

of one piece is attached to the end of the blade by two screws to prevent snow and ice from collecting at that point. Additional advantages claimed for this blade include the elimination of frequent repainting and the increase in visibility secured by the curved surfaces.

**A SIMPLE CROSSING BELL MECHANISM**

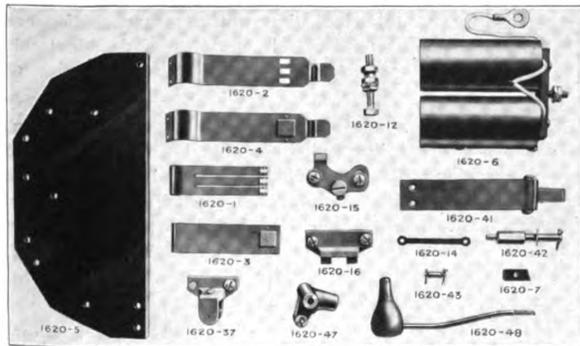
The special features of the improved style E crossing bell, of the Chicago Railway Signal & Supply Company, Chicago, which has recently been developed, include simplicity, inter-



The Improved Style E Chicago Crossing Bell.

changeability of parts in the mechanisms and with other bells and relays now in use and of complete mechanisms between the various mountings, and the practical elimination of arcing at the contacts when operated on high voltage. Springs and complicated parts have been eliminated in this design, the armature and striking hammer being so arranged that the magnet coils when energized oppose the action of gravity which returns the hammer to the position shown in the illustration and re-makes the contacts, closing the circuit through the coils after the hammer has struck the gong.

The bells are furnished in resistances suitable for operation on from 2 to 650 volts, and for the high voltages a special resistance unit is provided to overcome the kick-back in the circuit and eliminate arcing at the contact points. These contacts can be furnished either in carbon or platinum. All parts are insulated and the mechanism is insulated from



Parts of the New Bell.

the case by insulating bushings at the point of support of the hammer, which eliminates the possibility of electrical grounds or short circuits at the moment the hammer strikes the gong.

The bell is furnished for mounting either on the top of a pole or on the face of a pole. The entire mechanism is contained in a case which can be swung out on a hinge, thus allowing the mechanism to be inspected or repaired without interfering with the operation of the bell, and also making possible the interchange of the case and mechanism

complete, from one style of mounting to another. The top of pole casting is made in three sizes for use on 3-in., 3½-in. or 4-in. pipe (3½ in., 4 in. and 4½ in., outer diameter, respectively), and the face of pole mounting can be used on poles from 2 to 8 in. in diameter by adjustment of the U bolts. The gong is high carbon steel 12 in. in diameter, covered with a rain and sleet shield. The case is water, bug and dust proof, and is provided with a drain to carry off any condensation that may accumulate. The bell meets the R. S. A. specifications in all respects.

**EXTENSION OF NEW HAVEN SIGNALS**

The first installation of upper left-hand quadrant three-position signals on the New York, New Haven & Hartford has recently been put in service between New Haven, Conn., and Springfield, Mass. Connecting with this installation at Cedar Hill, in the northerly part of New Haven, and extending south to the New Haven station light signals have been installed giving three-position indications. The signals used for this purpose are equivalent to the two-arm signals at all interlockings, and one-arm signals used for automatic block purposes.

In connection with the extension of electrification from Stamford to New Haven, automatic signals were installed. In this section the signals were of the two-position, two-arm type, and, of course, operated entirely by alternating current. The efficiency of the three-position system, especially at interlocking plants and where the automatic blocks are short and in congested districts, has proved to be so much greater than the two-position system that authority has now been granted to remodel the signal system between Stamford and New Haven, changing from the two-position, two-arm aspect to the three-position, upper left-hand quadrant aspect. This embraces not only the changes involved in the automatic block, but also at all interlocking plants between Stamford and New Haven.

At the time of the original electrification between Stamford and Woodlawn, the Coleman controlled manual block system was changed over to operate in connection with electric propulsion, retaining the same block spacing as was originally used with steam operation. Authority has now been granted to replace this older block system with modern equipment, as mentioned in the July issue of *The Signal Engineer*. The new installation will, of course, operate entirely by alternating current and will be similar to the system proposed between Stamford and New Haven. However, in rebuilding this system, some of the old interlocking plants will be replaced by new plants and so located as to divide the road into sections which will be advantageous from an operating standpoint.

The signal reconstruction work between New Haven and Woodlawn will include the installation of one large electric interlocking plant at Stamford, electro-mechanical interlocking plants at Green's Farm, Greenwich, Rye and Mamaroneck, also electro-mechanical plants for the control of derrails and signals at the drawbridges at Westport and Cos Cob.

One of the interesting features in connection with the new signal system extending from New Haven to Woodlawn is that on account of the signals being suspended and the close clearance of the pantograph of the electric locomotive, it is necessary to use short blades. The light signals above mentioned in New Haven have proved so efficient that it has been determined to combine with the short blade a powerful light so that in reality the engine-drivers by daylight will have a combination signal, both light and blade being visible. The intensity of the light will be controlled by voltage regulation so as to maintain practically the same density of color at night as in the daytime. With the completion of the work between New Haven and Woodlawn, there will be three-position, upper left-hand quadrant signals from Woodlawn to Springfield, Mass., a distance of 126 miles, 66 of which is four-track, the balance being double-track.

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