

FEBRUARY, 1939

LISTEN



A 4-Page Advertisement of the Radio Corporation of America

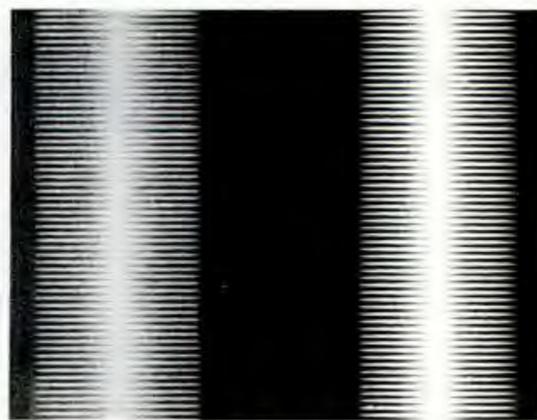
No. 19



TWELVE MILLION OF YOU A DAY

You enjoy movies more because of radio. Research in RCA Laboratories has been, and continues to be, a big factor in creating finer sound recording and reproduction for motion pictures. Radio helps theatre owners sell 85 million tickets a week. Radio helps make movies so interesting that annual attendance in the United States equals twice the population of the world. When you go to the movies look for RCA Photophone plaque—the sign of the best in sound reproduction.

RADIO HELPS HOLLYWOOD TALK



Why ultra-violet light makes better sound track is shown by above magnified photo of sound on film. The sound track at left was recorded by white light, that at right by ultra-violet light. Note how sharp in outline are the white and black areas when ultra-violet is used. Any distortion in the shape of the sound tracks distorts the resulting sound. Hence RCA Laboratories performed notable service to movie goers by perfecting ultra-violet recording.

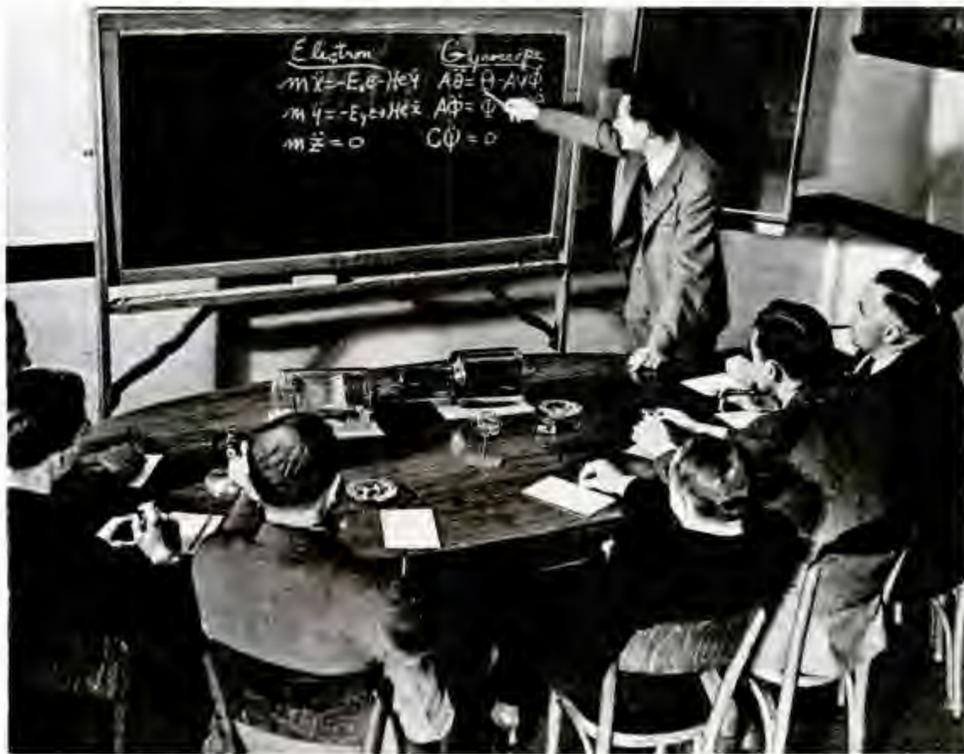
The strip running from top to bottom at left of this column is reproduction of typical sound track as it appears on motion picture film, enlarged about three times.



