

*Edison Three-Wire System—Single-Phase.* The Edison three-wire system, extensively used in direct-current distribution, is commonly used in alternating-current distribution. Fig. 203 shows two transformers properly connected for supplying current to a three-wire system; and Fig. 204 shows two transformers improperly connected for supplying current to a three-wire system. In the proper connection, the middle secondary main *c* carries only the difference of the currents in the outside mains *a* and *b*; and in the improper connection, the current in the middle secondary main is the sum of the currents in the outside mains. The proper connection gives

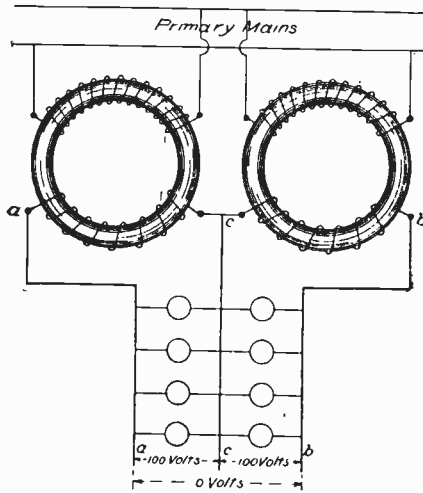


Fig. 204. Improper Transformer Connections to a Three-Wire System

double voltage between the outside secondary mains and the improper connection gives zero voltage between outside secondary mains.

The Edison three-wire system must not be confused with the two-phase and three-phase three-wire systems. The advantages of the Edison three-wire system when used for the distribution of single-phase alternating currents, are exactly the same as the advantages of this system when used for the distribution of direct currents, namely, a great saving in the copper required in the distributing mains. This saving, in general, amounts to five-eighths of the copper that would be required for a two-wire system using