

A. H. WEISS.
TELEPHONE DROP.
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969,818.

Patented Sept. 13, 1910.

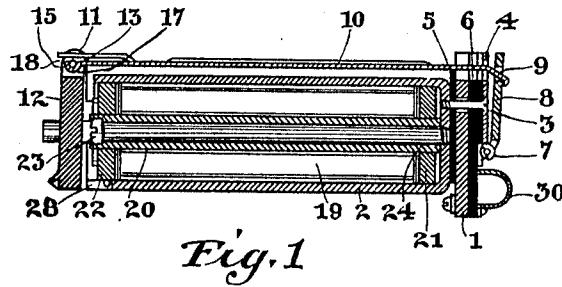


Fig. 1



Fig. 2

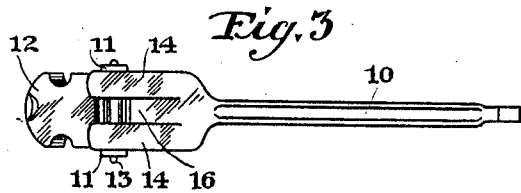


Fig. 3

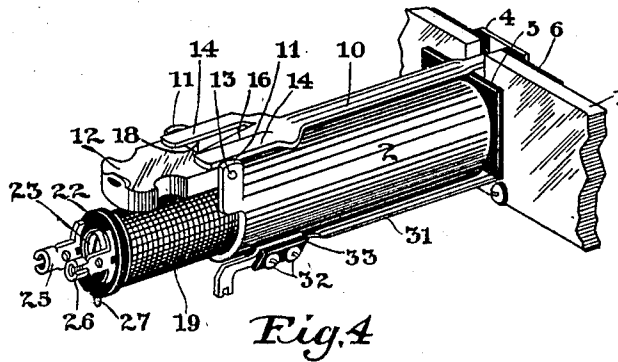


Fig. 4

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UNITED STATES PATENT OFFICE.

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TELEPHONE-DROP.

969,818.

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To all whom it may concern:

Be it known that I, ALFRED H. WEISS, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Telephone-Drops, of which the following is a specification.

My invention relates to telephone annunciator drops of the character used at the central office of a magneto telephone system for indicating to the operator when one of the subscribers desires a connection. Drops of this character are generally used in small exchanges and it is not customary for such exchanges to employ expert repair men to take care of the apparatus. Furthermore, lines of such an exchange are usually run on poles above ground and frequently extend far into the country where they are subjected to the high tension effects of lightning. At the central office the line wires usually terminate directly in the coil of a line drop and therefore this coil is frequently burned out or punctured by the abnormal voltages caused by lightning striking the lines.

It is the object of this invention to provide a drop in which the coil may be readily removed and replaced by one not skilled in the art and by the simple use of the screw-driver.

Other objects of my invention are the details of construction by means of which the above result is accomplished and such others as will be brought out in the following description and claims.

My invention is illustrated in the accompanying drawing forming a part of this specification, in which—

Figure 1 is a longitudinal section through the drop with the parts in their normal positions; Fig. 2 is an elevation of the armature and catch with the armature in a partially raised position; Fig. 3 is a plan of the parts shown in Fig. 2, and Fig. 4 is an isometric drawing of the drop with the coil partially removed.

In carrying out my invention I preferably mount a plurality of drops upon the strip 1 which is usually of metal and detachably supported at its ends. To this strip the shell 2 is secured by means of screws 3 which pass through the plate 4 and strips of insu-

lation 5 and 6 and thread into the end of the shell. The lower edge of the plate 4 is provided with the hinged portion 7 to which is pivoted the drop plate 8, this plate being provided with the opening 9 through which the end of the catch plate 10 extends normally holding the drop plate 9 in its vertical position.

The rear portion of the cylindrical shell 2 is provided with the upwardly extending armature supports 11 which are preferably stamped out of a portion of the shell 2 and bent in the position shown. The armature 12 is pivoted to these projections by the pin 13 which passes through the two upwardly extending portions of the armature and each of the armature supports 11. The rear portion of the catch plate 10 is broadened out and cut into three prongs, the outside prongs 14 being sprung upwardly and normally resting upon the top flat face 15 of the armature, while the middle prong 16 is sprung downwardly and is provided with the depression 17 which is placed under the pivot 13 and holds the catch plate in position on the pivot. By this arrangement it will be seen that the armature 12 may be moved from its normal position to the position shown in Fig. 4, and in so doing that the prongs 14 and 16 are only slightly spread to allow the prongs 14 to pass the corner 18 of the armature 12. When the armature is in its normal position the prongs 14 rest firmly upon the flat surface 15 and thereby hold the armature in a position at substantially right angles to the catch plate. When the armature is moved to its position shown in Fig. 4 the prongs 14 press upon the outside face of the armature 12 and thereby hold the armature in its raised position.

