fraternal feeling among its members, and has for its supreme aim the increase of efficiency as train dispatchers of its individual members; and

"Whereas, The experience of the past has taught that its success in carrying out these objects depends upon a rigid exclusion from its discussions at annual conventions or elsewhere of questions of hours worked, wages received by or conditions of service required of its members or train dispatchers in general on the various lines of railway by which they are employed; now, therefore

Be it Resolved, That the Train Dispatchers' Association of America, in convention assembled at San Francisco in this year of 1901, reaffirms its steadfast purpose to adhere to the policy of the past seven years, under which it has attained its present measure of success, and directs that all members hereafter accepted be required to conform thereto as a necessary condition of membership, and the Executive Committee is hereby instructed to prepare and submit to the next convention a constitutional amendment embodying and reaffirming this principle of action as a fundamental law of this association."

John P. Mann, of the Houston and Texas Central Railway, Ennis, Tex., was elected president; Fred. S. James, of the Illinois Central Railway, Cherokee, Iowa, vice-president; John F. Mackie, of Chicago, secretary-treasurer-editor.

The next annual meeting will be held at Pittsburg, Pa., on the third Tuesday in June, 1902.

EDISON STORAGE BATTERY NOW AT THE PAN-AMERICAN.—The new Edison storage battery arrived at the Pan-American Saturday, July 20. The exhibit consists of a single cell, and also sample plates and oxide cases, which fit into the plates. The cell weighs 5½ pounds, and is rated to give 100 watt-hours. It is contained in a metallic case, and has eight plates. The cell occupies a place in the Edison Manufacturing Company's exhibit, and attracts much attention from electrical men.

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### Why a Telegraph Operator Declined.

John B. Van Every, vice-president and auditor of the Western Union Telegraph Company, has a favorite story of the early history of the company. A Rochester clothing manufacturer received a contract for making the uniforms for the telegraph operators along the line of the New York Central Railroad. In order to measure the operators for the uniforms he sent telegrams along the line asking them to meet him on the station platforms. He sent this telegram to the operator at Clyde, N. Y.:

"Meet me on arrival of the 2.15 P. M. train; wear nothing but shirt and trousers."

At the appointed time he reached the Clyde station and inquired for the operator. He saw a young lady looking wistfully about her. She said in answer to his inquiry:

"I am the telegraph operator, and am here in response to your summons; but I decline to comply with your instructions as to apparel."

### The Morse Club.

Mr. Gardner Irving, manager of the Commercial News Department, 195 Broadway, New York, and president of the Morse Club, has issued a circular to the members in which he urges them to "think of the importance Professor Morse's invention has been to the world; of the employment it gives to you, to me, and to thousands of others; and of the event we aim to commemorate—The First Message—and then say if these things are not worthy of our gathering once a year, May 24, in a grand telegraphic social event."

The officers of this club are as follows: Gardner Irving, president; M. F. O'Brien, vice-president; M. F. Gaffney, treasurer; M. H. Kerner, secretary; W. A. Van Orden, historian. Governing Committee—F. W. Jones, W. C. Burton.

The initiation fee is 50 cents, the annual dues are the same amount, and lady telegraphers are eligible to membership.

From the telegraph ranks have been supplied a majority of the railroad officials. It is also a notable fact that the same ranks are being constantly drawn upon to fill positions on newspapers in all sections of the country. It will be interesting to note also that one of America's brightest telegraphers, who was at one time agent for this paper in Chicago, is now managing editor of a leading London, England, daily newspaper.

The P. B. Delany system of automatic telegraphy is now being tested on the Pennsylvania Railroad telegraph line under the direction of Charles M. Sheaffer, the new superintendent of telegraph of that road.

### An Old Telegraph Line.

On July 26 the annual meeting of the Boston and Vermont Telegraph Company was held at Boston, Mass. The original line of this company running through Vermont is still in place. It was erected in 1848 and it has, therefore, done telegraph service for fifty-three years. The wire is of English manufacture, and it did not show any deterioration for the first forty years. It has, however, during the past thirteen years become impaired to a considerable extent, caused by the substituting in that time of coal instead of wood as fuel on the locomotives. It is a notable fact that the vice-president of this company, Mr. Charles A. Tinker, now general superintendent of the Western Union Telegraph Company, New York, learned to telegraph on this line in the early fifties. This old line is likely to do telegraph service for many more years to come.

CHINESE TELEGRAPHS.—General Chang Sun, at Kirin, has requested the Chinese plenipotentiaries to ask the Russian Minister to permit the telegraph in Manchuria to be transferred to the Chinese. The German military telegraph line from Peking to Paoting-fu has been purchased by the Chinese, but there are not enough native operators, and telegrams are still sent in German.

The Colorado Fuel and Iron Company, with headquarters at Denver, Col., is constructing an independent telegraph line, said to be over a thousand miles long, for the purpose of connecting all branches of the company's service.

On railroads that are becoming congested with trains the telegraph is declared to be too slow a medium to handle the same, and that the telephone will take its place for this purpose in the near future.

### Business Notice.

With a view of further introducing their machine in the business colleges and commercial schools of the country, the Smith Premier Typewriter Company, of Syracuse, N. Y., have issued a special catalogue showing a number of cuts suggestively illustrative of their machine, which cuts the company offers free of charge for purposes of use in the school catalogues.

Operators interested in the method of treatment of writers' cramp will find very complete information in the little booklet entitled "The Cure of Telegraphers' Paralysis," published by TELEGRAPH AGE, New York. Price 50 cents.

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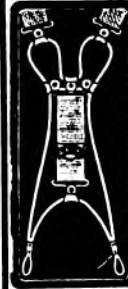
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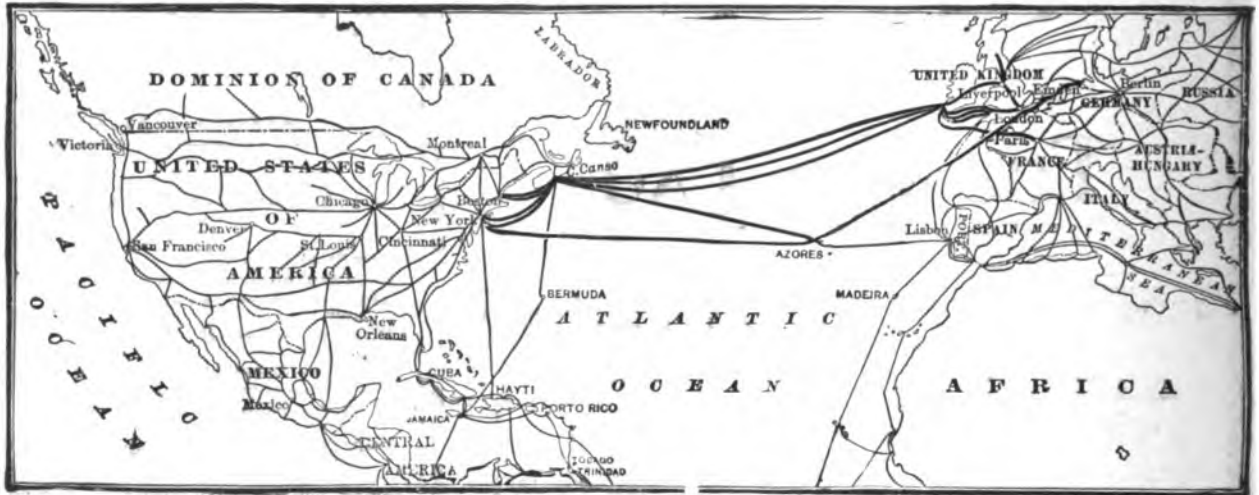


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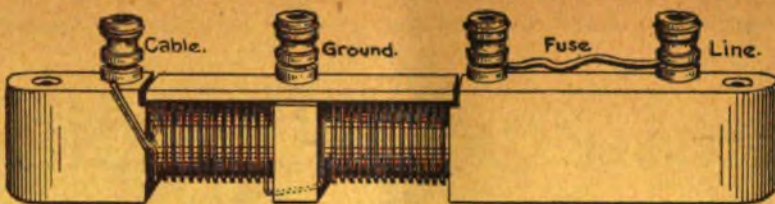


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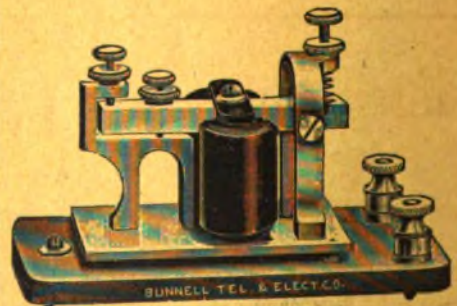


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# THE TELEGRAPH AGE.

No. 16.

NEW YORK, AUGUST 16, 1901.

VOL. XXIV.

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## SOME POINTS ON ELECTRICITY.

BY WILLIS H. JONES.

[In the next issue of this journal Mr. Willis H. Jones will begin a series of articles showing the complete details of equipping a modern telegraph office. Beginning with the proper selection of the dynamos, he will carry the reader step by step from the cellar to the operating department; thence through the labyrinth of house wires underneath the floor to the various apparatus; state the size of wires to be used for the main and sub-leads, and last but not least, give a full and accurate reason for each move.

The series will be a complete handbook for any one contemplating the instalment of a new office or making alterations in an old one. The value of these important articles will be such as to interest a wide circle of readers, and those who desire to follow them in their consecutive order should send in their subscriptions at once.]

Since the announcement was made in this journal that the Western Union Telegraph Company had bought the Roberson quadruplex from the inventor and would soon install that system at various points, numerous requests have been received for a description of the manner in which it is balanced.

It is hardly necessary to remind the reader that in order to get the greatest efficiency out of any device one must first understand the same thoroughly, hence those who are entirely deficient in this knowledge should secure the March 16 and April 1 copies of this journal, which describe the Roberson system

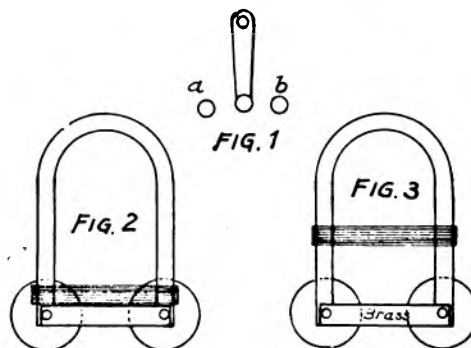
thoroughly, as companions for the following description as to handling it.

In the first place the reader should understand that although the system employs an alternating current for its operation, it has been found that a much more satisfactory line balance may be obtained by substituting a direct current for that purpose. The reason for doing this is that the "static," due to the rapid alterations, magnetize the main line coils of the relays by its separate influence, and which, if equated for by the adjustment of the rheostat alone, would give a false line balance.

In practice a three-point switch is employed, as shown in Fig. 1, to the disks *A* and *B*, of which the alternating and the direct currents are respectively connected.

### HOW TO BALANCE.

1—Open the keys on both sides of the quadruplex at both the home and the distant station, leaving



lever *L* on its normal disk *A*. This "grounds" the circuit at each end of the wire.

2—Now, consider the transmitter and the relay on the *A* side, an ordinary Stearns duplex, and proceed in the identical manner followed when balancing that device, viz., turn down the retractile spring of the relay until the latter "buzzes" from the feeble influence of line induction.

3—Turn lever *L* to disk *B*, thus throwing a direct current to the line, but do not close your keys yet.

4—Adjust the rheostat in the usual way until the relay stands "open" and free of magnetism. This completes the line balance.

5—Now turn on the alternating current by moving lever *L* back to *A*, and close one key.

It will usually follow that the relay will then "close," owing to the magnetism developed by the unequated "static" discharge of the line. This is eliminated entirely by the adjustment of the condensers and retardation coils, but seems to be the most perplexing part of the performance, as a slight change in the position of the plug in the retardation coil frequently affects the relay almost as much as

an alteration in the capacity of the condenser itself. Nevertheless it is not a difficult task, and with a little practice one soon learns to distinguish between the two effects, and can effect a true balance as quickly and with as little trouble as is experienced with the old standard apparatus.

The relay on the *B* side, after having once been properly adjusted, seldom requires readjustment when new balances are taken, unless the change is quite marked.

The relay on the *A* side is usually the most troublesome of the two, on account of it being necessarily thrown out of adjustment during each process of balancing. The readjustment of the retractile spring and magnet to the incoming signals obviously requires more or less experimenting before the proper tension is obtained.

#### A FEW HINTS.

The iron crossbar slide at the base of the steel horseshoe is for the purpose of regulating the strength of the permanent magnetism therein to suit the strength of the incoming current. In dry weather the normal position of the slide is usually close against the brass crossbar, which holds the relay cores rigidly together as a helix, as shown in Fig. 2.

In very wet or foggy weather, however, it has been found best to raise the slide somewhat towards the arch, as seen in Fig. 3. The latter position alters the strength of the permanent magnetism at the poles and makes it more suitable to the incoming current. The proper position at such times can only be ascertained by actual trial. When the small magnets in the local circuits have been properly adjusted they seldom require further attention. When artificial resistance is required in any part of the circuit it should be non-inductive, as the presence of a coil of wire, where an alternating current is employed, greatly increases the impedance and lessens the volume of the current. This explains the presence of the various carbon resistance rods used in setting up the Roberson quadruplex apparatus.

The strength of the current can be measured with an ammeter in the usual way.

To measure the home current ask the distant office to open both keys. This grounds the circuit at that point. Then close one of the home keys and insert the meter in the wedge at the main line switchboard and note the deflection of the needle. For the opposite pole close the other key and open the first and proceed as before.

To measure the distant current the process is the same with the exception that the distant station must close first one and then the other key, as requested, while both home keys remain open while measuring. The proper strength of such currents should be about 25 or 30 milliamperes, the same as used for polar duplexes.