NBC at Motion Picture Capital—The new NBC studio in Hollywood covers almost 150,000 square feet of ground. From this great building the Red and Blue Networks bring to millions of listeners the voices of the many motion picture players whose abilities contribute so greatly to the interest of leading radio shows.

RADIO'S SERVICE TO MOTION PICTURES

RCA LABORATORIES BRING LISTENERS VOICES OF HOLLYWOOD GLAMOR GIRLS



Key men of RCA Laboratories study electron motion. No one has ever seen an electron, but motions of electrons are an important consideration in the design of radio tubes. In scene above, at RCA Tube Laboratories, Harrison, N. J., a group of research men are studying equations showing similarities in motion of electrons and the gyroscope. Many types of RCA tubes are used in recording and reproducing motion picture sound.

MUCH is written about the glamor girls of Hollywood, about masculine stars, about the skill of directors. Few movie goers realize that the reproduction of voices and the whole range of sound that makes pictures live—is a laboratory product. Because the recording and reproduction of sound involves so many principles which have grown out of radio, RCA Laboratories have long been the scene of outstanding research into motion picture sound. This work is closely connected with research and actual practice in making Victor Records and operating the National Broadcasting Company networks.

Among the great motion picture ideas that have been introduced to the industry through RCA Laboratories, one of the most important is the use of ultra-violet light for "writing" the sound track on the film. These light rays, invisible to the human eye, impress on film the most sharply defined image yet attained. Hence, ultra-violet light recording used by RCA Photophone marks a great advance in motion picture sound.

In spite of the amazing perfection of today's Photophone sound, search for better methods goes on unceasingly in RCA Laboratories.

If you have seen the great pictures of recent months you have heard Photophone sound. A few of these are Columbia's "You Can't Take It with You," Disney's "Snow White and the Seven Dwarfs," Twentieth Century-Fox's "Alexander's Ragtime Band," Republic's "Army Girl," RKO's "Gunga Din," Warner Brothers' "Angels with Dirty Faces," and in addition, the March of Time and Pathe News.

Now, LISTEN shows you something of how Photophone works.



Tube materials must be pure—This spectrograph is used to test purity of materials used in making RCA Radio Tubes. Volatilized in a carbon arc the material produces a spectrum which is photographed with aid of a quartz prism. The quantity of each element present is indicated in the resulting picture.



IT ALL STARTS AT THE "MIKE"

PHOTOS SHOW HOW INVISIBLE LIGHT

- 1 Recording sound through Directional "mike," one of the outstanding microphones developed by RCA Laboratories. RCA microphones are used by National Broadcasting Company in Radio City, in film and radio studios all over the world, and in making Victor Records.
- 2 The RCA Amplifier. Control engineer uses this device to magnify sound waves and pass their acoustical energy on in the form of electrical impulses which vary as do the sound waves.
- 3 In the Photophone Recorder a beam of light is reflected from a tiny mirror. The varying electrical impulses vibrate this mirror at the same frequency as each sound wave, sometimes 10,000 times a second. This vibrating light beam, focused on the sensitive film, traces a track which varies in shape to correspond to each movement of the mirror.
- 4 Invisible light writes sound on film. Diagram shows path of light from lamp, to mirror, to film. Just before it reaches film the light passes through filter that shuts out all but the invisible ultra-violet rays. The film, like that used in your own camera, is particularly sensitive to ultra-violet light. RCA Laboratories developed this ultra-violet recording method used by Photophone.

THE NEW YORK TIMES, FRIDAY, MAY 21, 1926.

Americans Don't Want Talking Movies; Prefer Silent Film Shows, Says Edison

Special to The New York Times.

