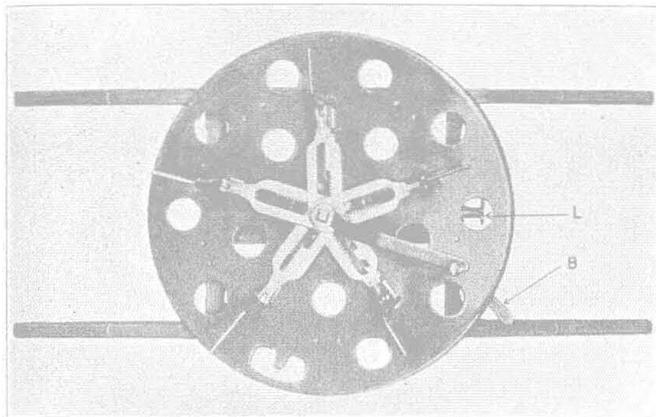


to which it has been pulled. A new and exclusive quick release feature is incorporated in Matthews slack pullers. When the entire take-up has been used, the wire is temporarily dead ended and the lock released. This permits the slack puller to be immediately extended to its maximum or any intervening length.

The Matthews slack puller is ruggedly constructed to withstand severe service. It is said that the great economy effected by its use, coupled with the relative ease and safety with which difficult jobs can be accomplished, make the device a necessary tool for



The Matthews adjustable reel has a metal table which can be grounded to protect men using it in the event that the conductor should accidentally come in contact with a live wire

any pole line work. The slack puller is now obtainable in two sizes, one of 3,000 lb. maximum and one of 10,000 lb. maximum, capacity.

Several distinctive features not found, it is said, in any other similar piece of equipment are incorporated in the Matthews adjustable reel. The claim is made that many railroads are buying wire (both for line and guys) on wooden reels, that could be bought cheaper in coils. While coils of wire are ordinarily hard to handle unless some type of reel is used, the Matthews adjustable reel makes it easier to handle wire in coils than on wooden reels. Economy is effected by the fact that wire can be purchased in coils as the cost of wooden reels and their incident freight charges can be saved. Wire stringing or pulling out can be greatly expedited with the adjustable reel as it is not necessary to pull wire down and then coil it up by hand as the pulling out and coiling on the reel can be done at the same time; therefore saving considerable time.

The Matthews adjustable reel affords safety to the reel attendant and to the other men working on the conductor being strung or pulled out due to the fact that the reel table is metal and can be grounded, thereby protecting the men should the conductor accidentally come in contact with a live wire.

The five arms can be quickly and easily contracted or expanded to fit the inside diameter of any coil of wire within its range. The revolving table is made of sheet steel reinforced by a turned over edge which prevents it from being bent out of shape. This edge also prevents the wire from getting caught under the table or cutting itself on the sharp edge. The reel is supplied with or without a brake, but the brake is recommended as it prevents racing when paying out wire. An exclusive feature in the form of four roller

bearings is provided. These roller bearings prevent the reel from catching on the frame or bending with unequal pressure on the sides of the table. The reel can be operated either in the horizontal or vertical position.