The contact points of the polechangers, or transmitters, as they are really called, need not be adjusted so close together as is required in the standard quadruplex apparatus; in fact, better results are obtained when they are given a reasonable amount of play.

For repeating sounders, what might be called "cushion" sounders should invariably be used, as

they seem to take up the vibrations due to an alternating current and render the signals perfectly clear and distinct. The "cushion" apparatus mentioned is merely a repeating sounder, the bar lever of which engages two small levers adjusted by retractile springs, which prevent the usual jar or rebound which occurs when a solid bar strikes a contact point.

The idea, or rather the application of the idea to the Roberson quadruplex was suggested by Mr. W. E. Athearn, of 105 Broadway, New York.

#### Personal Mention.

Captain Willard L. Candee, general manager of the Okonite Wire and Cable Co., New York, has returned from Europe.

Mr. A. R. Brewer, secretary of the Western Union Telegraph Co., New York, is absent from his office on a well-earned vacation.

Gen. Thomas T. Eckert, president of the Western Union Telegraph Company, has been elected a director of the Union Pacific road.

Mr. Francis W. Jones, electrical engineer of the Postal Telegraph-Cable Co., New York, has gone to San Francisco on business connected with his department.

Mr. Nikola Tesla, the noted inventor, has recently purchased a large tract of land on Long Island on the Sound shore, near Port Jefferson, where he proposes to erect extensive electrical laboratories and experimental shops.

#### Resignations and Appointments.

Mr. A. B. Forres, chief operator of the Western Union Telegraph Company, at Beaumont, Tex., has resigned to enter other business.

Mr. H. H. Griffin, of Pittsburg, has been appointed manager of the Western Union office at Parkersburg, W. Va., vice D. R. Cook, resigned, to go to Chicago.

Mr. A. M. Causey has been appointed manager of the Western Union Telegraph Company, at Bowling Green, Ky., vice J. K. Woodruff, resigned, to go with the telephone company, at Nashville, Tenn. Mr. Causey was manager of the Postal interests at the same point.

#### Obituary.

Edgar Snyder, an old-time telegrapher, died July 31 at Woodstock, N. Y., aged 64 years.

Clarence A. Cary, an operator and train dispatcher at Jackson, Mich., in the seventies, died on August 2 at Norwich, N. Y., where he had been engaged in outside business for some years past.

W. H. Johnson, an old-time telegrapher and a charter member of the Old Time Telegraphers' Association at Louisville, Ky., died on July 28. Mr. Johnson claimed to be the inventor of the switchboard as now used in all telegraph offices. He was born in 1834 at Williamstown, Mass.

**Miscellaneous Items.**

The Postal-Telegraph Company, of Texas, has opened an office at Brenham, Tex., with Mrs. L. M. Miles as manager.

Mr. W. H. Reese, manager of the Postal Telegraph-Cable Company, at Jennings, La., has been transferred in the same capacity to Crowley, La.

Mr. George F. Fagan, of the general manager's office of the Postal Telegraph-Cable Company, New York, is in Michigan, enjoying his vacation.

Mr. W. Branch Wainwright, manager at Seaford, Del., writes: "Inclosed find \$1.50 for TELEGRAPH AGE for another year. I need the paper in my business and find it very useful to me."

Mr. Michael J. Kenna, of the race bureau of the Western Union Telegraph Company, together with his brother, Mr. J. A. Kenna, is spending a brief vacation at his old home in Concord, N. H.

Mr. Kirby L. Smith, manager, Salisbury, Md., in remitting to cover his yearly subscription, states that he is glad to be enrolled among the subscribers to TELEGRAPH AGE, and that he finds the paper of great benefit to him.

Mr. Frank N. Dowler, at one time prominent in telegraph circles, being manager of the American Union Company, at Toledo, O., is now connected with the freight department of the Delaware and Lackawanna Railroad in New York city.

Mr. Thomas F. Carroll, a well-known New York telegraph operator, on August 9, saved two companions from drowning near Atlantic City, N. J. The boat in which the three men were sailing, capsized, and Mr. Carroll, being an expert swimmer, held the heads of his companions above water until assistance reached them.

Mr. W. I. Capen, general superintendent of construction, Postal Telegraph-Cable Company, Chicago, Ill., in renewing his subscription for another year writes: "It is with pleasure that I inclose my check for another year's subscription to the AGE. If the price were set by the value of the paper I should still be greatly in your debt."

W. L. Mercereau, superintendent of the Pere Marquette Railroad Company, announces that his company will in the near future install wireless telegraphy between Manitowoc, Wis., and Ludington, Mich., over fifty-six miles of open water, across Lake Michigan. Later the Pere Marquette company expects to equip all its lake steamers with the system.

**New York Visitors.**

Mr. Morris W. Mead, superintendent of the Bureau of Electricity, Pittsburg, Pa.

Mr. E. J. Nally, general superintendent, Postal Telegraph-Cable Company, Chicago, Ill.

Mr. W. F. Williams, superintendent of telegraph of the Seaboard Air Line, Portsmouth, Va.

Mr. J. W. Kates, general superintendent of the Postal Telegraph-Cable Co., Richmond, Va.

Mr. C. C. Adams, superintendent of the Postal Telegraph-Cable Company, Philadelphia, Pa.

Mr. W. J. Camp, superintendent of the Canadian Pacific Telegraph Company, Montreal, Quebec.

Col. J. R. McIntosh, general counsellor of the Postal Telegraph-Cable Company, Richmond, Va.

Mr. H. A. Tuttle, general manager of the North American Telegraph Company, Minneapolis, Minn.

Mr. James Kent, general manager of the Canadian Pacific Telegraph Company, Montreal, Quebec.

Mr. E. Waldron, night chief operator of the Western Union Telegraph Company, Atlanta, Ga. Mr. Waldron is a telegraph engineer of exceptional ability, and he improved the opportunities extended to him while in New York, to familiarize himself with every improvement in telegraphy that he had not previously heard of. Mr. Waldron made many friends while in the city, who regard the Atlanta management as being fortunate in having a man of Mr. Waldron's ability on its force.

**Meeting of the Old Time Telegraphers' and The United States Military Telegraph Corps.**

The twenty-first annual meeting of the Old Time Telegraphers' Association and the United States Military Telegraph Corps will take place at Montreal, Que., on September 11, 12, 13 next. The programme of proceedings, so far arranged, is as follows: On Wednesday, September 11, at 10.00 A. M., the informal meeting will occur in the ladies' parlors at the Windsor Hotel, Montreal. An address of welcome will be made by Mayor Prefontaine, M. P. At 10.30 there will be a business meeting of the Old Time Telegraphers' Association. The "Telegraphers' Home" project will be brought for discussion, and a proposition to merge the "Telegraphers' Historical Society of North America" will be considered. At 11.30 a business meeting of the United States Military Telegraph Corps will be held in the same place. At 2.00 P. M. a drive through the city and up to the summit of Mount Royal has been arranged.

On Thursday, September 12, a visit will be made to the Electrical Buildings of Montreal at 10.30 A. M. At 2.00 o'clock a trip will be made on the steamer "Duchess of York" via the Lachine Canal, a feature of which will be shooting the rapids and inspection of the harbor of the City of Montreal. At 8.00 P. M. a theater party will fill in the evening.

On Friday, September 13, a trip by trolley cars will be made at 2.00 o'clock, carrying the visitors to the power plant of the Lachine Rapids Hydraulic and Land Company. At 8.30 P. M. a subscription banquet will be held at the Windsor Hotel.

Members who propose attending this meeting are requested to communicate this fact early to Mr. Fred. H. Waycott, manager, Anglo-American Telegraph Company, Montreal. Chairman of the



Hotel Committee, who, upon request, will endeavor to secure the necessary room accommodations in advance. Tickets for the banquet, price \$3.00 each, can also be had from Mr. Waycott.

Arrangements have been made with the Richelieu and Ontario Navigation Company for the issue of excursion tickets at single fare to such members as desire to visit the City of Quebec.

The officers of the Old Time Telegraphers' Association are L. B. McFarlane, President, Montreal; J. E. Hutcheson, Vice-President, Ottawa; John Brant, Secretary-Treasurer, New York. Executive Committee: H. C. Hope, St. Paul, Minn.; H. J. Pettengill, Boston, Mass.; J. J. Dick-ey, Omaha, Neb.; J. Compton, Nashville, Tenn.; Thos. Ahearn, Ottawa, Can.; James Kent, W. J. Camp, Wm. B. Powell, Fred'k H. Waycott, Montreal, Can.

The officers of The United States Military Telegraph Corps are: Col. Wm. B. Wilson, President, Holmesburg, Philadelphia, Pa.; Wm. L. Ives, Vice-President, New York; J. E. Pettit, Secretary and Treasurer, Chicago, Ill. Executive Committee: E. Rosewater, Chairman, Omaha, Neb.; A. H. Bliss, Chicago, Ill.; Col. A. B. Chandler, New York; W. R. Plum, Chicago, Ill.; George C. Maynard, Washington, D. C.; D. Wilmot Smith, Breckenridge, Minn.; R. B. Hoover, Springfield, Ohio; L. A. Somers, Cleveland, Ohio; J. D. Cruise, Kansas City, Mo.

#### The Average Slip.

Editor TELEGRAPH AGE:

The question of the average number of messages handled by operators each day and the gaging of expertness according to the number disposed of, is the most erroneous system and one qualified to work a great injustice. In illustration, place an operator of very inferior attainments, a plug, in fact, upon a quad, and he will average two or three times the number of messages that a first-class man can possibly handle on way wires. The quad man has no calling to do, and merely sits all day at his desk receiving or sending. The way wire man will perhaps call from ten to one hundred times before raising an office and has to spend a quarter of his time marking down his calls. In fact, the way man does twice the hard work, sending fifty messages, as will the quad man, handling one hundred and fifty. A little thinking on the part of managers and chief operators on this subject will elucidate the matter, for it is not an intricate problem at all. To a man of the least comprehension it is as plain as the nose on his face. In order to arrive at a just estimate of the capacity of an office why not make a total of messages sent by the force each day and divide the total by the number of operators on duty. Then the company will understand that the force in general is doing its duty. It is evident that men who work hard all day on way wires receive no credit for their earnest endeavors, while many very inferior quad men are credited far above their deserts.

PHILIP H. FALL.

Houston, Tex., August 6.

#### Western Union History.

Mr. A. R. Brewer, Secretary of the Western Union Telegraph Company, New York, is the author of a very beautiful and artistic booklet entitled, "A Retrospect," it being a history of the Western Union Telegraph Company, covering the fifty years of its existence, from 1851 to 1901. In lieu of a preface, the following letter from Gen. Thomas T. Eckert, the president of the Western Union Telegraph Company, addressed to the stockholders, appears: "The semi-centennial of the organization of the Western Union Telegraph Company occurred on April 8, 1901, the articles of association of the New York and Mississippi Valley Printing Telegraph Company, the original name of the company, having been filed at Albany, N. Y., in April, 1851. It has been suggested that a brief unofficial sketch of the growth of the company during the fifty years would be of interest to the stockholders. Such a sketch has been prepared by the secretary, and I take pleasure in sending a copy of it to you."

Mr. Brewer is one of the best posted telegraph historians in the world, having made telegraph property and organization a study for upward of thirty years. It is, therefore, natural that his pen should produce an accurate and well written history of the great telegraph corporation with which he has been prominently identified for so many years. The work is profusely illustrated. Views of the New York and Chicago Western Union Buildings are shown together with reproductions of two of the pages of the tariff book of the House Printing Telegraph, published in 1851, one showing the old office at 21 Wall street, New York, the other a picture of House's Telegraph. There are shown also photographic reproductions of some old envelopes of sundry contemporaneous telegraph companies and their message blanks. The brochure is also embellished with a number of other engravings, showing the automatic repeating tables in the Western Union office at Buffalo, N. Y.; the operating room of the office at Denver, Col.; the dynamo room of the office at Pittsburg, Pa.; the pneumatic tubes centering in the main office at New York and which extend to the Stock and Produce exchanges and to branch offices about three miles distant; the figure of a modern Morse operator reading by sound of the instrument and writing message simultaneously on typewriter, and a facsimile specimen of printing by Buckingham's new machine telegraph.

Altogether the handsome volume is a highly creditable production from every point of view and will prove of interest to a wide circle of readers.

CHEAP CABLE MESSAGES.—A cable dispatch from London, England, says: At a recent meeting of the Eastern Telegraph Company the chairman, Sir John W. Barry, announced that in conjunction with the post office authorities, the directors of the company were formulating a scheme to enable the public, by means of a code, to cable to the Far East for about 2 cents a word.

### The Voltaplex.\*

Inventions having for their object the cheapening of telegraphic communication by increasing the carrying capacity of the wires, have multiplied somewhat rapidly of late, but these innovations have, for the most part, been confined to so-called automatic systems, whose inventors have sought to attain the desired end by the increased speed at which the signals are transmitted over the wire. These schemes are generally of so complex a nature, and so much preparatory work must be performed previous to its transmission over the wire and subsequent translation at the receiving end that, as a rule, these systems can be utilized to advantage only at points between which a large volume of business is handled.

I wish to call your attention to-day to an adjunct to the telegraphic service which has recently been brought out by Mr. H. D. Bartholomew, of Newark, O., chief operator of the Baltimore and Ohio Railroad, and Western Union Telegraph Company at that point.

Mr. Bartholomew calls his invention "The Voltaplex." This is a system adapted to ordinary, everyday requirements of the service which may be placed in the hands of unskilled operators with good results.

The Morse system, then, constitutes one side and the Voltaplex the other, making practically two separate and distinct circuits. Referring to the diagram, Fig. 1, it will be seen the Morse instruments are placed in the line next to the main battery; the Voltaplex instruments are connected next to the Morse relay in the line. In practice the Voltaplex is connected to the switchboard as a separate instrument which may be cut in on any Morse circuit at will. The graduating coil *G* and ground condenser *C*, placed next to the Morse relay, as shown, constitute the graduating device.

