

solid copper wires, all wires, both iron and copper, being carried on No. 42 glass insulators. At dead-ends, porcelain strain insulators, spaced about 32 in., are employed.

Within a year the ends of double track at both ends of the single-track territory from Bena to Tehachapi will be extended to the next siding as indicated by the

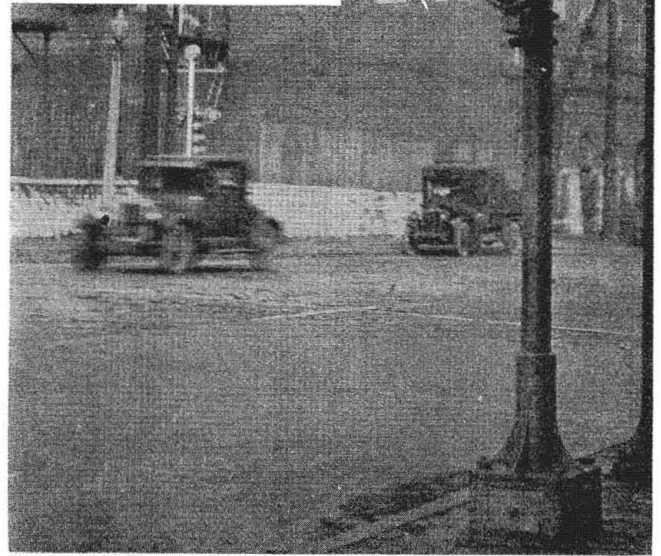
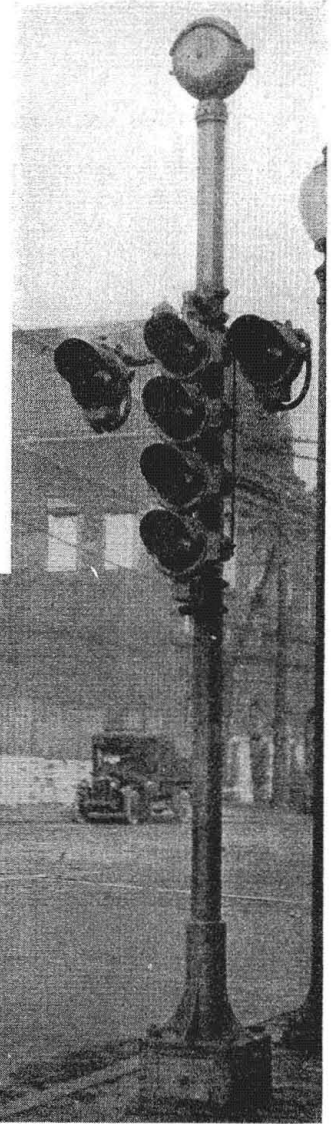
dashed lines on the condensed track plan. The end of double track at the west end will then be located at Ilimon. Similarly the end of double track at the east end will be at Cable. This will reduce the single-track mileage eight miles. It is also planned ultimately to control all of the remote power switches in this territory from a central point, thus eliminating train orders.

Automatic Crossing Signals Used in Congested District

THE Manufacturers Railway, a terminal company operating in the industrial area of St. Louis, Mo., has recently completed an installation of automatic flashing-light crossing signals at 11 street crossings. The traffic consists entirely of slow-speed switching movements into and out of various power houses, manufacturing plants and warehouses. The crossings were previously protected by crossing watchmen, on duty during the hours of switching. The desire on the part of the railroad to make a change in the type of protection was occasioned by the increasing number of accidents to automobiles on these crossings. Broadway is a heavily traveled street with a car line, while Seventh street is a boulevard with fast passenger automobile traffic. Traffic was so heavy on these streets that watchmen on the ground could not stop the automobiles when trains were approaching. In fact, one watchman was run over and killed by an automobile.

With the idea of providing better protection, the railroad secured permission from the city and state authorities to install flashing-light crossing signals with vertical "STOP" light units on Broadway, the installa-

Equipment and unique control circuits solve difficult problems on Manufacturers Railway in St. Louis — \$9,000 saved annually



The signals include, the Signal Section flasher lights, an illuminated "stop" sign and a bell



Color-light signals, designated as indicators are used for the information of the enginemen

tion being placed in service in June, 1927. These signals were controlled automatically by the track circuits extending about 200 ft. in each direction. These tracks are laid in the middle of Dorcas street and, therefore, many difficulties were encountered in bonding the joints and installing the insulated joints. During the first few months that this installation was in service, no accidents occurred, and after a thorough inspection the state and city authorities approved the installation. This approval was of considerable importance, because the ordinance permitting the railroad to operate over tracks in the street required that watchmen be on duty at the crossings. After the signals on Broadway had demonstrated the effectiveness of this type of protection, permission was granted by the city and state authorities to install signals at the remaining crossings as shown in the diagram.