The removable coil 19 is provided with the hollow core 20 upon which are secured the fiber ends 21 and 22. The screw 23 passes through the entire length of the hollow core 20 and threads into the shell at the point 24. The terminal wires of the coil are permanently secured to the two terminals 25 and 26, these terminals being preferably of brass and provided with threaded portions into which screws may be inserted for connecting the switchboard wires with the coil. In order that the coil may always be inserted in the shell in its proper position a small

pin 27 is permanently secured in the fiber head 22 and is adapted to extend into the slot 28 in the rear of the shell.

The small contact shield 30 is secured to the front of the switchboard for the purpose of protecting the night alarm contacts not shown in the drawing. These contacts, however, are of the usual form and are adapted to be connected together by pressure from the drop 9 when it falls to its signaling position. The metallic conductor 31 which is secured to the shell by the screws 32 and is insulated therefrom by the rubber insulating sheet 33 forms one of these night alarm contacts at its forward end, the other of these night alarm contacts being metallically connected with the frame 1 which usually is connected with earth to complete the circuit of the night alarm signal.

With the combination of parts and the mechanical arrangement of my invention it will be seen that in order to entirely remove the coil 19 from the shell it is only necessary to loosen the screws which complete the electrical connections with terminals 25 and 26 to then remove the connections raise the armature to the position shown in Fig. 4, whereby the screw 23 is exposed, and then to loosen screw 23 allowing the coil to be removed. The coil may then be replaced by another perfect coil, the armature again moved down to its normal position and the connections again made, thus restoring the line to its proper working condition with very little delay.

It is to be understood that while I have shown and described this apparatus with respect to the details of the drawing here shown, I do not wish to be unduly limited thereto, it being possible to make many variations of this particular structure without in any way departing from the spirit or scope of my invention.

What I claim as new and desire to secure by Letters Patent is:

1. In a drop, the combination with an armature, of a pivot supporting said armature, a drop catch having flexible members also supported by said pivot by means of one of said members, said catch having another one of its said flexible members engaging said armature, substantially as described.

2. In a drop, the combination with an armature, of a support therefor, an integral drop catch having a flexible member secured directly to said support, said catch also having a flexible member engaging the armature, substantially as described.

3. In a drop, the combination with an armature having a normal and a raised position, of a supporting pin passing through a portion thereof, a drop catch having a tongue engaging the pin and a tongue engaging the armature, said latter tongue engaging either of two faces of the armature

according to the position of the armature, substantially as described.

4. In a drop, the combination with an armature, of a drop catch pivoted thereto, said catch having a flexible prong formed of a portion thereof engaging the armature and normally holding the armature in a position substantially at right angles to the catch but by its flexure permitting the armature to be moved substantially into the plane of the catch, substantially as described.

5. In a drop, the combination with a shell, of a hollow core within the shell, a screw passing through the core and into the base of the shell, an armature normally disposed across the end of said core and shell, a pin extending through a portion of said armature, a drop catch engaging said pin, said catch having a portion engaging said armature but permitting the armature to be moved away from the end of the core and shell, whereby the core may be removed from the shell, substantially as described.

6. In a drop, the combination with a shell, of a core, means to secure the core within the shell, an armature having a normal position near the end of said core, the upper portion of said armature having a transverse aperture therein, a pin passing through said aperture to support the armature, a drop catch engaging said pin and having an integral flexible portion engaging the top of said armature in a working contact, whereby the armature may be moved from its normal position to a position away from the end of the core, whereby the core may be removed from the shell, substantially as described.

7. In a drop, the combination with a shell, of a core removably secured within the shell, a drop catch pivoted to the shell and having an integral flexible prong extending beyond the pivotal point, an armature engaged by said portion of the drop catch and normally held in a position across the end of said core, said armature being likewise pivoted to the shell, whereby it may be moved to a position substantially in the plane with said drop catch and may be held in the latter position by the extension upon said drop catch, substantially as described.

8. In a drop, the combination with a shell, of an armature pivoted to the shell, a drop catch also pivoted to the shell and to the armature, and an integral flexible portion of said drop catch engaging said armature to hold it in either of two positions relative to the drop catch, substantially as described.

9. In a drop, the combination with a shell, of a drop catch formed of a single integral piece of sheet metal pivoted to said shell, the pivoted end of said drop catch having three prongs, a pivot engaged by one of said prongs and an armature having flat surfaces engaged by the other two of said

prongs, said armature having two positions relative to said catch plate and having different surfaces engaged by said prongs in the different positions, substantially as described.

5 10. In a drop, the combination with an armature having two integral projections at its upper edge, said projections having aligned openings therein, a supporting pin
10 passing through the openings in said projections and exposed between the projections, a drop catch having a tongue adapted to engage the pin between the projections and having two tongues adapted to engage
15 the surface of the projections, each of said

projections having two substantially flat surfaces at right angles to each other, either of which may be engaged by the tongues of said drop catch, whereby the armature may be held either in a position substantially at right angles to the drop catch or in a position in substantially the same plane with the drop catch, substantially as described.

Signed by me at Chicago, county of Cook, and State of Illinois, in the presence of two witnesses.

ALFRED H. WEISS.

Witnesses:

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