The effect they produce on the line, as is well understood, is to slightly prolong the Morse signals and to absorb the extra current at the moment of make and break of the Morse circuit. The condenser also performs a second office, namely, that of forming a path to ground for the Voltaplex currents. Next to condenser *C* is placed transmitting coil *T*, the operation of which will be explained further along. Next to the line is placed the polarized relay, which you will note is not directly in the line, but in series with condenser *C*<sup>2</sup>: in shunt around diverting coil *D*. The latter, while presenting very little resistance to the Morse current, has a high inductive

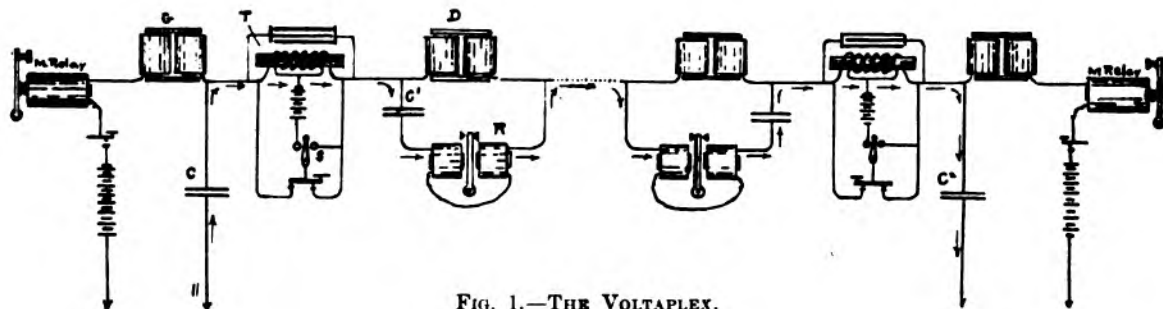


FIG. 1.—THE VOLTAPLEX.

The principle involved in its operation is, to some extent, analogous to that of simultaneous telegraphy and telephony, and the phonoplex system of telegraphy, in that graduating apparatus is employed to avoid interference between the two sides instead of the usual artificial line of the duplex system. It will help to a clear conception of the system if we bear in mind, in the start, that the line is equipped at each end with the ordinary Morse instruments which are operated in the usual manner just as any other Morse single line. The Voltaplex instruments are then connected in the line as an auxiliary to be operated entirely independent of the Morse, neither system interfering with the other in any particular.

\*Read by Charles Selden, of Baltimore, Md., before the Convention of the Association of Railroad Telegraph Superintendents, at Buffalo, N. Y., June 19, 20, 21.

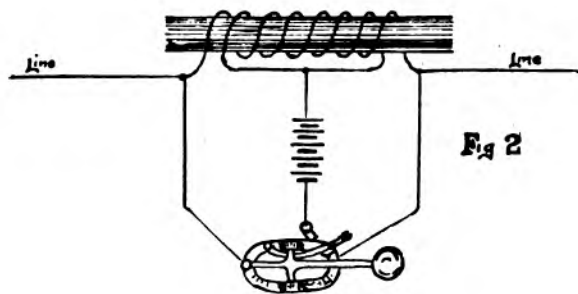
Mr. Selden, before reading, said: "At the request of the inventor, I present to you what he has to say upon the subject of a recent invention, which he terms the "Voltaplex." I wish to preface the paper by stating that I have not personally seen the device in operation, but my information is to the effect that it works satisfactorily, and that information comes from entirely trustworthy sources. The receiving instruments consist of a polarized relay, with which is connected the ordinary telegraph sounder. The amount of battery employed is the same as that used upon similar systems. It is the belief of the inventor, Mr. H. D. Bartholomew, Chief Operator of the Western Union and the Baltimore and Ohio Telegraph Office at Newark, Ohio, that its efficiency and carrying distance may be further increased when a larger practical experience has been had with the device."

resistance. It will be assumed, of course, that each end of the line is similarly equipped. I will now call your attention to the construction of the transmitting coil, which presents some novel features, and is an exceedingly simple and effective device for sending alternating impulses of uniform strength over the wire. The coil itself has the appearance of an ordinary induction coil, but an examination of its construction and the manner of connecting it in the line will show a wide difference. For instance there is no primary and secondary in the usual sense; in theory, there is but one winding, which is tapped in the middle; in practice, it is double wound and connected, as shown. In one position of the double-contact key one-half of the coil acts as the primary and in the other position the other half acts as primary, while at the moment of discharge, that is, the moment between the make and break of the key contacts, the entire winding is in series, and acts as the secondary. The manner of winding and connecting up the coil and its operation will readily be understood by reference to the diagram, Fig. 2. The advantage of this ingenious arrangement is that the impulses from the coil, both on opening and closing the key, are due to the break of contact, and consequently the maximum strength is obtained at each

discharge. It will be noted there is no transmitter in the arrangement, the key, relay and sounder comprise the only instruments with which the operator has to do. Occasional slight adjustment of the relay and keeping the key contacts clean are all that is required of the operator in the way of taking care of it.

The coils referred to are placed in a closed box and may be placed in any position, as they require no manipulation. I will now describe the operation of the Voltaplex in detail, keeping in mind that the wire is already in use as a Morse circuit. It will be understood that the Voltaplex relay is not affected by the Morse currents, because it is not placed directly in the line and the Morse current has not sufficient pressure to overcome the resistance presented by the condenser in series with the relay, and so keeps to the main line, passing through the diverting coil, which presents very small resistance to the Morse current.

Referring to Fig. 1, assuming that key switch *S* is thrown to the left, or "open," it will be seen that one-half the coil is short-circuited in series with the coil battery; should now the key be depressed and the rear contact thereby broken and before the front contact is made a current of definite polarity will be generated in the coil and pass out over the line; this



current, being of comparatively high voltage, is diverted from the main line by choke coil *D* and passes through relay *R*, whose armature is thereby attracted from its back to the front stop and similarly operating the relay at the distant end, passes thence to earth via condenser *C*. The front key contacts now being closed the coil is again magnetized, but in the opposite direction from before and upon the key being opened the coil is again discharged, but the impulse is now of opposite polarity and the relay armatures are attracted to the back stop. The relays thus respond to the downward and upward movement of the key just as if by a continuous Morse current. The armatures, of course, remain on either front or back contact, as determined by the last impulse. A permanent pull may be obtained by making the cores of steel or hardened iron. The path taken by the Voltaplex current is shown in the diagram by the arrows. It will be seen that it has a complete circuit without passing through the Morse instruments, which are therefore unaffected thereby. The Morse current similarly does not operate the Voltaplex relays, because it does not pass through them. This system may be operated over any existing Morse circuit, whether local or way offices are

cut in on the wire or not. It may be put in use over any part of a Morse circuit; that is, the Voltaplex terminals need not be at the same points with the Morse terminals. It can be connected to a Morse line at either terminal by a suitable automatic repeater. It can be operated over two or more Morse wires, each forming part of the Voltaplex circuit. Many other situations to which it is especially adapted might be mentioned.

As an open circuit system for equipping lines independent of the Morse it should find a large field. In this arrangement the relays are connected directly in the line and the wire simply grounded at each terminal. The apparatus is exceedingly simple. The entire equipment, including batteries for one end of the line, may consist of two pieces, the total weight of which is about 25 pounds. Perfect results have been obtained with the Voltaplex in various tests made over wires of different lengths and capacities. A recent test between Newark, O., and Pittsburg, Pa., a distance of 180 miles, over a 10 gage copper wire, gave exceptionally good results.

#### International Association of Municipal Electricians.

At the annual convention of the International Association of Municipal Electricians, which will be held at Niagara Falls, N. Y., on September 2, 3, 4, in addition to the paper to be read, as previously announced, by an eminent electrical engineer, on the advisability of placing high and low potential wires or cables in the same series of conduits or through the same manholes, the following topics will be discussed: "The Need and Value of a Set of Rules for Outside Construction," by P. H. Trout, Jr., Lynchburg, Va.; "Underground Electrical Construction from a Municipal Standpoint," by Edward F. Schurig, Omaha, Neb.; "The Protection of Fire and Police Telegraph Wires from High Tension Currents and Lightning," by W. M. Petty, Rutherford, N. J.; "Improved Storage Battery for Municipal Purposes," by J. W. Aydon, Wilmington, Del.

Municipal electricians and superintendents of fire and police telegraph systems in western and southern cities are particularly requested and invited to be present at the convention.

Intending visitors can secure accommodations by addressing either M. T. Donohue, superintendent of fire telegraph, or W. G. Green, 473 Second street, Niagara Falls.

A FAREWELL DINNER.—A farewell dinner was, on July 23, given to the members of the Board of Management of the Electric Building Loan and Savings Association at the Marine and Field Club, Bath Beach, L. I., N. Y. Mr. Theodore L. Cuyler, Jr., treasurer of the association, and president of the Marine and Field Club, tendered the use of the club-rooms for the occasion. Mr. F. W. Jones, vice-president of the association, presided at the dinner and in appropriate remarks dwelt at some length on the good accomplished by the association in its ten years' existence, in enabling many of its members to secure homes of their own.

**The Atkinson Repeater.**

BY W. E. ATHEARN.

The Atkinson repeater, recently adopted as a standard by the Western Union Telegraph Company, belongs to that class of single line repeaters using plain ordinary relays, both of which respond to the signals made on either of the wires connected by the repeaters. The necessary "holding closed" of one transmitter is accomplished by a repeating sounder in a local circuit of the other transmitter.

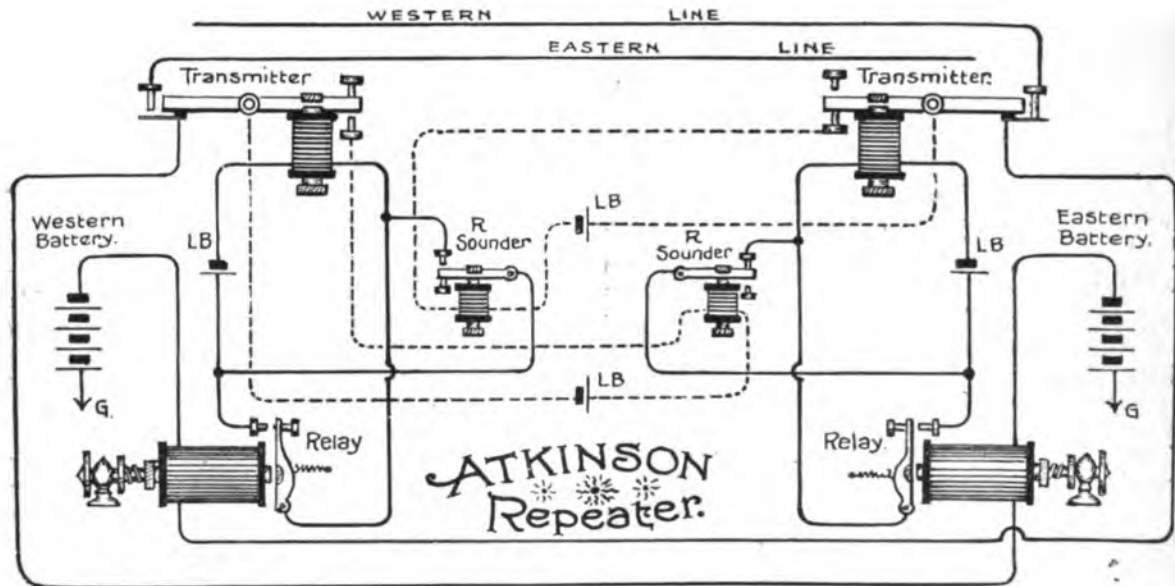
The fact that the holding devices are purely local makes this one of the simplest and easiest repeaters to keep in adjustment. No more skill is required than to adjust an ordinary relay. The universal rule that applies to the adjustment of all repeaters, however, should not be overlooked. Adjust your relay till the signals are perfect, then turn down a trifle on the relay spring. This compensates for the time lost and the shortening of the signals in passing through a repeater.

eastern relay armature to have closed its points before the bridge is broken.

Reversing the operation, the repeater action is as follows: The western relay opens, opening its transmitter. This first opens its repeating sounder and then the eastern main line, thus giving time for the bridge to be closed around the local points of the eastern relay before its armature moves backward. The repeating sounder should have quite a stiff spring, so that it will be comparatively quick to open and slow to close.

Three gravity cells for each transmitter and two for each repeating sounder are sufficient, unless the leads to the local battery are long, in which case it may be well to use four cells on the transmitter.

In the House of Commons, London, England, on July 30, by a vote of 150 to 44, a resolution was adopted authorizing the expenditure of £2,000,000 (\$10,000,000) on the Pacific cable, as per agreement with the colonies.



The diagram shows the western line sending. The opening of the western relay opens the local circuit of its transmitter. This transmitter is similar to that used in the Milliken-Hicks repeater, and its front contact points control a repeating sounder in a separate local battery circuit. When this repeating sounder opens, its contact points on the up-stroke bridge the local points of the eastern relay, thus holding closed the eastern transmitter.

When the operator on the western line closes his key, the operations of the repeater are as follows: The western repeater relay closes, thus closing its transmitter. As this transmitter closes, it first closes the spring repeating points at its back end, which close the eastern main line circuit; next its front contact points close the repeating sounder, thus breaking the bridge around the local points of the eastern relay. This slight delay in removing the bridge, made by the repeating sounder, gives time for the

**Mundy-Gray Submarine Signal System to Be Tested.**

The United States Government has granted the Submarine Signal Company of Boston permission to erect a cable house on Egg Rock. The company will establish a system of submarine signaling, by which vessels coming into Boston harbor may determine their position when within 10 or 12 miles from shore, and thus escape the danger of too nearly approaching the shoals and ledges at the entrance to the harbor. The company has also received permission to erect a cable house on Minot's Ledge. If the system proves successful, a series of stations will be erected at distances of 10 miles or thereabouts, along the entire Atlantic coast of the United States.

