

6. The signals are definitely associated with the tracks over which they govern.

7. An indication is clearly given as to whether a switch is free to operate.

8. An indication is clearly given as to whether a switch is in correspondence with its control.

9. The location of trains is clearly indicated.

10. Briefly stated, all controls and indications are directly associated with the control board.

Rail-Contactor for High-Speed Trains

THE Peerless Manufacturing Corporation has developed a new rail contactor which is particularly adapted for use on roads where high-speed gas-electric cars and trains are operated.

The new contactor, which is called the Model-E, is actuated by the depression of spring plates placed under a rail just as the original Model-C Fusticlo rail contactor is operated. The principal change is in the selector mechanism which operates the contacts. The contacts of the new device operate more quickly, have a larger contact opening, and hold the contact selection for a longer period of time. The bearings for the operating shafts have also been improved by enclosing them to keep out grit and brine, and by providing a reservoir for the lub-

ricant. Other small improvements have also been incorporated in the new contactor to bring it up to a standard to meet modern demands.

All of the new features of the Model-E contactor are the result of research and tests conducted by the Peerless Manufacturing Corporation and suggestions from users of the Model C Fusticlo rail contactor. None of the new features were adopted until they had proved satisfactory by extended field tests.

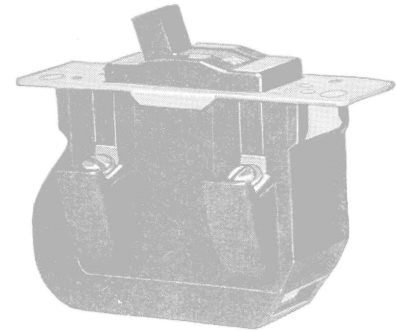
Like the Model-C contactor, it is made in two types, directional for starting on single track, and non-directional for stopping on single track or for starting and stopping on double track. Contacts for a single circuit are regularly furnished with the Model-E contactor contacts for two or three independent circuits may be applied to it, and will be furnished when so ordered. The contacts are furnished either normally open or normally closed.

Circuit Breaker

A PRIMARY circuit breaker for outlet-box mounting, which provides short-circuit and overload protection for 125-volt a-c. or d-c. circuits and can also be used as a switch control for branch circuits, has been announced by the General Electric Company's merchandise department, Bridgeport, Conn. The device eliminates the inconvenience of re-

placing blown fuses and prevents the user from fusing a circuit so that it can be loaded to a capacity beyond its ability to carry the load safely.

The breaker may be installed in a suitable standard square outlet box with a raised cover and brass plate. Thus mounted, its external appear-



Assembly for box mounting

ance closely resembles that of a flush tumbler switch and plate. It is also suitable for gang mounting. It has a sealed-in, rust-proof mechanism of the tamper-proof type which cannot be "locked" by the handle while the circuit is overloaded. Positive in action, it is not affected by vibration or shock.

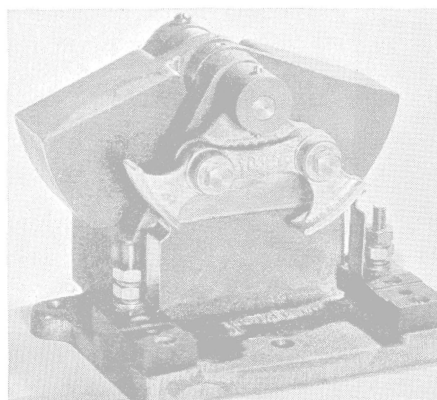
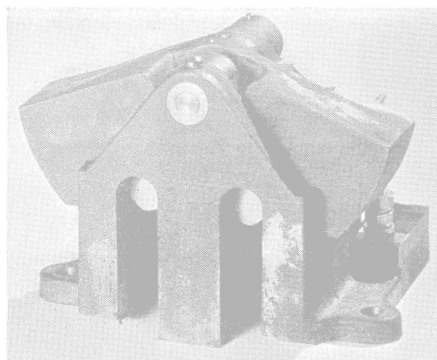
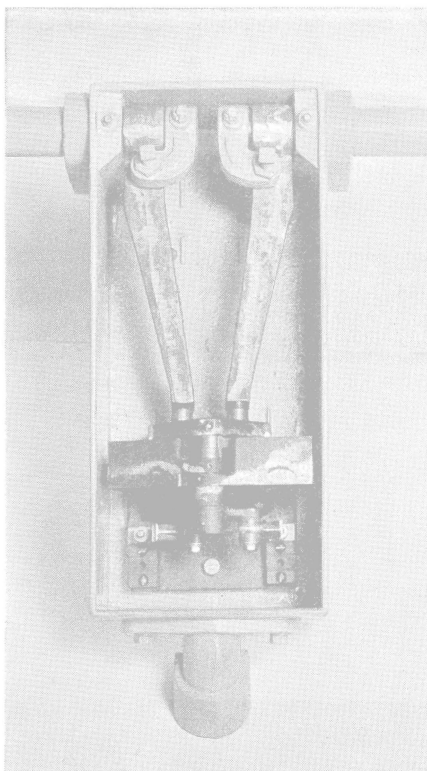
Improved Position-Light Signal