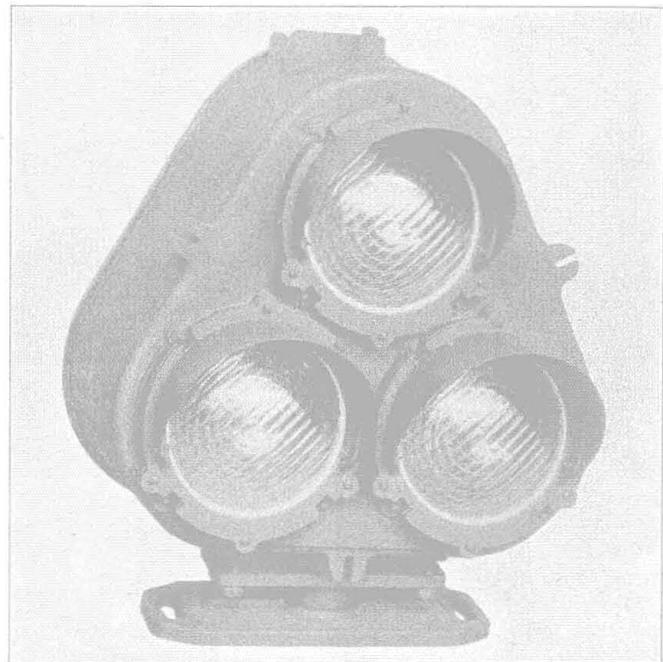
New Triangular Signal Unit

Produced by G. R. S. Co.

THE Type-L triangular signal unit, manufactured by the General Railway Signal Company, is of compact design, enabling the signal, when used as a dwarf, to be located between tracks without encroaching on standard clearance lines.

This signal unit takes doublet lens combinations, the outer lens being $8\frac{3}{8}$ in. in diameter, suitable for long range as a high signal or producing a strong indication as a dwarf signal. Deflecting cover glasses are used to give an upward close-up indication on dwarf signals. When required on high signals the same type of deflecting cover glass is used to give a horizontal spread either to the right or to the left.

By merely changing the method of mounting the case, the Type-L unit can be used for high or dwarf



Type-L triangular light signal unit is suitable for use as a high signal or dwarf signal

signals. When used as a dwarf signal an adjustable base is used permitting horizontal and vertical adjustment of the unit. When used as a high signal the case is mounted on a standard adjusting bracket which permits both horizontal and vertical adjustment. The case is deep so as to provide for the housing of individual lighting transformers when required.

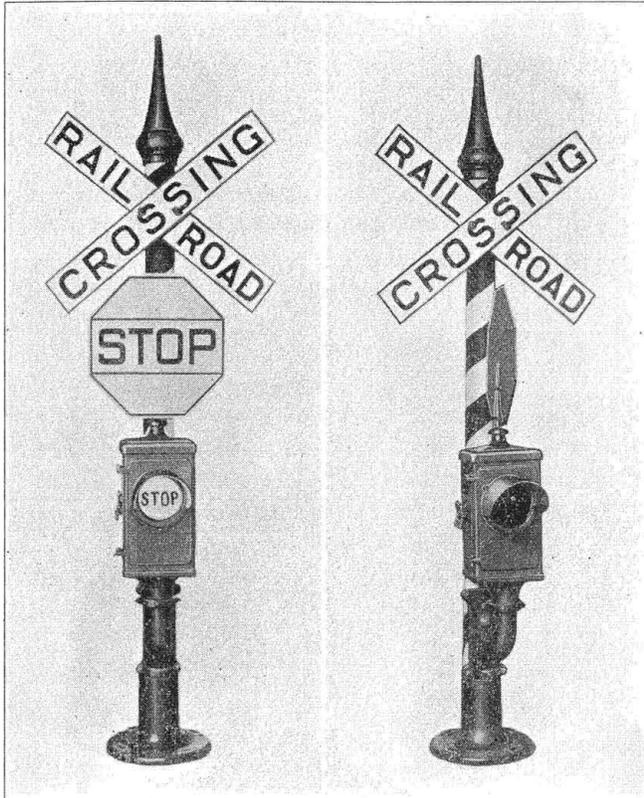
Rotating Stop Signal for Highway Grade Crossings

THE Griswold Safety Signal Company of Minneapolis, Minn., is marketing a new railroad crossing signal that may be installed in the center or at the side of a highway. The signal can be operated by a track circuit control scheme or by manual control and may be used as here illustrated with stand-

ard cross-arms or in connection with such equipment as may be already installed.

When a train enters the warning section the standard Stop sign (yellow with black letters) turns to face highway traffic. The red traffic signal flashes Stop and a bell, if desired, also rings. With the passing of the train these operations cease, the Stop sign returning 90 deg. to the other vertical position where it is not visible to approaching traffic. A floodlight can be used to illuminate the Stop sign, railroad cross-arms, etc., giving a positive indication of a railroad crossing, but both Stop signs indicate Stop only when a train is in the vicinity.