TELEGRAPH AGE is the only telegraphic paper published in America. It is up to date, covering its field thoroughly, and no telegrapher, official or operator, can afford to be without it.



**BUSINESS NOTICES.****A Great Telegraphic Code.**

The Western Union Telegraphic Code and International Cable Directory made its appearance in 1898, and has since been thoroughly revised in order to bring it right up to date. In this revision the International Cable Directory Company, of 30 Broad street, New York city, publishers, spared neither labor nor expense, no less than \$50,000 having been paid out on the work.

To establish a "Universal Code System" was a bold undertaking, and many persons familiar with codes and the telegraph business generally expressed grave doubts as to whether success would crown the efforts of the publishers.

There are in existence to-day innumerable codes, but they can be used only by such persons as have the particular code used. The Western Union Telegraphic Code, Universal Edition, is built on an entirely different plan. In other words, as its name implies, it is intended to enable holders of the code to communicate with a correspondent in any part of the world, whether the latter happens to have the Western Union code or not. In furtherance of this object the code has been placed in the principal offices of the Western Union and Great Northwestern Telegraph companies in all cities and towns of 2,000 population and upward in the United States and Canada, for the free use of the public. If, for instance, a firm in London sends a message by the Western Union code to New York or Boston, and the message is received by a firm not possessing a copy of the code, the latter can go to the Western Union Telegraph office and decipher the cablegram without the cost of a penny.

This is a startling innovation and the publishers deserve the thanks of the public for granting it such extraordinary facilities.

The establishment of a comprehensive code readily accessible to the business man is a matter of enormous public utility and means an entirely new development in telegraphy.

The code is on file in the offices of the Western Union, Anglo-American and Direct United States Cable companies in Great Britain, and on the Continent of Europe, as well as in the principal offices of the French Cable, Central & South American, Cuba Submarine, West India & Panama, Compañia-Telegrafos Federales, Eastern, East African and Eastern Extension Telegraph & Cable companies. Furthermore, the public has free access to the code in the government telegraph offices of the principal cities in Japan, India, Netherlands, Indies, Australia and New Zealand, and the International Cable Directory Company is placing the books in telegraph offices of other countries as rapidly as they can obtain consent from the respective governments.

While all this is a very costly operation it has brought the Western Union code into such general use that it is rapidly supplanting all other codes.

It is obvious that by having one code in general use a great saving of time can be effected by the business man. When a message is received, instead of having to haul down a dozen or twenty different

codes all that is necessary now is to inform the correspondent that the Western Union code is used, and the correspondent can go to a telegraph or cable office and decipher the telegram.

The Western Union code is the largest ever issued in this or any other country, comprising as it does nearly 175,000 code words and phrases. It treats fully upon almost every conceivable subject—from bicycles to liquid air—including social phrases. By its use an enormous saving can be effected in telegraph and cable tolls.

The book was long ago adopted by the United States War Department, and the United States Commissioners at the Paris Exposition found it of immense advantage. It received the highest award in Paris, and has been adopted by the Pan-American Exposition in Buffalo. In addition to the code the work also contains an International Cable Directory, the number of subscribers up to this time being about 20,000, including representative corporations, firms and individuals throughout the world.

The Industrial Department of the Lackawanna Railroad, in charge of William B. Hunter, and having its headquarters at 26 Exchange Place, New York city, has just issued a 500-page booklet under the caption—"Industrial Opportunities."

This work treats of every town on the line, showing its population, its distance from New York and from Buffalo, its railroad facilities, its leading industries, its leading shipments, its rate of taxation, cost of labor, rent of houses, how lighted, whether it has water works or not, its principal power, approximate cost of steam coal, approximate value of lands, and describing vacant lands or factories available for manufacturing purposes.

In the introduction the aim of the Lackawanna Railroad is set forth as follows—First: To give assistance to manufacturers in the selection of the most favorable site for their industrial enterprises. Second: To help cities, towns, and villages along the line to expand and broaden through the location of new industries.

The advantages of this line in the mining regions of New Jersey and Pennsylvania and the agricultural districts in the State of New York are fully set forth. Copies of the book will be forwarded on application to the Industrial Department.

At the annual meeting of the stockholders of the Standard Telephone and Electric Company, of Madison, Wis., lately held, the capital stock of the company was fixed at \$300,000, and the following officers were elected: Thomas H. Gill, attorney for the Wisconsin Central Railway, Milwaukee, president; A. L. Hutchinson, of Weyauwega, Wis., president of the Independent Telephone Association of Wisconsin, vice-president and general manager, and E. W. Batchelder, of Madison, secretary and treasurer. These three officers constitute an executive board. The business of the company is in a prosperous condition, and the new officers will spare no pains nor labor to perfect the efficiencies of its output and to increase the same.

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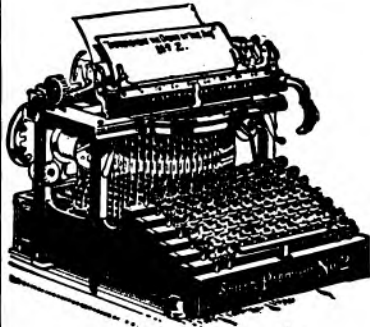
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NEW YORK, August 16, 1901.

**NOTE.**—We desire to state that back numbers of this paper, those issued more than six months prior to any current date, will be charged for at the rate of twenty-five cents apiece when they can be furnished. This price is fixed because of the necessarily limited stock we carry, and of the difficulty we commonly have in filling an order. Oftentimes the request is for papers of a more or less remote date, with the expectancy of being supplied at but ten cents a copy, whereas in order to obtain the desired issue we are ourselves frequently obliged to pay the larger sum, or even more. The growing value of complete files of TELEGRAPH AGE should cause our readers to carefully preserve their issues.

**THE ROBERSION QUADRUPLEX.**—The Roberson Quadruplex System, which has been recently adopted by the Western Union Telegraph Company, and which will be put into extensive use throughout that system, was illustrated and described in our issues of March 16 and April 1 of this year. Those who desire copies of these issues can obtain the same at 10 cents apiece. As there are only a few of these numbers left, we would urge those who wish to become posted on this new system to procure copies before they are entirely out of print.

### Mr. Clark Before the Industrial Committee.

The statement of Mr. Thos. F. Clark, vice-president of the Western Union Telegraph Co., New York, made before the United States Industrial Commission at Washington, D. C., March 14, 1901, on the subject of government ownership of telegraphs, has been printed in pamphlet form. The statement occupies thirty-five pages and is replete

with extremely valuable information on this subject and is attracting the attention of the public.

The testimony of Mr. Clark covers the subject very thoroughly and includes a lengthy and interesting argument on postal telegraphs. A map showing the system of local telegraphic rates in the United States by a system of squares is incorporated in his argument, together with tabulated forms of foreign telegraph statistics, naming the respective countries, miles of line, miles of wire, number of offices, number of employees, number of messages handled, receipts, expenses, area in square miles covered, population per square mile, miles of wire to each square mile of territory, number of people to each mile of wire, miles of wire to each person.

The statistics are given to cover all the principal countries of the world and the comparison is made with similar statistics covering the United States.

### A "Mental Anguish" Case.

Two years ago a citizen of Columbia, S. C., brought suit against a telegraph company and received a verdict of several thousand dollars damages for "mental anguish" resulting from the non-delivery of a telegram. The Supreme Court decided that a person could not recover damages for mental anguish disconnected with and in the absence of bodily injury.

The last South Carolina legislature passed an act making telegraph companies especially liable to damages for mental anguish caused by their negligence, even in the absence of bodily injury. The first case tried under this act has just been won by the plaintiff, who suffered because she supposed her husband was ill, when in fact he had telegraphed that he was all right.

The telegraph company has appealed, and is employing two of the strongest law firms in South Carolina to fight the case in the Supreme Court.

### Greengoods Swindlers and the Telegraph.

Charles P. Adams, of Jersey City, superintendent of telegraph of the Central Railroad of New Jersey and of the Western Union Telegraph Company, covering that system, and Alfred Kaiser, manager of the Claremont, N. J., telegraph office, were arrested a few days since, charged with aiding and abetting greengoods swindlers. The complaint was made by Chief of Police Benjamin Murphy, of Jersey City. The greengoods swindlers were not caught, and Chief Murphy proposes to persecute these telegraph people as he persecuted for years the manager of the Western Union office at Jersey City for refusing to divulge the contents of telegrams.

The swindlers used largely the telegraph in their operations. The headquarters of the swindlers is in New York, but they have had their telegrams sent to Jersey City, and for several years Chief Murphy, of that city, has been trying to stop this practice.



Rufus H. Minot, of Northfield, Mass., received a circular by mail which represented that the senders had obtained government plates, and could print United States Treasury notes so cheaply that they could afford to sell them at a large discount. The circular advised Minot, if he wanted to make a fortune easily and quickly, to telegraph "William N. Gray," at Claremont, N. J.

Chief Murphy wrote to Minot to send the dispatch to Claremont and notify him of further developments. They came in the shape of a price list and a good one-dollar bill as a sample. Minot also got a letter instructing him to go to the Astor House on reaching New York, register under his real name, giving Boston as his residence and stick close to his room until somebody came after him. He was to give this password, Kenman, to this somebody and accompany him to their New York headquarters, where wealth would be awaiting him.

On June 27 Chief Murphy wrote Minot to send this dispatch on July 15: "William A. Gray, 1924 Third avenue, New York city. Don't like this place. Will be in telegraph office, Claremont, at 4 o'clock on Wednesday, July 17. Will have your letter in my hand with 291 on envelope. R. H. M."

Two days later Minot notified the chief that the greengoods men didn't like the changed program and had informed him that they didn't do business at Claremont, but at their New York office. Minot later agreed to telegraph from Northfield that he would be at the Astor House, and Captain Titus, of New York, at the request of Chief Murphy, had a detective on hand to impersonate him, but the greengoods men did not show up.

Chief Murphy was anxious to ascertain if the New Jersey telegraph operators were in collusion with "William A. Gray" and his gang. Acting Inspector McKaig went to the telegraph manager at Claremont and told him he would be arrested if he didn't tell what became of Gray's telegrams. A similar visit was made to Superintendent Adams, but all information was refused.

Chief Murphy was certainly delinquent in his duty, and to say the least he did not show the average wisdom of a police officer when he undertook to change the program of the swindlers. His anxiety to capture them on New Jersey soil will not relieve him of the suspicions that he, in dictating that one message changing the place of meeting from New York to New Jersey, showed his unfitness for the office he occupies. He lost an opportunity to capture this gang by practically giving them warning that all was not right and the suspicions of the swindlers must naturally have been further aroused by the later change of the place of meeting back to the Astor House. It was a bungling piece of business on the part of Chief Murphy, and no amount of persecution of telegraph officials should relieve him of responsibility for failure to capture these greengoods swindlers. Chief Murphy might just as well endeavor to persecute the mail clerk who handled the mail that carried the swindling circular, or the railroad or ferry companies that transported the swindlers from place to place, as to take the action he has just

inaugurated. They are equally responsible with the telegraph people as aiding and abetting greengoods or any other kind of swindlers. As a matter of fact a telegram can be forwarded and reforwarded to any point so long as the sender is willing to meet the expenses.

On this subject Mr. G. H. Fearons, the general attorney of the Western Union Telegraph Company, made the following pertinent observation:

"It is nonsense to talk of collusion between our employees and 'greengoods' men. We are compelled by law to transmit all messages which are not palpably improper for us to send, on account of profanity or otherwise. Do you suppose that in each of our 25,000 offices we could establish a censorship? How long do you suppose the public would tolerate such a rule? Our operators cannot pass upon the contents of a message. It is their business to receive and transmit whatever is given them that is couched in proper language. None of our men can divulge the contents of telegrams, except to the sender or sendee. It is not our business to assist the police in ferreting out criminals. It is our business to look out for the interests of our customers. We cannot go into the question of cross-examining our employees. Swindlers have used our wires many times before. The only way to stop the practice is for the government to order us to censor dispatches. I fancy the order would not be popular."

**LOAN ASSOCIATIONS CONSOLIDATE.**—On August 5 the formal transfer of the Electric Building Loan and Savings Association was made to the Serial Building Loan and Savings Institution, whose offices are located at 195 Broadway, New York. The latter institution will hereafter conduct the business of the former, as previously announced in these columns.

To legally effect the consolidation the resignations of A. B. Chandler, president; F. W. Jones, vice-president; Theo. L. Cuyler, Jr., treasurer; and E. S. Butterfield, secretary, were accepted and the places filled by the election of D. B. Mitchell, president; John Brant, vice-president; T. M. Brennan, treasurer; E. F. Howell, secretary. A number of the old directors of the Electric have been elected to the board of the Serial, and hereafter the boards of the Serial and Electric will be the same.

"Electricity Made Simple" is the title of a 233 page book; paper binding, 50 cents; cloth binding, \$1. The author, Mr. Clark C. Haskins, of Chicago, is an old-time telegrapher, but has been engaged as an electrical expert for the past twenty-five years in the various branches of electricity.

This little work is not intended for the instruction of experts, nor as a guide for professors. The endeavor has been throughout the book to bring the matter down to the level of those whose opportunities for gaining information on the branches treated have been limited.

Those desiring copies of this useful work may obtain the same by remitting price to J. B. Taltavall, TELEGRAPH AGE, 253 Broadway, New York.

**Benjamin Palmer Hancock.**

Mr. B. P. Hancock, the newly appointed traffic chief of the main office of the Postal Telegraph-Cable Co., Chicago, Ill., was born at Centreville, Ala., on April 20, 1868.