ATLANTIC CITY, N. J., May 20.—Americans are not interested in talking movies; they prefer the restful quiet of the film theatre, and to reproduce the screen actor's talk would destroy the illusion.

This is the way it appears to Thomas A. Edison, who led the development of both the movie and the phonograph, the instruments it is now proposed to combine.

The seventy-nine-year-old inventor answered questions in the Hotel Tray-

more today by saying that "talking movies will not come into general commercial use as long as the American public continues to display its present attitude.

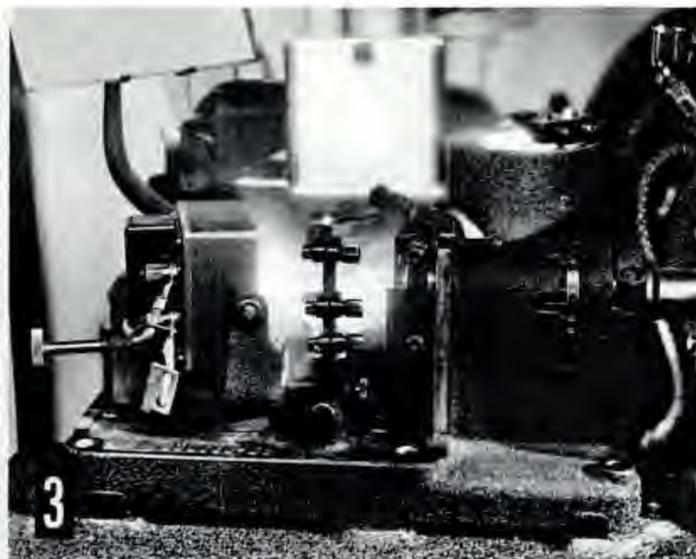
"Americans require a restful quiet in the moving picture theatre," he continued; "and for them talking on the lips of the figures on the screen destroys the illusion. Devices for projecting the film actor's speech can be perfected, but the idea is not practical. The stage is the place for the spoken word. The reactions of the American public up to now indicate the movies will not supersede it."

In early days of motion picture sound there were differences of opinion of its value. Clipping above shows that even so brilliant an inventor as the late Thomas A. Edison at one time expressed definite doubts as to the future of motion picture sound.