The mechanism which turns the Stop sign is an adaptation of that employed in the "American



Griswold stop sign and signal for highway grade crossings

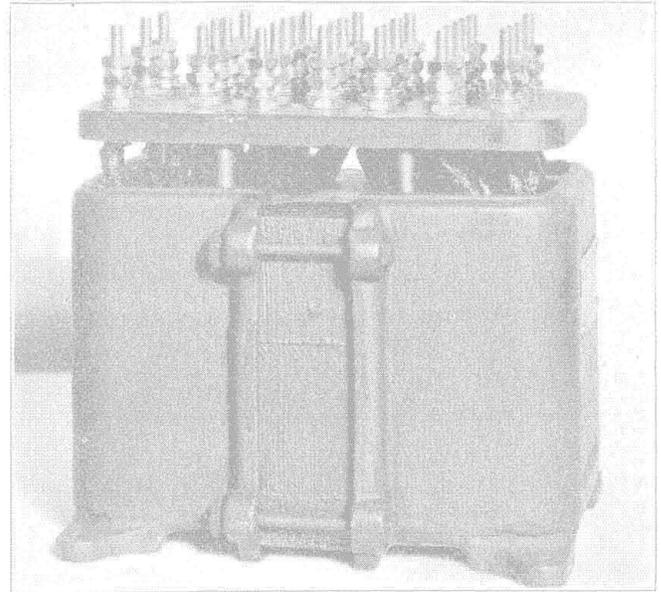
"Bobby" traffic signal used in Minneapolis, St. Paul and other cities. In the event of any failure of electric current or other unforeseen condition, the signal automatically goes to the Stop position. The mechanism is all housed in a weatherproof case under lock and key and cannot be tampered with. The Stop sign whether facing traffic or in reverse, is securely locked in that position and cannot be turned by hand or otherwise.

Signal Transformers Designed for Greater Economy and Flexibility

THE new Type-K transformer, manufactured by the General Railway Signal Company, is made for 60-cycle and 25-cycle operation and is arranged to charge simultaneously through Balkite rectifiers two lead storage batteries of one to seven cells each at any rate up to 2 amp. d-c. The terminal arrangement of each of the two charging windings is such that it is possible to obtain any voltage from $\frac{1}{4}$ volt to $27\frac{3}{4}$ volts in $\frac{1}{4}$ -volt steps, thus permitting a very close adjustment

of the charging current without the use of an adjustable resistance unit with its attendant loss of energy. In addition to the two charging windings, a third winding with a capacity of 75 volt-amp. and four taps is provided for the lighting of signal lamps.

The primary of this transformer is furnished with



G-R-S Type-K transformer developed for a-c. floating service, with Balkite rectifiers and provided with a separate winding for signal lighting

a 10 per cent tap to allow for a drop in the supply voltage. Furthermore, it is insulated to withstand a high potential test of 10,000 volts from primary to core and to secondary windings; and also a test of 5,000 volts between secondary windings and core. The core losses and exciting currents are unusually low. The overall dimensions are 7 in. wide by $8\frac{1}{2}$ in. long by 9 in. high and the weight is 34 lb. This transformer is also furnished with two charging windings only, or, in a smaller size, with but one charging winding.

Condensers for Prolonging Life of Contacts

SAVINGS in maintenance and operation of signal and relay contacts through elimination of arcing, are claimed when Potter condensers are used in parallel therewith. These small paper insulated condensers are manufactured for application to railway signaling devices by the Potter Manufacturing Company, North



Potter condenser with paper insulation for practically eliminating contact arcing

Chicago, Ill. Paper condensers with their exceptionally high resistance, with full absorption capacity provide the ideal in contact maintenance, due to the absence of the arcs which, if the condenser were not