He began his telegraphic career as messenger at Corpus Christi, Tex., 1881. He became an operator in the construction department of the Mexican National Railroad at Ojo Caliente, Mex., in 1883. In 1885 he entered the commercial service at Galveston, Tex. From October, 1891, to January, 1892, he was manager for the Postal Telegraph-Cable Co. at Chattanooga, Tenn. From there he was transferred to Nashville as manager of the same interest, which



BENJAMIN PALMER HANCOCK.

position he held until April, 1893. About this time on account of ill health he was obliged to give up telegraph work, and remained out of the service until 1897. In May of that year he re-entered the Postal service at Memphis, Tenn., where he was made chief operator. He was transferred in the same capacity to St. Louis in May, 1899, and thence to Chicago, as above indicated.

Mr. Hancock has the reputation of possessing ability in handling successfully large numbers of telegraphers. The appointment to his present position, therefore, gives him larger scope to exercise this important faculty.

**To Relay Wireless Telegraph Messages.**

It is now said to be possible to relay wireless telegraph messages. This relay consists of two kites. One receives the message and the other charges it with more force and sends it on.

The inventor says he is able to send a message 50 miles over land and then pass it through the relay apparatus, which he can manipulate at the starting point. He ventures the prediction that such stations could be established at intervals of 50 miles, repeating and forwarding the messages almost indefinitely.

*You can't afford to be without TELEGRAPH AGE.*

**A Great Strike in 1883.**

"Eighteen years ago, on July 19," writes J. H. McN., in the Toronto, Ont., Monetary Times, "was declared a strike of labor, which for a month paralyzed the business of the country, and, perhaps, in the history of the North American continent has been unequaled in its disturbing effect on commerce except by the present contest which the Amalgamated Association (Organized Labor) is waging in the steel works, etc., of the United States. My purpose was, as indicated in an article furnished you in 1893 on the subject, to take up and discuss the effect of the Telegraphers' strike upon telegraphy as a profession, judging it in the light of history. I find the subject has widened into many channels.

"The progress of electrical science; the almost universal use of the typewriter as an adjunct of telegraphic work; the vast increase in the employment of women in the service, and many other but minor matters of issue have made it difficult to include within the limits of an article, suitable for your columns, all material matter pertaining to his subject.

"I find a very wide difference of opinion as to the general results of the strike upon the character of the profession generally; but on one point—on two points, to be specific—there is a general agreement: The morale of the profession is distinctly better; the remuneration is as distinctly reduced.

"Now these two matters of fact involve direct conclusions: The large increase of women among operators has undoubtedly led to decreased remuneration; but the typewriter is yet more directly responsible for this change. Operators, who because of poor penmanship could never hope to get out of small or comparatively unimportant situations, now flood the country, and I fancy that to this 'improvement' more than to any other cause, is due the decreased earning capacity of the telegrapher. The conclusion is, therefore, that while the moral tone of the profession has been enhanced by the development of the woman-telegrapher, she has, with the aid of the typewriting machine, made the profession one affording but a precarious living for the male member engaged in the business.

"I have already, in the papers written for the Monetary Times in July, 1893, expressed my opinion of the move as a labor rebellion on a most chimerical pretext. It sent out on strike on July 19, 1883, some 15,000 or 20,000 telegraphic employees in the United States and Canada, and well nigh paralyzed commerce. The telegraphers, it should be remembered, were organized as a branch of the Knights of Labor, and their designation was 'District 45, K. of L.' What they struck for then was pretty much what employees in other directions are striking for to-day, namely, recognition of the organization as a body, whose leaders were to be treated with by employers. The 'Bill of Grievances' of 1893 did not ask for this, however, but asked for shorter hours; equal pay for the two sexes; and 15 per cent. higher pay all round. The Baltimore and Ohio Telegraph Company conceded part of what was asked, but refused to recognize District 45, K. of L. Roger J. Mullin, of Toronto,

was the moving spirit of the strike in Canada, assisted by a very active man in Montreal. The telegraph companies remained firm in their attitude of refusal to recognize the Knights of Labor, and by August 15 the strike was announced by the strikers themselves to have failed.

"Now, to sum up what was the outcome of this remarkable ebullition.

"The strike resulted in these direct benefits to the telegraphers:

"Regular hours of labor;

"Pay for overtime at rate of salary;

"No compulsory Sunday labor;

"A better moral tone, and cleaner offices.

"But as every rose carries its thorn, so these benefits, great in the aggregate, have led to cheaper labor, enhanced by the vicious 'waiting list' now a characteristic feature of all important offices, where applicants for a job must wait their turn. This is a cleverly devised scheme by which a man secures employment at the pleasure of the manager; works at the pleasure of the chief operator, or traffic chief, and is paid only for the actual hours of duty performed. It has had its part in cheapening telegraphic labor, but I have called it vicious for a thoroughly different reason. It is a direct encouragement to the 'floater,' who works here and there as the wind blows and fancy pleases for a grub-stake and transportation to the next important town on his list.

"There is a sort of moral vagrancy about this, which not infrequently leads to evil results, to dissipation and worse, not to mention that in its use there is opportunity for much abuse of the individual rights of the 'extra' man, because it is generally assumed that if he possesses any such rights, he must keep them cleverly concealed. In this connection I have no reference either to this present locality nor to conditions existing across the border.

"I do not see any prospects, or even possibilities of another telegraphers' strike. If one comes, however, it will be many years from now; though we must not forget the extremely rapid growth of the old organization of 1880 or thereabout and its prompt action taken when 'all were in' whom it were possible to bring in by any means. The atmosphere has cleared so far as one may judge from present appearances, and left the situation baldly clean.

"I deduce that the occupation of a telegrapher, while a most enticing profession, is not one to recommend a youth starting in life to take up."

#### **Unnecessary Railroad Telegraphing.**

The following circular, under date of July 16, has been issued by the Chicago, Rock Island and Pacific Railway Company, addressed to its employees. The subject is so important and timely that we publish it in full:

"It is desired to impress upon all employees the absolute necessity of lessening the amount of telegraphic business filed for transmittal over the company's wires at the present time. An inspection of the messages so filed, covering a limited period, leads to the conclusion that certainly 30 per cent., possibly

40 per cent., of these could have been forwarded by train mail without injury to the company's interests, and of the remainder a very large percentage could have been materially shortened by cutting out surplus words. Many messages are being sent to and from general and division headquarters which are filed at an hour in the afternoon when there is no reasonable probability that they can be delivered before office hours the following day and after the arrival of trains upon which these messages could as well have been forwarded. In many cases messages are being sent about trivial affairs scarcely worth the trouble of writing either a message or a letter. Messages of importance in themselves are often followed by one or more others asking why answer to the first is not forthcoming.

"It is feared that some employees are laboring under the impression that the number of telegrams sent is an indication of the importance of their duties and an evidence of the zeal with which they perform them. This mistaken idea, if held, should be dropped. The useless filing of a message, or the filing of one unnecessarily long, will be considered as a disregard of the company's interests rather than a desire to promote those interests.

"In the above it is intended only to suggest some of the ways in which telegraphic work can be lessened. However, each person making use of the wires must, from the very nature of the situation, be largely his own judge of the importance of his messages, but the full and hearty co-operation of all employees in an effort to relieve our wires of an unnecessary burden is expected."

#### **Keeping Alaska in Touch.**

Reports to the War Department from the military authorities in Alaska give assurance that the various projects for greatly extending the telegraphic service in the Territory will be fully carried out during the present season.

Capt. William R. Abercrombie is engaged with a large force of men in constructing the proposed military road from Valdes on the southern coast to Circle City on the upper Yukon, near the boundary of the British Northwest territory. At the same time the military telegraph line is being extended along that route, and it is expected that even before the completion of the wagon road the telegraph facilities over the entire distance, from the Gulf of Alaska to the Yukon, will be in operation. While this work is going on large detachments of army signal corps men are extending the telegraph along the Yukon, so that the means of communication between all the military posts in Alaska from east to west may be complete before winter sets in.

The work has progressed so far now that there is immediate need of operators for the various stations.

In these days when technical knowledge is of such value to the telegrapher who would master his profession, its acquisition becomes of supreme importance. A subscription to TELEGRAPH AGE will supply the information every operator needs.

A good advertisement for telegraph companies: Don't write, telegraph.

**Thomas H. Harper.**

Mr. Thomas H. Harper, the newly appointed chief operator of the Western Union Telegraph Company at Toledo, Ohio, was born at Westhay, England, on February 5, 1864. His telegraphic career has been confined wholly within the State of Ohio, where for nearly twenty years he has been actively employed in his vocation, for it was in October, 1881, that he became a check clerk for the Western Union at Toledo. In 1883 he went out in the memorable strike of the operators, which was inaugurated on July 19 of that year. During the winter and spring of 1883 and 1884 he was with the Baltimore



THOMAS H. HARPER.

and Ohio Railroad Company at Newark, Ohio, returning to Toledo, however, in June of the latter year, where he re-entered the employ of the Western Union, accepting a position as operator in the Exchange office. From this date his promotion has been steady. In 1890 he was appointed chief operator of this office, and in 1896 was transferred to the main office, being promoted to the position of wire chief. His latest advancement was on July 10 last, when he received the appointment of chief operator. Mr. Harper has shown signal ability as a telegrapher, and quickly won the esteem and confidence of his official superiors.

**Odds and Ends.**

"Them women make me tired," said the First Telegraph Operator, as he opened his key.

"What's the matter, now?" asked the Second Telegraph Operator.

"One of 'em was just in here and wanted to know why we wouldn't let her put a postscript to a ten word message, without charging her extra. Said it wasn't part of the message, anyway."

**THE SLIGHT USE OF AUTOMATIC OR MACHINE TELEGRAPHY.**

BY EDWARD A. CALAHAN.

The question, "Why machine telegraphy has not been more generally adopted in America?" has been asked me many times, no doubt from the fact of my early experience in that branch of the art, and also that I have followed the improvements and developments with considerable interest up to the present time. I therefore have concluded to venture an opinion as to the causes.

The "Bain" was the first telegraph of the automatic class, and was practically used in this country in 1848 and 1849, but to a very limited extent. It was finally abandoned through want of a practical perforator, none having been invented up to that time. Omitting references to various foreign inventions relating to this subject for the reason that they had never been used or tried in this country, the invention of Bain was followed by that of John P. Humaston. The novelty of this invention was principally in his perforator. The transmitter and receiver were slight improvements on well-known instruments. The perforator consisted of a keyboard and a series or group of punches so arranged with reference to the keyboard that an entire letter of the Morse alphabet was punched by a single movement.

The motive power was obtained by the movement of two pedals worked alternately by each foot after each key representing a Morse letter was depressed. The resistance in punching the single dot "e" or the dots and dashes which made up the "period" was not appreciable. Finger power was not necessary beyond the selection of the keys.

The punches cut square holes in the paper tape. It will readily be seen that the contact brushes would make better and more uniform contacts through square than through round holes. This was proven in many tests on the lines of the American Telegraph Company.

The capacity of the perforator was limited to the skill of the operator, comparing favorably with the speed of the typewriter of to-day. The square hole did not always clear itself, and it was as necessary to read over and correct the punched slip before transmitting, as it was to translate it at the receiving end. With the slip carefully punched and doctored, 600 words per minute were frequently transmitted from New York and received in Boston in readable condition.

The American Telegraph Company was under contract to purchase this system. This company and the Western Union consolidated, the latter assuming all contracts made by the former. General Anson Stager, general superintendent of the Western Union Company; Austin F. Park, of Troy, and Hamilton E. Towle, of New York, both civil and mechanical engineers of prominence, were selected as a committee to make the final tests and decide on the speed most practicable and the value of the system. They started at 600 words per minute on a wire between New



York and Boston, and reduced the speed gradually until they reached 300 words per minute, which they decided was the practical speed of the Humaston system. This being far below the Humaston claims, litigation followed, resulting in a verdict for Humaston; the apparatus then becoming the property of the Western Union Company, it was quickly reduced to the scrap heap, and the patents were allowed to expire. Thus ended the first real attempt to inaugurate automatic telegraphy in America.

Having personally managed all the tests of the Humaston system, and knowing from experience the uncertainty of the square perforation in practical use, I devised and patented a perforator, the principal feature of which was a wheel containing hollow-cutting punches arranged in line with the axis of the wheel, and containing the full Morse characters to be punched by one motion. The perforations were round, and, therefore, there were no corners to be cleared.

This perforator was never put to practical use, as the subject was not interesting to the Western Union Company, the only telegraph company in the country at that time, all others having been absorbed. Prescott, in his "History, Theory and Practice of the Electric Telegraph," page 135, after commenting on the Bain automatic theory, says: "Let this system be introduced and the imagination revel among marvelous accomplishments as it will, it cannot exceed the actual results which will be obtained. The question which will be at once raised by the reader is, Why, if this is practicable, has it never been accomplished?" This book was published in 1864.

On this subject Mr. Prescott had little more before him than the Bain theory. In his work entitled "Electricity and Electric Telegraph," 1877, with the knowledge of several improved systems, his comments are in noticeable contrast with those of 1864, at which time he was connected with the American Telegraph Company, which company was favorably disposed to an automatic system, and would have adopted one but for the consolidation above named.

Two companies with decided improvements on "Bain" have come and gone, not perhaps through any fault in the system, *per se*, as much as from other causes. The Automatic Company of the early seventies sold their patent for two or three millions of dollars of another company's stock, which they failed to get after closing up business. The American Rapid Company of the early eighties, notwithstanding that nearly 200 miles were covered to connect New York and Philadelphia, was doing a fine business and about paying its way, when a few Morse men got control, resumed key-working, and burst it up in short order.