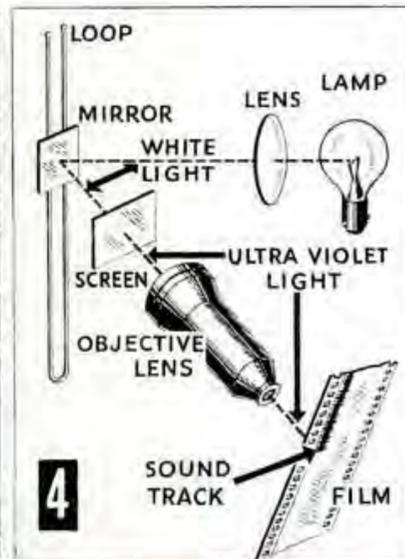
2

THE SOUND GETS A LIFT



3

10,000 TIMES A SECOND



4

INVISIBLE LIGHT



5

PRINTING THAT SPEAKS



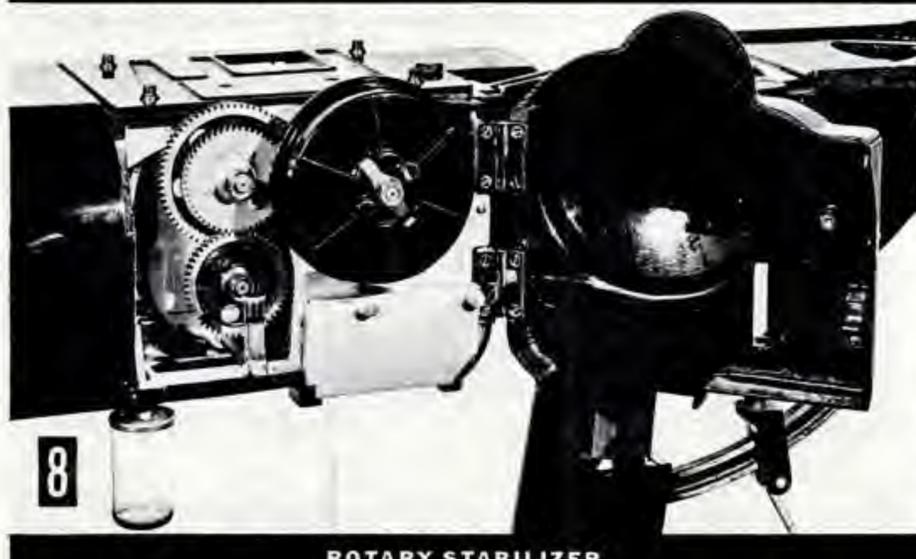
6

HE'S A GOOD MIXER



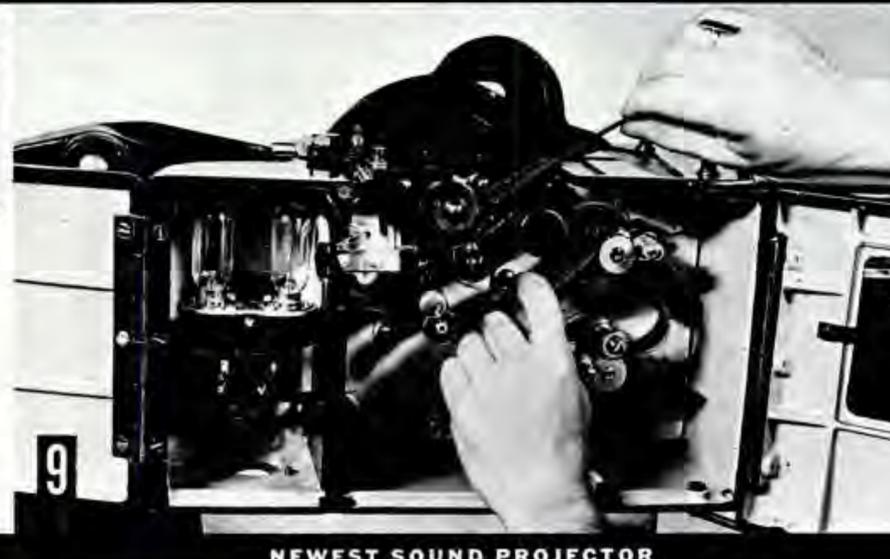
7

SOUND JOINS PICTURES



8

ROTARY STABILIZER



9

NEWEST SOUND PROJECTOR

"WRITES" ON MOVIE FILMS THE MUSIC YOU HEAR IN YOUR THEATRE

5 The sound track must be developed without distortion. So research extends to photographic developers. For good sound, it is vital that there be no distortion of the narrow sound track through slipping due to printing. Engineers have devised non-slip method of printing. Thus RCA Laboratories continue to contribute to finer sound reproduction for movie theatres.

6 With Photophone, the many kinds of sounds required in movies can be recorded at different places, and then "mixed"—that is, combined into one sound track, by playing back the various sounds and re-recording them simultaneously. The RCA Mixer shown in the picture will combine eight sound tracks into one, with any desired emphasis on any of the sounds.

7 The final printing of sound tracks on the same film with the pictured scenes is vitally important. RCA maintains men in New York and Hollywood who devote their entire time to helping film laboratories make the best possible prints.

8 The completed film is now ready for the theatre, where the sound reaches the audience through RCA Photophone Reproducing Equipment such as is in use in more than 5,000 theatres. To insure good sound the movement of the film must be at a perfectly constant speed. RCA engineers accomplish this by the unique and ingenious Rotary Stabilizer. This device and Photophone ultra-violet light recording, have both been awarded honors by the Academy of Motion Picture Arts and Sciences.

