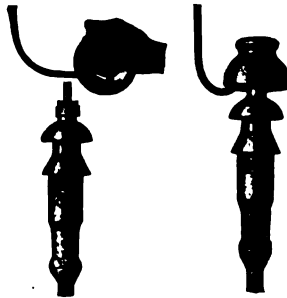


New Devices

NEW OUTDOOR CABLE TERMINAL

A new style of outdoor cable terminal known as type D. O. A. has recently been placed on the market by the Standard Underground Cable Co., Pittsburgh, Pa. It is of the protected disconnection style, all copper parts being covered by a porcelain hood, as shown in the illustration, a construction which makes possible the disconnection of the aerial extension wire even while the circuit is alive.

All the outdoor cable terminals made by this company are readily disconnected from the aerial conductor either by means of a set-screw, a cap-nut or turnbuckle stem. The stem of the new terminal is a modification of the regular cap-nut stem and has some additional advantages where frequent disconnection of the aerial circuit from the terminal is necessary. The new terminal, as well as the complete line of Standard outdoor cable terminals, is fully described in Bulletin No. 700-2, which has just been published and is now ready for distribution.



New Standard Cable Terminal

WIGWAG SIGNALS ON AN ELECTRIC LINE

The Aurora, Elgin & Chicago, operating a high speed, third rail system westward from Chicago, uses some special features in wigwag crossing signals, as shown in the installation at the Clintonville crossing on the Elgin branch, illustrated herewith.

The signal is controlled from short ramps located



Crossing Signal on Aurora, Elgin & Chicago

about 2,000 ft. each side of the crossing and is operated directly from the 600-volt trolley circuit without the use of batteries or resistances. The signal is mounted on a 12-ft. pole 4½ in. in diameter with a substantial base on a concrete foundation and consists of a Chicago electric flag of the disc type on a bracket at the top, a

6-in. crossing sign below the flag, a Chicago style F bell below the sign, a light box directly behind the bell, and a standard illuminated danger sign with 6-in. letters and ruby glass below this. The swinging disc has red lenses in its center, pointing in both directions along the highway, behind which are two incandescent lamps. The use of two lamps insures the illumination of these lenses at any time.

The light box behind the crossing sign is of iron with glass front, containing six incandescent lights, which are illuminated upon the approach of a train. This provides general illumination for the crossing and at the same time acts as the necessary resistance for some of the apparatus. A train approaching the crossing starts the disc swinging, lights the two lamps in the disc, operates the bell, illuminates the six white lights towards vehicular traffic and illuminates the danger sign with the ruby glass showing in both directions along the highway.

INSULATING TAPES AND THEIR APPLICATION*

TAPE used in electrical work may have two functions, electrical and mechanical. While it is usually necessary that it have insulating properties, its most important application is that of a binding material for holding parts together. For such an application the mechanical strength of the tape is really of principal importance. When used for insulating purposes its function is to increase the dielectric strength of the insulation between the parts which are separated. For instance, an air-gap of 0.030 in. between needle points will break down at about 1,000 volts, while three thicknesses of varnished cambric with a total thickness of 0.030 in. will break down at about 20,000 volts. The tape also provides mechanical separation of the parts which are insulated, not only keeping them apart, but preventing them from being short-circuited by conducting material coming between them.

Cotton is the most widely used material for tape, as it has good mechanical properties and is less expensive than other materials. It is strong, tough and flexible. It is somewhat hygroscopic, and when used as insulation is usually treated with varnish or with an impregnating material to prevent the absorption of moisture. This treatment may be given either before or after the tape is applied. When the untreated tape is used the entire coil may be varnished or impregnated after being taped.

Cotton tape is used in a large number of thicknesses ranging from about 0.004 to 0.040 in. and with various weaves. The tape may be woven to the desired width, in which case it has a selvedge on each side, or it may be slit from a roll of cloth to form a roll of what is called cut tape. As the warp threads usually are not absolutely straight, some of them are cut when the tape is slit and this, in connection with the omission of the selvedge, reduces the strength of the tape. The cut tape is somewhat less expensive than the selvedge tape. It is principally used for the inner wrappings of coils, being covered by a finishing layer of selvedge tape, which provides greater strength and better finish.

In making joints in rubber-insulated wires or cables, a rubber tape, or splicing compound, as it is sometimes called, is used to complete the rubber insulation, and is then covered with a wrapping of friction tape for mechanical protection. Rubber tape consists of a partially vulcanized rubber compound and is made in several grades. The tape should have sufficient strength to

*Abstracted from a recent article in "The Electric Journal" by Dean Harvey.