The Wheatstone system, used so extensively in Europe, was started here by the Western Union Telegraph Company more than a decade ago, but has not been extended beyond its original limited district. Even the tape-printing machine of Hughes, with Phelps' improvements, an American product

so extensively in use throughout Europe, has never expanded beyond New York, Boston, Philadelphia and Washington—one wire to each place. The Morse key has been the yardstick of carrying capacity in this country. When this limit was reached additional wires were strung, until it is our proud boast that with a much more sparsely settled population we have more length of wire per capita than any other country on earth, every mile representing about \$150 of capital stock. This may be a good condition, but it does not hold out much promise for cheap rates.

At the present Morse speed the limit of lowness has been reached. It cannot be expected that this condition will remain indefinitely, it being known that a wire can be made to carry as much as 50 Morse operators can put into it.

There have been reasons, commercial, mechanical and prejudicial, for machine telegraphy's hard road. The commercial reasons grew upon the basis of miles of wire, instead of carrying capacity being recognized as the proper basis of stock capitalization. The mechanical reasons had some foundation in the imperfections of systems, and the prejudicial reasons, perhaps most powerful of all, arose from the disinclination of operators to adapt themselves to any new way of working. It has been charged, and correctly, I believe, that of all nationalities, the American operator is at once the most proficient and the most prejudiced. He excels at the Morse, but will learn nothing else. He was the first to read by sound. He murmured at the duplex, kicked at the quad., and has looked with still less favor upon working a perforating machine for automatic telegraphy. Such prejudice was fully known to the Western Union Company when it was obliged to import all the perforating and other operators from England to equip the Wheatstone system. Humaston was well aware of it, and was obliged to educate young men who had no previous knowledge of telegraphy.

The exceptions to this prejudice are the men who have left the ranks to fill better positions in the service. These perforating machines have been improved from time to time by various inventors, but none of them have appealed to the fancy of the key operator, and companies have been reluctant to introduce a separate set of operators for machine telegraphy alone.

The three-keyed puncher of the Wheatstone system contains two keys more than the Morse operator cares to use. One has always been quite enough for him, hence the necessity for imported labor. It may prove as well that the three-keyed did not operate, or that keyboard punchers have not appealed to popular favor, for necessity, often the mother of invention, has within the past few weeks brought out a perforating machine which is operated by an ordinary Morse key, and without any more labor, care or concern on the part of the operator than is imposed by the operation of a city line circuit.

The machine is up to the speed of the fastest manipulator, and can be worked a thousand miles

away or under any conditions that a relay and sounder can be operated. The perforated tape may be used for transmission at 2,000 words a minute, and messages recorded in plain dots and dashes at the receiving station, or it can be run through at top Morse speed and taken by sound and type-written. Business can be collected from outlying places already punched at the speed of the branch operators and put on trunk lines at any speed required. In Morse transmission the tape would average double the speed of key transmission, and this without crowding the typewritist at the other end.

Taking into account the inroads of the telephone on the telegraph business, the small number of telegrams carried—about one per head per year—the necessity for cheaper rates and greater volume is apparent. In connection with this important improvement by P. B. Delany, which makes every operator in the country a perforator as well as a key man, it would seem that great changes in telegraphy are close at hand, and when the letter-carrying telegraph starts long-distance telephony will feel it sharply, for no talking machine can keep up with a 2,000-word-per-minute recorder.—*Electrical World and Engineer.*

#### Paraguay Telegraphic Service.

A telegraph line from Asuncion to Paso du Patria has been constructed, a cable being placed at the intersection of the Tebicuary River, so as to avoid the continuous interruptions by the boats navigating that stream. Another cable crosses the Paraguay River at Nueva Franca, joining the Paraguay telegraph line with that known as the Chaco line of the Argentine Republic. There is also in process of construction a telegraph line from Humaita to Curupaty, where another cable will be placed which will unite the Paraguayan line with that of the Argentine Republic at the colony of La Palma. Paraguay will then have three telegraph lines connecting the Republic with the rest of the world. Two other interior lines, one to the north and the other to the eastern part of the Republic, have been authorized by acts of Congress. The number of domestic telegrams sent in 1900 was 35,218. In that year 25,075 telegrams were received from other countries, and 23,276 telegrams dispatched to places outside of Paraguay.

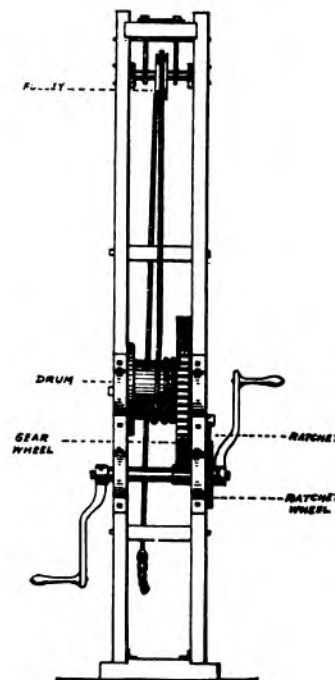
The underground telegraph cable which the postal authorities have just completed between London and Birmingham, England, in place of the overhead wires, is the longest subterranean cable in the world. It is 117½ miles long.

John Smith, a member of one of the day forces, was recently discharged because the management could not recognize his copy. He used fifteen different makes of typewriters in the performance of his daily labor.

**TELEGRAPH AGE** should go regularly to every one interested in the telegraph. Write for a sample copy of the Convention number, September 1.

#### A Pole Pulling Machine.

Mr. C. H. Bristol, general superintendent of construction of the Western Union Telegraph Company, Chicago, is the inventor of a pole or stump pulling machine which we illustrate herewith. This device has given excellent satisfaction wherever it has been tried, its work being accomplished with great ease and promptness. Many months' trial of the machine has convinced the inventor, and those who have used it, that it is a success and will prove to be of



BRISTOL'S POLE PULLING MACHINE.

great utility, especially in the resetting of poles and also the pulling of poles where lines must be moved. It pulls the poles or stumps without any digging. Construction parties will find this an admirable device to have handy in all construction and reconstruction work. The diagram of the machine needs no detailed description. It clearly shows the construction, and no doubt Mr. Bristol will be glad to furnish any additional information that may be required.

#### First Wireless Telegraph System.

Mr. John Mitchell, night telegraph manager of the New York Herald, has taken four expert operators to Nantucket light ship to introduce the Marconi system of wireless telegraphy. He will supervise the work until it is well under way, when he will return to his position at the Herald office.

The men who have the honor of being the first Americans in this new field for telegraphers are Messrs. Thos. Tierney, J. J. Kelly, R. Pfund and N. S. Muscal, lately employed by the Postal Telegraph-Cable Company, New York. All four are expert telegraphists, in both the Morse and Continental codes.

### Rapid Telegraphy.

The average practical telegraph engineer has a deep-rooted distrust of rapid telegraphy, including in that class any and every system which requires the transcription of messages to fit them for automatic transmission. The old original Morse, only slightly modified for convenience, has held its own in a fashion that is little short of marvelous. Improvements have come and improvements have gone, but the hand key of half a century ago still dominates the art. Of course, in much telegraphic work the operation of transmission is greatly shortened by conventional abbreviations forming a species of code, but the process remains essentially the same. Every one admits the desirability of increased speed, enabling a single wire to do the work of half a dozen, but there is a general dread of the ensuing complications, both as to apparatus and methods. Both here and abroad the Wheatstone system has come into some use on important lines, but it has by no means taken the place that at one time seemed probable. Inventors are wonted to lay the non-success of rapid systems at the door of the telegraph monopoly, declaring that its cautious conservatism has impeded the experimental adoption of various more or less promising systems. On the other hand, it is contended that the great telegraph companies of the world are not in business for their health, and that a change in the art that would afford an opportunity for increased profits would assuredly not be unwelcome. The conservative element will even admit that the apparatus of some of the rapid systems has been beautifully worked out, and is by no means forbidding in its complication, so that failure in the technical sense cannot fairly be cited as a valid reason for non-success in practical operation.

It will not be without interest, therefore, to consider the question from the standpoint of those who view rapid telegraphy with disfavor. One of the objections offered is that such systems have a certain unwieldiness, pertaining rather to the systems as a whole than to their technical operation. In sending a telegram there is a certain amount of lost motion. The message is written upon the blank, turned in, and then passed along to the operating room, and put on the operator's hook. In due season it is sent over the wire, transcribed on a typewriter at the receiving station, and is then passed over to the delivery system. The total time taken in this process is mostly occupied with other things than the transmission itself. As a matter of practice it may take an hour, more or less, to get the message from the sender in New York to the receiver in, say, Washington. On the average, the transmission only takes a minute or so, and the remaining 59 minutes are devoted to delivery and to waiting, including the time taken to get the message to the sending office. No actual shortening of the time of transmission can save directly any material time in ordinary business messages. With the Wheatstone system the message might actually be sent in, say, two seconds, a gain entirely trivial from the standpoint of the public. A far greater gain can be made in the increased capacity of lines, giving a short wait prior to transmission. But on any automatic system the written message

must await its turn at the perforating machine, and in systems like the Wheatstone it must also await its turn for transcription, which lessens, or even quite negatives, the advantage gained by added capacity of the lines. And a telegraph boy will not put on more pace for an automatically sent message than for any other. As a result of these conditions it is held that there can be no heavy pressure of public opinion to force the adoption of rapid telegraphy, that the real gains are in a somewhat lessened operating force and in increase in line capacity, which are felt inside the telegraph company rather than by the public; that a great increase of speed, say, to several thousand words a minute, would not affect any except a very small number of trunk lines, and would not be felt by the public at all.

From this standpoint, improvement should be looked for in the direction of automatic reception in printed form, even at rather moderate speed, more than in a greatly quickened rate of transmission. This eliminates one step of the operating process entirely and effects a material saving both in time and money. Practically, printing on a tape is objectionable, so that automatic page printing is the real desideratum. This has been successfully accomplished in more than one apparatus, and, as may be known to some of our readers, the beautifully ingenious Buckingham system has been in steady commercial use on one of the most important trunk lines in the country for many months past. The automatic delivery of messages neatly printed on regular blanks ready for distribution is a most important step, but the original transcription of the message into the form of perforated tape still remains rather a stumbling block. A perforating machine capable of being worked at any considerable speed is not a simple affair, and while it can in practice be worked much faster than a Morse key, it has been held to be an inconvenient necessity. In certain classes of work, such as press dispatches, it might be possible to prepare tape outside of the telegraph office, but the objection is made that such a process has its limitations—a rapid telegraph system being likened to a four-track railway, which needs heavy traffic to bring out its economic value. To a certain extent it may be able to build up its own traffic through increased facilities, but under the present organization of the telegraph industry there seems small chance of the tariff being put down to a point that will justify very extensive use of the service for general communication. It is admitted that possibly in the event of a postal telegraph system being established, automatic telegraphy might come into far more extensive use than seems likely under present conditions, but save for some such contingency its functions, while highly important, seems likely to be confined within rather narrow lines. As we have frankly advocated automatic telegraphy, we present the above statement of the other side of a question which is progressively assuming more importance.—*Electrical World and Engineer.*

A subscription to TELEGRAPH AGE is one of the best investments a progressive telegrapher can make; it keeps him thoroughly posted.



**Frank C. Hackett.**

Mr. Frank C. Hackett, the newly appointed chief operator of the Western Union Telegraph Co. at Cleveland, O., was born in Union City, Pa. He first entered the Western Union Telegraph service at Westfield, N. Y. During 1879 he worked for the Lake Shore & Michigan Southern R. R. Co. at different places, re-entering the service of the Western Union at Cleveland, O., in 1881, where he remained until 1883. He then went with the Missouri Pacific Railroad Co., being employed in their general offices at St. Louis, Mo., from 1883 until 1887, when he broke down in health. He was



FRANK C. HACKETT.

then transferred to Pueblo, Col., to which point the Missouri Pacific had then just extended its line. There he remained until the fall of 1887, when he went to Toledo, O., for the Western Union, first as operator, then wire chief, assistant chief operator, finally receiving the appointment for chief operator of the Toledo office October 1, 1900, relieving Mr. Charles O. Brigham, who retired from active telegraph service. His present appointment as chief operator of the Western Union at Cleveland, O., took effect July 10, 1901, and is a fitting recognition of satisfactory service rendered.

**ANOTHER ALASKA CABLE.**—Mr. George F. Porter, New York, manager for Mr. W. R. Brixey, manufacturer of Day's Kerite Cable, left Seattle, Wash., a few days since on a specially chartered steamer fitted up with cable appliances to lay 126 miles of submarine cable to connect Juneau, the new capital of Alaska, and Skagway. The cable laying will be under the supervision of Mr. Alex. Kline, the cable expert of the Western Union Telegraph Co., New York. This cable is being laid for the United States Government under order of Gen. A. W. Greeley, chief of the signal corps.

**LETTERS FROM OUR AGENTS.****LOUISVILLE, KY., POSTAL.**

It has not been a comfortable task handling the extra large amount of business this summer with the thermometer at times 108 to 110 above. We all await impatiently for the welcome "off" hour, and take an early departure.

Manager Cooke is enjoying a much needed vacation, Chief Operator O. W. Krider managing the affairs of the office during his absence.

Operator John L. Benninger is enjoying himself on a leave of absence, visiting relatives in the country.

Operators Jas. M. Carter, Jas. J. Clary and J. A. Cahoe have been on the sick list lately. During the absence of the latter, Branch Office Operator C. A. Cuneo did good service in the main office.

Mr. Robert Rogers, who worked recently in Memphis, Tenn., and Paducah, Ky., is with us again on the extra list.

Mr. Alvin Silverman has recently been promoted from branch manager to main office duty, James McDonald taking his place in the Produce district.

Mr. John T. Rogers, who worked here some time, but who is now located in Vincennes, Ind., was a recent visitor.