9 To bring you the sound from the film, the Photophone projector directs a beam of light through the sound track, and against a photo-electric cell. This cell is so sensitive to the slightest variation in light that it passes on the exact impulses which have traced the sound track. As a result the speaker diaphragm vibrates just as did the original microphone, and you hear exactly what the microphone heard. Thus the whole world of sound is reproduced by Photophone from a narrow band which Photophone recording traces on the edge of motion picture film.

RCA Manufacturing Company, Inc.
 R.C.A. Communications, Inc.

Radiophone Corporation of America
 National Broadcasting Company

RCA Institutes, Inc.

Only RCA Victor offers you the extra advantages of *RCA All the Way* Experience!



PUSH A BUTTON
there's your Station!

This splendid new RCA Victor Electric Tuning instrument is a value you'll find it difficult to duplicate! At an amazingly low price, it offers you such superb features as Electric Tuning, Victrola Button, Plug-in for Victrola Attachment, Super-Sight Streamlined Dial, Magic Eye, RCA Victor Metal Tubes, and a great many others. Its massive, beautiful cabinet will lend new charm to your home. Model 97K2. **\$75.00***



RCA Victor Little Nipper Model 9TX1 is a superheterodyne radio which comes in walnut finish, plastic cabinet with tan knobs and offers such features as five RCA Victor tubes, Electrodynamic Speaker, AC-DC operation, Built-in Antenna and Automatic Volume Control. All-time low price of **\$9.95***
Also available in a variety of other finishes . . . priced up to \$17.95*



RCA Victrola Model U-112 offers you Victor Record and radio entertainment at a sensationally low price! Has Feather-touch Crystal Pick-up and True Tracking Tone Arm and a radio with Automatic Volume Control, RCA Victor Metal Tubes, and other modern features. Price includes \$4.50 worth of any Victor or Bluebird Records you choose . . . a \$2.00 subscription to the Victor Record Review and membership in Victor Record Society. The **\$39.95*** price

RCA presents the Magic Key every Sunday, 2 to 3 P.M., E.S.T., on the NBC Blue Network.
For finer radio performance—RCA Victor Radio Tubes.
*Prices f.o.b. Camden, N.J., subject to change without notice.

That's why you'll enjoy an RCA Victor Electric Tuning Radio just as completely as you enjoy RCA Photophone Sound in the movies!

THE preceding pages of LISTEN have shown how RCA brings you the brilliant movie sound you enjoy in theatres today. In addition to the movies, RCA also plays a major role in broadcasting, through the National Broadcasting Company . . . in communications, through R.C.A. Communications . . . and in every other branch of the radio and sound business. And because the electronic engineers in RCA Laboratories apply to RCA Victor Radios all they learn in every phase of sound and radio, you get more for your money when you buy an RCA Victor.

The new RCA Victor Radios and Victrolas bring you more stations, more power, more convenience, more beauty of cabinet design. You get more pleasure—and more value. And you can prove all this to yourself by visiting your nearest RCA Victor dealer. See and hear these new sets. Match them in performance and in price against any others. And you, like millions of other smart buyers, will get an RCA Victor!

Attention!

Motion Picture Exhibitors!
There's a New Magic Voice of the Screen
—with Rotary Stabilizer
Plus Shock-Proof Drive!



This superb new Magic Voice of the Screen—alive with features that mean finer sound than you've ever before been able to offer—begins a brilliant, new era of movie entertainment! The famous Rotary Stabilizer has a "partner"—the new Shock-proof Drive—you're now assured greater constancy of film speed than ever! Details from your RCA Photophone representative.

RCA MANUFACTURING CO., INC., CAMDEN, N. J.
Please send me further information about the new RCA Photophone Magic Voice of the Screen.

Name _____
Theatre _____
Address _____
Seating Capacity _____



RCA Victor

A Service of the Radio Corporation of America