A NEW position-light signal, showing marked improvement from several standpoints—mechanical, optical, economic—and with many operating advantages, has been introduced by the Union Switch & Signal Company, Swissvale, Pa., and is designated its Style PL-2.

For simplicity of description, the new signal is compared with the company's previous model position-light signal. An optical comparison of the two units discloses that the new signal, with 8-volt, 5-watt lamp, has higher beam candlepower than the previous signal with 12-volt, 9.5-watt lamp. This greater beam candlepower is obtained not only on the axis, but also at all angles below and to each side of the axis.

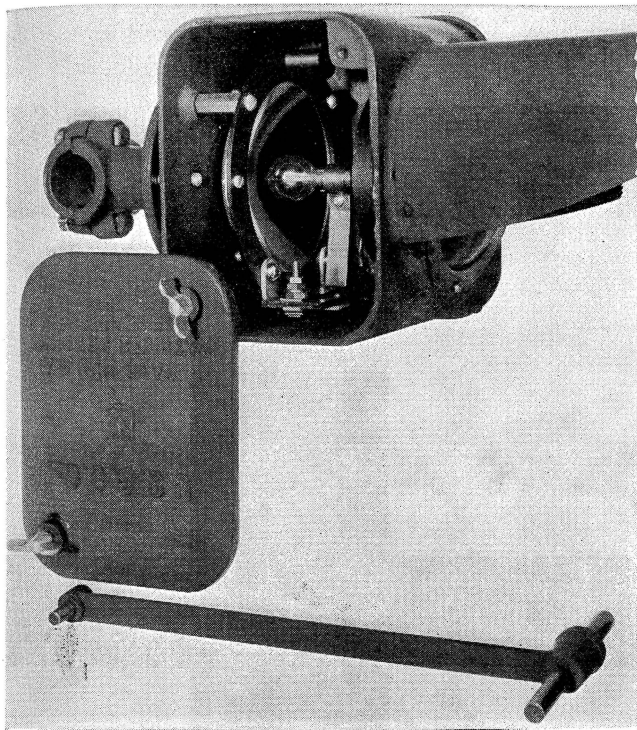
A mechanical comparison of the two units discloses the following: While the previous style signal had no sighting device and required not less than two men for at least two hours to aline properly in the field, each unit of the new signal is designed to accommodate a sighting tube, which permits one man to properly aline all units of one signal within half an hour.

All fittings for attachment to spider



Left: View down into controller. Right lower: Contact end of device

arm remain unchanged so that new units can replace previous units. The new signal unit includes a terminal box and hub casting with a modern bakelite terminal board having terminal posts moulded in. A new specially developed convex spread-light cover glass in Noviol yellow, inclined with top forward 15 degrees, to eliminate surface reflection, together with a spheritoric mirror unit, replaces the former inverted lens and conical cover glass.



PL-2 position-light signal with sighting device

The major advantages of the new PL-2 signal, with spheritoric mirror and using an eight-volt, five-watt lamp, are summarized as follows:

1. The new signal uses a lamp with an S-11 bulb and bayonet candelabra base, which is accurately based to 1/64-in. precision without special sleeve.