**PHILADELPHIA, PA., POSTAL.**

The pony wires leading to the various produce districts are kept humming. In order to facilitate the service Manager Len. Greiner, of the Vine street office, was furnished a direct wire to Augusta, Ga., while Manager Chas. Stump, of the Dock street office, kept four men on the jump and reports having experienced his heaviest spring season's business in all the many years he spent in that district.

Manager Stump, in company with Wire Chief Miles Dunn, of this office, will spend several weeks on a vacation tour to points down East.

Night Manager John A. McNichol is off on a vacation trip, his objective points being East Stroudsburg, Pa., and Buffalo, N. Y.

A fishing trip of a week's duration accomplished wonders for Frank Holloway, of the first New York bonus wire.

Two weeks off, on pay, with his employer's compliments, was the favor enjoyed by Mr. Albert Weiss, employed in a broker's office.

Mr. Chas. T. Koch has resigned, accepting a more lucrative position with the Western Union. Mr. W. C. Cornell, with this company at the Bourse branch office, has also gone with the Western Union for similar reasons. Mr. Cornell has been succeeded by Mr. Wm. Burt, Jr.

Mr. C. P. Monett has returned to New York city.

Owing to a severe attack of stomach trouble Mr. H. P. Ruffee was compelled to remain away several days.

The Cable wire is now manned by Mr. Jay A. Thomas. Mr. Courier, the regular operator, will not return before September 1.

By the transferring of Miss Bertha Sigg from Conshohocken, Pa., to Atlantic City, N. J., Mr. F. E. Greene, of the former place, is obliged to at-

tend to everything himself pending future arrangements.

Mr. William Hagan is now second Postal man in the telegraph department of the Philadelphia Record.

Much sadness and sympathy is expressed at the untimely death by consumption of Miss Ella Grady, of the Service Department.

The services of a quad chief at the Atlantic City main office have become so imperative that Mr. Merrick has been transferred there for the remainder of the season.

Mr. H. C. Wooden, of Washington, D. C., was a recent visitor, being shown around the city by Mr. Chas. Stump.

Has your arm played out? Is your sending laborious? Make your work a pleasure by using the Twentieth Century Key. Terms and information cheerfully furnished. Address Leo Miller, this office. (adv.)

#### NEW ORLEANS, LA., WESTERN UNION.

Mr. Geo. Carroll has gone to Franklin, La., and Mr. Geo. Johnston to Buffalo, N. Y. Mr. Frank Bell is spending a vacation at Madisonville, La.

Mr. Thomas Steene has been advanced to the Wheatstone force.

Cashier J. L. Adams recently paid a flying visit to Beaumont, Tex.

Mr. Samuel Garland has been assigned to Ball Park.

Manager J. R. Terhune was recently elected a member of the Southern Yacht Club and also a member of the Transportation Club. Of the latter organization he has been appointed a member of the governing committee. This is a new club composed of the most prominent transportation men in this section and bids fair to be one of the finest clubs of the South.

Mr. R. L. McKibbins' many friends will be glad to hear of his appointment as traveling passenger agent of the Southern Pacific, with headquarters at San Antonio, Tex.

Mr. O. C. Johnston has gone to Chicago, Ill.

Mr. W. A. Pillow is on a vacation trip to Virginia.

#### MONTREAL, QUE., CANADIAN PACIFIC.

Mr. Reginald Ross, of the Great Northwestern, has returned from a brief trip to Quebec.

Mr. Mike Sheridan, of the Great Northwestern, has accepted a position with the same company at Quebec.

Mr. W. W. Watts, of Toronto, Ont., has been added to the force.

Miss E. M. Rivers, of Dowd's broker office, has returned from Lake Memphremagog, where she enjoyed a two weeks' sojourn.

Much sympathy was felt for Mr. J. A. Fortier, of the Canadian Pacific office, on the death of his infant son, July 31.

Mr. W. G. Medley has returned from Sudbury, Ont., where he had been for a few weeks relieving.

Mr. P. J. Ryan, having accompanied his family to Magog, where they will spend the summer months, has returned after a brief absence.

Some of the men are disappointed at not being able to secure substitutes in order that they may take a vacation.

Mr. O'Sullivan, of the receiving department, is absent on a vacation.

Mr. R. L. Bamford, superintendent of telegraph of the New York Stock Exchange, accompanied with his wife, is in the city. He is a guest of his brother, James P. Bamford. They will also visit Valcartier, Quebec, before returning to New York.

A grand old time is anticipated here next month, when the Old-Time Telegraphers meet. There are quite a number of old-timers in this city, and friendly greetings will be the order of the day when the visitors reach here.

#### DENVER, COL., WESTERN UNION.

Mr. F. L. Carswell has gone to Manitou as manager during the busy season. Miss Stagg, of Omaha, is spending her vacation with the Western Union, Denver. Miss Ada Guernsey spent a month at Salt Lake and other points. Assistant Chief Operator J. E. Jenkins has returned from the Buffalo Exposition, having been absent a month. Miss McChesney spent her vacation in the mountains of Colorado. Manager Altherger left yesterday for the San Juan country to be absent for some time. Arrivals: A. R. Zimmerman, Messrs. Parks and Gibson, from El Paso; F. A. White, Salt Lake; Mr. Fleming, city; W. H. Curtis, from Trail, B. C.; E. E. Evans, Chicago; C. F. Keil, St. Louis; Mr. Powell, from the Postal, St. Louis; Thomas McCabe, Western Union, Burlington, Iowa; Mr. Pullivan, Western Union, Omaha; Mr. McConaha, Logansport, Ind.

#### KANSAS CITY, MO., WESTERN UNION.

Mr. Ray F. Finley has shaken the Kansas City dust from off his feet and gone to Maumee, O., where he has entered the employ of the Long Distance Telephone Company as assistant wire chief. He is a son of Mr. Chas. H. Finley, assistant chief operator of Chicago, Ill., Western Union.

Mr. A. R. Pippitt, night quad chief, is off for a two weeks' visit with relatives and friends in Texarkana, Ark.

Mr. Harry Bristol, for a long time one of our split herry force, has gone to St. Louis, Mo., to work for the same company.

Mr. John J. Shelly, Miss Nellie Miller and Miss Lulu Lentz are all back at work after reveling in the fresh air and sunshine of the altitudes of Colorado.

On the morning of July 22 came the announcement of the death of Miss Florence A. Thompson, and although not entirely unexpected, the news proved quite a shock to her former associates and was received with the utmost regret. She had worked in this office continuously for the past twelve years, was an unusually bright young lady and possessed of all the higher and most refined traits of womanliness and Christian character and will be sadly missed among us.

Mr. Bert. Stump resigned to take effect August 1. He goes to Pueblo, Col., as manager of the Postal Telegraph Company's office. As he has had

ten years' experience in like capacity, we know that that company will have no cause for regret for having secured his services.

Of the late arrivals, Wm. H. Heysler, Chas. H. Doyle, I. L. Printz, Geo. M. Riggan and Oliver C. Cook have been assigned to split tricks; and Jas. M. Angell, A. L. Shipman, A. R. Young, W. C. Hill, H. W. Breitenstein, J. W. Reilly, A. L. Stock, Wm. H. Meacham, Wm. H. Peacock and Hattie E. Daniels, on extra list.

#### ST. LOUIS, MO., WESTERN UNION.

Mr. and Mrs. Geo. W. Brownson, of Kansas City, Mo., visited us July 27.

Mr. Geo. M. Hardy, our night counter clerk, left for an eastern trip July 11. His first stop will be Buffalo, where he intends spending a week, thence to New York.

A very enjoyable and successful event was the lawn party given by Mr. Joseph Barry, July 13. Among those present were Misses Etta Osterman, Annie Shevlin, Elizabeth H. Tanner, Viola Hart, Bertha Keller, Jeanette Carpenter, Susie Bland, Sarah Cunningham, Lottie Wise, Grace Quehl, Deall Pipe, Mattie Ketcham, Bertha Black and Agnes Moore; Messrs. Joseph Barry, Thomas Gibney, James Wilson, Raphael Johnson, Moe Frankel, Daly Knapp, Henry VanDam, Wm. O'Neil, Samuel Bland, James Black, Percy Carpenter, John Cunningham, William Covington, James Moore and John Billings; Dr. and Mrs. H. B. Lida, Mr. and Mrs. A. B. Franklin, Capt. and Mrs. A. H. Smith.

Mr. B. F. Ramsay, manager of the Western Union at Tipton, Ind., was a recent visitor. He expects to visit Little Rock, Ark., and Denver, Col.

Miss Constance Brooks, a sister of Miss Portia M. Brooks, was chosen as the most popular lady stenographer of St. Louis, and left for a visit to the Buffalo, N. Y., Exposition, July 22, as a result of a vote contest held under the auspices of one of the St. Louis evening papers.

Mrs. Annie Cassidy and her daughter Agnes, left recently for a visit of several weeks at Chicago.

Mr. Jas. B. Dillon, traffic chief at Louisville, Ky., spent several days of his vacation in St. Louis the latter part of July; from here he went to Waukesha, Wis.

Mr. and Mrs. Wm. Schroeder spent a week at Eureka Springs, Ark., the latter part of July. Mr. Schroeder has charge of the City News Department. Mr. Sol. Ure was in charge during Mr. Schroeder's absence.

Mr. J. E. Johnson, night chief operator at Houston, Tex., while on his way recently to Buffalo, N. Y., spent several days here.

Business is exceptionally good and there is a premium on operators.

The latest is to date your letters "1903" instead of "St. Louis, Mo."

#### CHICAGO, ILL., POSTAL.

Messrs. E. P. Whitford, Ira Adkins, C. E. Rollins and J. R. Sullivan represented this company at The Onwentsia Golf Club, at Lake Forest, Ill., several days lately.

Mr. J. N. Swift was handled very roughly by

two men on the way home the other night and was relieved of a few valuables, but the next day he met the two guilty parties and at once took steps to have them taken care of. They are now in safe quarters.

Mr. C. W. Potter has recently returned from a ten days' vacation; he was relieved by Mr. B. C. Elder as night chief operator.

Traffic Chief George Durand returned recently from his vacation. Division Chief P. F. Miller was away last week.

Mr. Arthur Lassman has been appointed regular at The Associated Press, vice "Dock" Allen, resigned.

Mr. Newall Swift, of New York bonus wire, nights, has recently composed the words and music for a home song which he has entitled "Lauralee," and has dedicated it to his three-year-old daughter by the same name. He expects that it will be through the press this week; when it does, Mr. Swift desires to introduce the work among his friends and brother telegraphers.

The baseball teams at the Board of Trade Postal office have just played their sixth game, the last one resulting in a tie for the season, each team having won three games each.

Mr. Henry Paxton has returned from an extended visit in Mississippi.

Departures: Miss Hahn to the Western Union; Mr. Bowman to St. Louis; Mrs. Thiedie to the Western Union; Mr. Stryker to Bartlett Fraser; Mrs. Assmussen to Western Union; Mr. Uhel to New York, and Jerry Murphy.

Arrivals: Messrs. T. M. Schnell, Hyale, Paxton, Garfield, McPherson, Lowe, Brady, Holub, Lancaster, Knapp, Ward, Miller, Strong, Whiton, Townsend and Errett.

#### CHICAGO, ILL., WESTERN UNION.

Manager I. H. Carpenter, of Janesville, Wis., who has been sojourning among us for the past few months, has returned to his old position as manager. Mr. Carpenter is well known and liked by all here. Mrs. Carpenter has just recovered

#### Deafness Cannot be Cured.

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube is inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

Hall's Family Pills are the best.

from a serious illness, which necessitated a painful operation.

We are pleased to hear of the promotion of George Flood as operator from chief check, which trust he held with the utmost integrity.

Quite a while ago a party of some gilt edged operators started for the Pacific Coast to accept positions offered by the Western Union to operate some new lines which had been erected. But their stay was of short duration. Oscar Dogge, who was one of the party, and has just returned, reports that a more homesick lot of Chicago boys never left this good old town, and we look for the eventual return of all.

Mr. Burdick has been away on sick leave.

Mr. C. R. Copeland has returned from a trip in the mountains of Colorado.

Dr. Brand has also returned from a tour among the mountains of the West.

Another quiet marriage was performed at Hancock, Mich., July 27. The principals were F. J. Spickler and Miss Nellie Blackwood.

A section of the bookkeeping department in this office was cut off and converted into a neat room in which is comfortably housed the Buckingham department.

Mr. John O'Brien, chief of the Wheatstone, is visiting in Danville, Ill.

#### NEW YORK, WESTERN UNION.

Martin J. Dixen, an old telegrapher, well known in telegraph circles, has taken a lease of the Third Avenue Theater, New York, and opened the regular season August 10 with the telegraph play, "The Limited Mail," written by Elmer E. Vance, also a telegrapher. Friday evening, August 16, will be known as "telegraphers' night," when a representative telegraphic audience is expected to be present.

Mr. Thos. Brennan, assistant manager, has returned to the office after spending a pleasant vacation on Long Island.

Mr. A. E. Sink, manager of the operating department, is absent on a brief vacation.

Mr. J. A. Osborne, an operator at 195 Broadway up to 1890, when he went to Buffalo to enter outside business, died at that point on July 28.

Oscar A. Brown, one of the old-time engineers of the building, died August 7.

The mother of Mr. John F. Pender died August 4.

Two new cabinets containing thirty-two apartments for typewriters have been placed in the eastern division for the benefit of ladies and those who are unable to carry their "mills" downstairs.

The operators who were at Pittsfield, Mass., sending report of the Fosburg trial, comment favorably upon the hustling qualities of Manager J. A. Prentice. Nearly 500,000 words were sent by his small force in ten days.

Appointments to Waiting List: H. Fraser, A. B. Palmer, John L. Boyle.

Resigned: W. W. Walsh, J. W. Loughlin, J. W. Riley, H. H. Heard.

