J. A. WOTTON.

SIGNALING DEVICE.

APPLICATION FILED NOV. 28, 1919.

1,360,701. **Patented Nov. 30, 1920.**

Fig. 1.

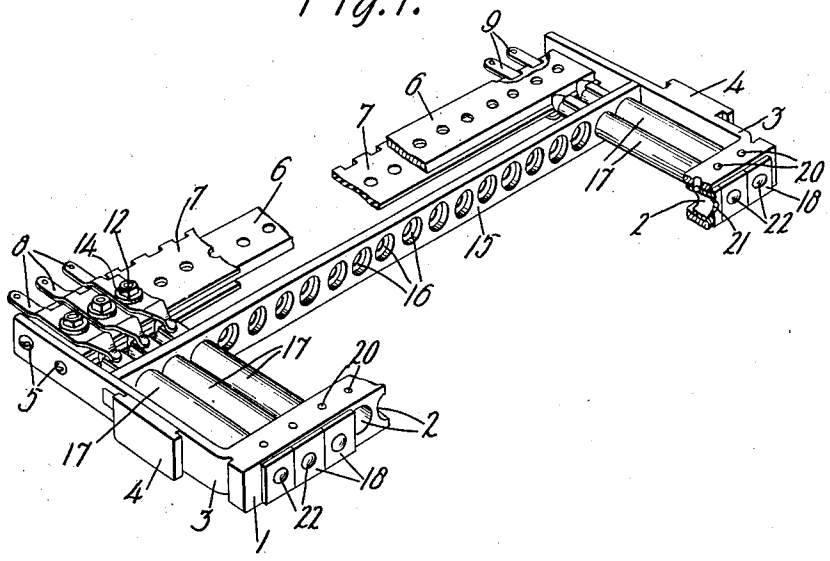
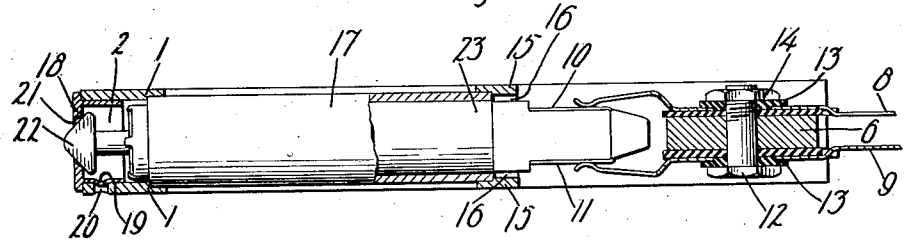


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES A. WOTTON, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SIGNALING DEVICE.

1,360,701. Specification of Letters Patent. Patented Nov. 30, 1920.

Original application filed June 13, 1918, Serial No. 239,762. Divided and this application filed November 28, 1919. Serial No. 341,126.

To all whom it may concern:

Be it known that I, JAMES A. WOTTON, a citizen of the United States, residing at Montclair, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Signaling Devices, of which the following is a full, clear, concise, and exact description.

This invention relates generally to signaling devices and more particularly to electromagnetic signaling devices, of the type used in telephone switchboards.

The object of this invention is to provide a compact mounting for signaling devices from which the said devices may be readily removed.

A further object of this invention is to provide a mounting in which the individual signaling devices are magnetically shielded from each other.

The preferred form of signaling device for which this invention is especially adapted is described fully in my copending application, Serial No. 239,762, filed June 13, 1918, of which the present application is a division.

These objects are accomplished in accordance with my invention in its preferred form by providing a skeleton framework composed of longitudinal and transverse strips somewhat in the form of a lamp or jack strip. These strips support cylindrical iron shells into which the signal devices are fitted. These shells serve to protect adjoining signals from mutual magnetic effects. Springs are provided to contact with contact points on the casing of the signal device, thereby allowing the convenient removal of and replacement of a single signal unit.

With this simple structure, a mounting strip may be made as small and as compact as the jack strip or other apparatus with which it is associated.

The drawing shows the preferred form of the invention. Figure 1 shows a general view of the mounting strip partly assembled with portions cut away to show the general construction. Fig. 2 shows a cross-sectional view through one of the iron shells with a signal device in position.

Like reference numbers refer to like parts in the figures.

As shown in Figs. 1 and 2, the mounting comprises a face strip or portion 1 provided with a number of rearwardly shouldered apertures 2. Rearwardly extending end portions 3, 3 are provided with suitable lugs 4, 4 for attaching the mounting to the associated switchboard framework. By means of screws 5 engaging the ends thereto, a mounting bar 6 of a contact spring bank is secured to the end portions 3, 3. Upon the bar 6 and separated therefrom by insulating strips 7, 7, pairs of contact springs 8 and 9, adapted to engage contact plates 10 and 11 are mounted and secured thereto by means of bolts 12, carrying insulating washers 13, 13, extending through apertures in members 6 and 7 and engaging nuts 14.

At a point intermediate the face strip and the contact spring back, a supporting member 15 is secured to the end portions 3, 3. Apertures 16, corresponding in number and alinement with apertures 2, are provided in the member 15. However these apertures are enlarged near the front surface of the member to provide therein annular shoulders in opposition to those of apertures 2. Cylindrical casings of magnetic material 17 are jointly supported by the face strip 1 and the supporting member 15, by engaging the enlarged portions of the apertures 2 and 16 respectively in such members. These casings inclose the unitary electromagnetic signal devices when in position, providing therefor magnetic paths of low reluctance and serving to magnetically isolate the individual devices. The longitudinal movement of the casings 17 is effectively prevented by the annular shoulders within the apertures 2 and 16.

The apertures 2 in the face strip 1 are partially closed by the projecting caps 18 inserted from the front of the mounting, and removably secured in position by detent 19 in the walls thereof, resiliently engaging vertical apertures 20 in the face strip 1. Apertures 21 of a diameter which permits an effective exposure of the targets 22 when in their normal position, but facilitates their obscuration upon retraction, are provided in the caps 18.

When the electromagnet of the signaling device 23 is energized, the target member 22 is withdrawn from the aperture 21 until it is effectively retired. When deënergized,

the target member returns to its former position partly thrust through the aperture 21.

The signaling device may be readily removed from the mounting for inspection or for other purposes, without interfering with the other devices associated on the same mounting, by the removal of the associated cap 18, the resiliency of the wall of the cap being such that the detent 19 may be readily disengaged from the aperture 20. The device may then be withdrawn from the casing 17, and by the consequent disengagement of the contact plates 10 and 11 from the contact springs 8 and 9 respectively, it is also disengaged from the circuit with which it may have been associated.

What is claimed is:

1. In a mounting for a series of signaling devices, a face member, an intermediate supporting member, a series of shields for the said devices jointly supported by the face and intermediate members, and a bank of contact springs mounted at the rear of said shields for engaging and positioning the signaling devices.

2. In a mounting for a series of signaling devices bearing display targets or members, means for removably supporting such devices comprising apertured front and back supporting members, a series of shields jointly supported thereby for inclosing the devices, a bank of contact springs mounted at the rear of the shields for engaging and positioning the devices and partial closure members inserted in the apertures of the face member through which the display members normally partially protrude.

3. In a mounting for a series of signaling devices, a face member, an intermediate supporting member, a series of shields of magnetic material for the said devices, jointly supported by the face and intermediate members, and a bank of contact springs mounted at the rear of said shields for engaging and positioning the said signaling devices.

In witness whereof, I hereunto subscribe my name this 24th day of November A. D., 1919.

JAMES A. WOTTON.