2. Lamps used in the new signal, because of the increased efficiency of the optical unit, can be operated at reduced voltage and wattage, thus increasing the lamp life and providing a considerable saving in renewals.

3. The new signal cuts power costs approximately in half.

4. With recommended voltage of 7.44 volts on the 8-volt, 5-watt lamp used, the new signal gives a beam candlepower much greater than that of the previous signal.

5. The spread-light cover glass used in the new unit, provides at least twice the horizontal spread obtained from the previous signal and thus provides much better indications for curved track.

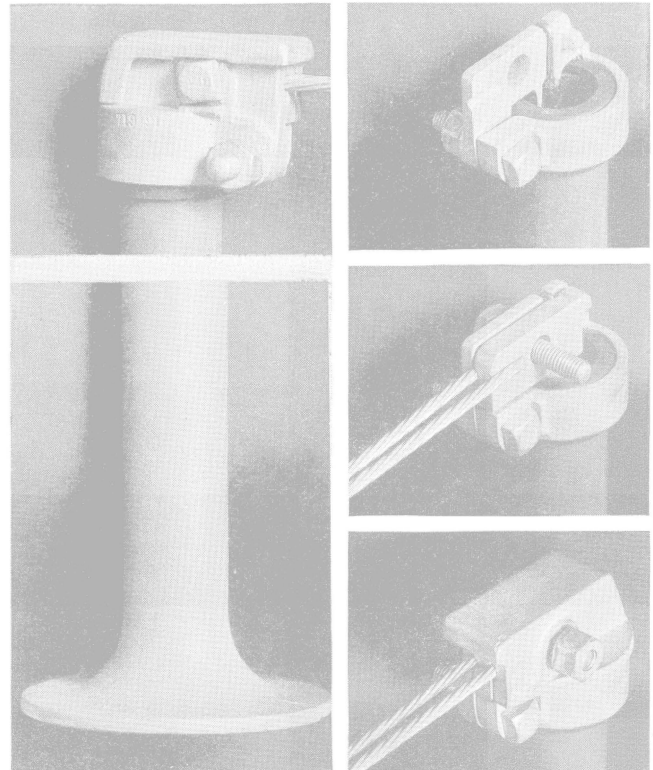
A New Style Bootleg

AN IMPROVED bootleg, of new design, which offers installation, operating and economical advantages, has been introduced by the Union Switch & Signal Company, Swissvale, Pa. The new-style bootleg represents this manufacturer's latest and most satisfactory development of a single bootleg and accommodates one No. 6, No. 8 or No. 9

arrangement requires less slack parkway wire than if the parkway wire had to be fastened in position before the head and cap were placed on the post.

2. The cap overlaps the bootleg head so as to prevent direct entrance of water. However, enough clearance is allowed for sufficient ventilation to prevent condensation inside the post.

3. The two bond wires and the parkway wire are securely clamped in grooves in a tinned cast brass plate. The one bolt which is used



Left: Assembled bootleg and, Right: Stages of assembly

parkway wire, and two stranded rail bond wires. Brass plates, each with different size grooves, are available to provide for various size bond wires.

The bootleg head and cap are malleable iron castings tinplated; the post is cast iron, painted with lead chromate; the plate between the head and cap is hard cast brass, tinned all over with hard solder; bolts and nuts are cadmium plated, double thickness, and the cup-shaped insulation bushing is molded rubber.

Some construction, installation and operating advantages, in addition to low initial cost, are:

1. Such slack parkway wire as is desired may be coiled in the post before the bootleg head is applied, and, after the head is applied, the parkway wire can be hooked loosely in its final position in the bootleg head before the cap is applied. This ar-

range for clamping the wire is so located that all of the wires must be securely clamped. In addition, the insulation of the parkway wire is clamped in a ribbed groove. The ribbed groove is so designed and located that although the clamped insulation is fastened securely to prevent vibration, it does not materially reduce the clamping pressure on the bare portion of the wires. It is not necessary to skin a long length of parkway wire. Only one bend is provided and that is only to hold the wire in position until clamped. Breakage at this point would not cause a failure because the clamp still retains the main portion.

4. The relatively small height of the bootleg head and cap assembly reduces its height above the ballast to a minimum and this, in addition to the smooth top surface and rounded corners, greatly reduces the