H. N. Babcock has gone with the True American, Trenton, N. J.

Jesse Alexander has resigned from the regular force and gone on broker list force.

On Vacation: Geo. W. Patterson, W. A. McAllister, J. P. W. Mitchell, Frank D. Murphy, Daniel E. Pike, W. A. Platt.

Mr. J. J. Hope is at Saratoga helping out at the race track. M. J. Kenna is also at the Springs, as well as M. J. Fitzpatrick, who is a guest of one of the prominent citizens.

Mr. M. F. Garrett, our efficient all-round mechanic, accompanied by his wife, is doing the Pan-American Exposition.

Sick List: Perry Irish, John Rathbone and H. W. Sauer.

Mr. George Worzel is sick and appendicitis is feared, trouble for which he had an operation a few years ago.

Robert Black Emerson, for many years an operator for the New York Herald on first Associated Press wire, died of pneumonia in Brooklyn, N. Y., on July 17. Mr. and Mrs. John Seymour, Mr. and Mrs. John Mitchell, Mr. and Mrs. P. H. Flynn, Mr. Wm. McKiernan and Mr. J. W. McLaren attended the funeral.

The sympathy of all is extended to Mr. Theo. B. Fullon, of the Philadelphia Printer, whose wife died August 12. Interment was in Philadelphia.

Mrs. C. A. Hastings-Mauer, of this office, has sufficiently recovered to be removed to Easton, Pa., where she will remain for a few months.

All popular music at less than half price. "Utopian Waltzes," "Whirlwind March," "Ben Hur Chariot Race," "Belle of Manhattan" March and Two-Step, "When You Were Sweet Sixteen," "My Old Virginia Home," "Left On the Battlefield," "Dolly Gray," "The Sweetheart That I Loved In Boyhood Days," "Spider and Fly," 18 cents each. "Palms," "Popular Gems," "Lang's Flower Song," "Calvary," "Rusticana," 10 cents each. Pianos—all prices—sold \$1.00 per week. B. L. Brannan, 195 Broadway, New York. (Adv.)

Artistic and mechanical drawing by J. B. Barrett, 195 Broadway, New York. (Adv.)

#### NEW YORK, POSTAL.

Assistant Manager J. F. Skirrow has returned from a vacation and looks as if he had thoroughly enjoyed it.

City Night Chief George Blank and Messrs. J. B. and Irving Roloson are on duty again after vacation absences.

Mr. T. B. Goodwin, after a long absence, is back again and has been assigned to the Chicago bonus wire.

Mr. G. O. Heath has been transferred to the Produce Exchange.

Messrs. C. A. Moore, Theo. F. Taylor and T. G. Williams have been transferred from night to day force.

D. J. Ellington and J. J. Horner have resigned and left for the West.

Mr. Victor Benelisha, formerly of the Mail and Express Postal force, and more recently with a downtown broker, has returned and been assigned to the Western division.



Mr. H. L. Linder is still absent on account of illness.

Mr. J. B. Rex, night wire chief, south and west, is absent on vacation.

The 20th Century Key is steadily gaining favor with the force, quite a number of them being in use. As a relief key it is proving invaluable, improving not only the grip on the regulation key but restoring loss of grip from using a pen.

#### **Dots and Dashes on the Theatrical Stage.**

Those who have seen the play of "Secret Service" are familiar with the important role which the telegraphic key and sounder play in this story of the tangled heart-strings of a northern spy and a southern girl.

One day before the play had been put in rehearsal it occurred to Mr. Gillette, the manager, that there must be a great number of people in New York city who could read the dots and dashes of the telegraphic code. Communication with the managers of the Western Union Telegraph and the Postal Telegraph-Cable companies and The Associated Press revealed the fact that by conservative estimates there were between five and six thousand people on Manhattan Island who were making a livelihood by manipulating the dainty dots and dashes of the Morse alphabet. He figured that, including operators temporarily out of work, students in schools of telegraphy and those who at some former time had acquired practical knowledge of the key and sounder, the total would probably reach 10,000.

"Now, that's a nice proposition," he said to himself. "I wonder what percentage of that 10,000 would come to see 'Secret Service.' Two or three of the lithographs that Alf. Haymann is getting up for the play picture the telegraph scene, and if by any chance the play makes a hit, I should imagine those 10,000 operators would naturally be attracted in pretty good force."

By this sort of mental route it didn't take long to reach the conclusion that it was artistically and commercially necessary to have "real" dots and dashes on the stage in the new war play. Joseph Humphreys, who, as general stage manager for Charles Frohman, has much to do with engaging actors, was notified, and immediately a search was instituted for an actor who was also a telegraph operator, to play the part of Lieutenant Forey, who sends and receives nine-tenths of the telegraphic communication in the play. Meanwhile Mr. Gillette himself set apart two hours every afternoon for rehearsing the correct dotting and dashing of the fraction of a message which he has to send. An old telegrapher out of a job was also engaged to stay behind the scenes and send the dispatches and calls which are supposed to come from "the front."

It was this old telegrapher who made all the trouble—or fun, whichever it was.

The play was finally produced and everything moved along beautifully until the latter part of the first week. The telegraph scene is in the third act. During the act people on the stage and those who were near it in the audience noticed that Lieutenant

Forey, the chief operator, seemed convulsed with laughter. Meantime one of the men who had come out into the lobby after the act to smoke a cigarette went to the box office window.

"Great show you are giving in there," he said; "but I guess if Mr. Gillette and the company and the audience knew what I do there'd be a riot in there."

"What? What's that? What do you mean?" asked the treasurer.

"Oh, I'm a telegraph operator myself, that's all, and I was able to read the messages that were received over the wires. They were corks, I tell you."

"They were, eh?"

"Yes. For instance, you know that message that comes in 'for the Secretary of War, marked important?' Well, this is what was in it," and the man took an envelope out of his pocket and read:

"'Hello Sec., old boy. Hope this is hot enough for you.'

"Then a message comes in and the operator gives it to a messenger and says:

"'For the President, marked private. Hurry over to his house with it.' Now, you'd imagine there was something vital in that dispatch, wouldn't you? Well, here it is: 'Say, Jeff, you'll be shy of operators over here if this heat keeps up. Hotter'n the devil, ain't it?' Then after a while, you know, Mr. Gillette comes on as Captain Thorne. At a certain opportune point the little ticker opens operations again, and Captain Thorne announces that it is a message from Adjutant-General Chesney. The audience, you understand, has been worked up to the belief that this message is of absolutely the utmost value in the important matter of saving the hero's life. And while the audience held its breath I held my sides, for this was the purport of the redoubtable General Chesney's weighty message: 'Oh, Lord, how hot! Say, Captain Thorne, smoke up! Let's finish this act quick. It's as hot as (you know) in this stuffy hole I'm in. If there is any other operator in the audience he can have my job.'"

When Mr. Gillette was informed of this circumstance next morning, he said to the stage manager: "Inform your friend, the old telegrapher, that in diplomatic language he is persona non grata. I'll be hanged if I am going to be called names by my realistic dot-and-dash man just for the sake of pleasing the telegraph operators who happen to be in the audience. No, by Jove! We'll have the messages sent in by the stage carpenter or the property man. They know more about telegraph poles than they do about dots and dashes, and I guess our reputations will be safe in their hands."

And this has been the method of procedure in the telegraph scene of "Secret Service" ever since.

Gaelic by Telegraph.—In connection with the opening recently of the Letterkenny Cathedral, a great amount of Irish matter, says the Telegraph Chronicle, of London, England, written in Irish characters was handed in at the local telegraph office for transmission to the Dublin press.

### Courtship by Wire.

A telegraphers' romance which had its beginning in Massachusetts six years ago will end in a Rhode Island wedding September 2.

A young lady operator in a Massachusetts town has been wooed and won by a train dispatcher of the Consolidated Railroad after a long courtship by wire. The lady was the only woman on the circuit, and her messages, always clear and sharp and business-like, soon made her a general favorite with a dozen other operators, all of whom introduced themselves by wire, and between dispatching trains made bids for her favor.

They met with only indifference until the train dispatcher, who was stationed in Providence, began to exchange confidences with the long operator at the office where the young lady was employed. He did not know his friend at the other end of the wire was a woman, and his uniform courtesy appealed to her.

After more than five years of this long distance acquaintance, photographs were exchanged, and the young train dispatcher was promoted to the Worcester division. He lost no time in calling upon the young lady, and she has just tendered her resignation, to take effect next month.

### A Plea for Postal Telegraphy.

(Contributed.)

One of the questions bound to come to the front before many years is that of government ownership of telegraph lines. Many thoughtful persons oppose any step in the direction of governmental ownership of public utilities on the ground that it tends toward socialism. But there are two safe rules to apply in testing the desirability and defensibility of public ownership. First, is the utility one of the highest public necessity, and is it of general and universal use? Second, is it one in which the operating expense and the number of employees necessarily engaged are small as compared with the amount of capital needful for plant and outfit?

No one, not an extremist, will deny the truth of the first proposition. The government ought not to engage in any business of local or sectional nature. Unless the utility is one in which all the people are interested, and which is the servant of everybody, government control thereof cannot be justified.

The force of the second proposition lies in the tendency to chicanery and political machination in proportion to the complexity of the business or utility under consideration. The government ought not to multiply offices and jobs unnecessarily. The fewer officeholders possible compatible with the

proper conduct of the public business the better. The government is in a position to hire large sums of money at lower rates of interest than any other business concern. Hence it can operate extensive public affairs with a smaller interest account than private individuals or private corporations.

The telegraph system of the country fits more exactly to these considerations than any other, except the mail service. Every person is liable to use the telegraph. And he should be at liberty to reach every other person in the country with this agency. It is a utility of the most general application.

Again, in proportion to the capital invested, it is operated by a very small number of employees. It fits into the mail service perfectly, and is properly a part of that agency. The government could therefore operate it with comparatively small expense and that by adding a very small number of officers and clerks to the government pay roll. The investment would, of course, be large, but the returns would be handsome and would in time pay up the loan required to acquire the plant.

Government ownership of the telegraph is bound to come. It has come in England, Germany, France and in other countries and works successfully, and will come and will work successfully in this country.

### Telegraph Line to Dawson.

Direct communication has been established by telegraph between Ottawa and Dawson City. The several sections of the line which will in the near future be finished into a complete system are from Ashcroft to Quesnel, 220 miles; from Quesnel to Hazelton, 400 miles; Hazelton to Telegraph Creek, 350 miles, and 570 miles from Atlin to Dawson, making in all 1,754 miles of line. The south terminus of the line is Ashcroft, and Vancouver messages will be accepted from there.

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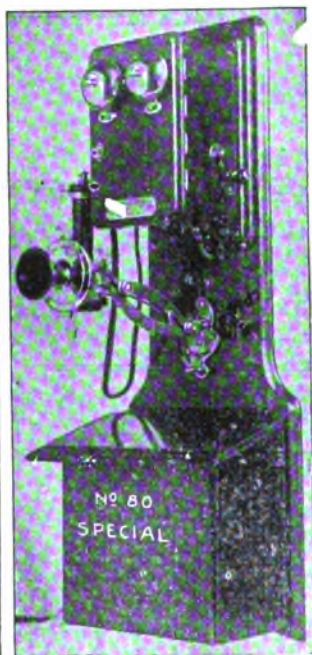
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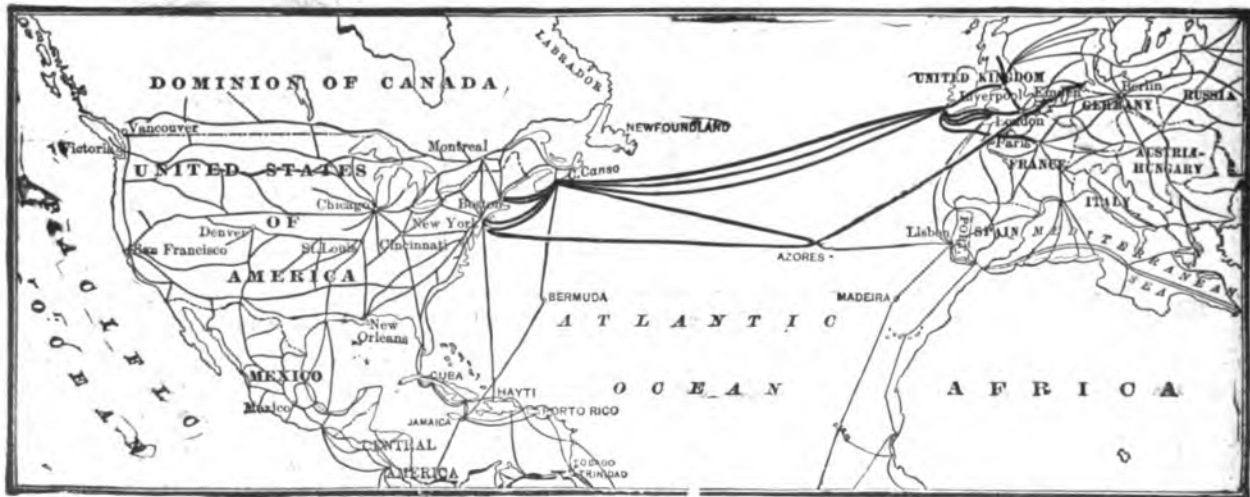


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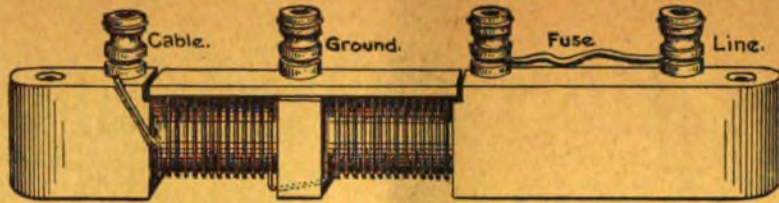


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