

T. LIDBERG.
TELEPHONE DROP.
APPLICATION FILED NOV. 26, 1906.

907,062.

Patented Dec. 15, 1908.

Fig. 1.

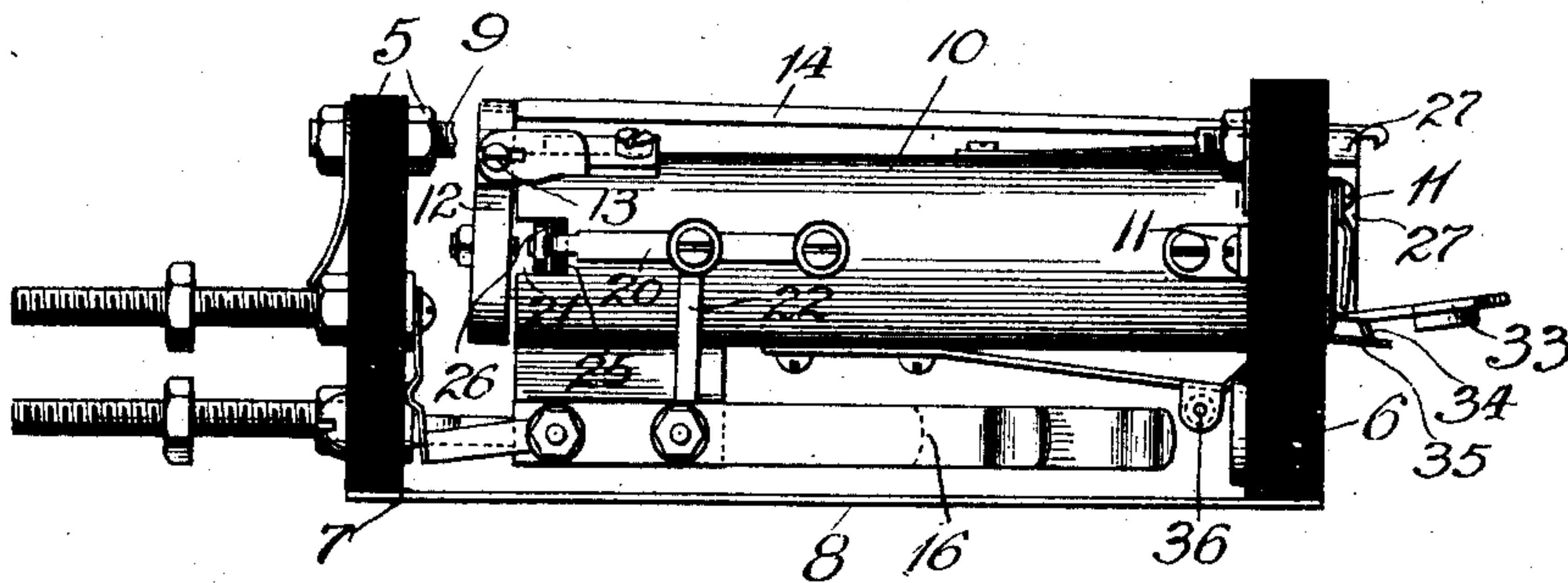


Fig. 2.

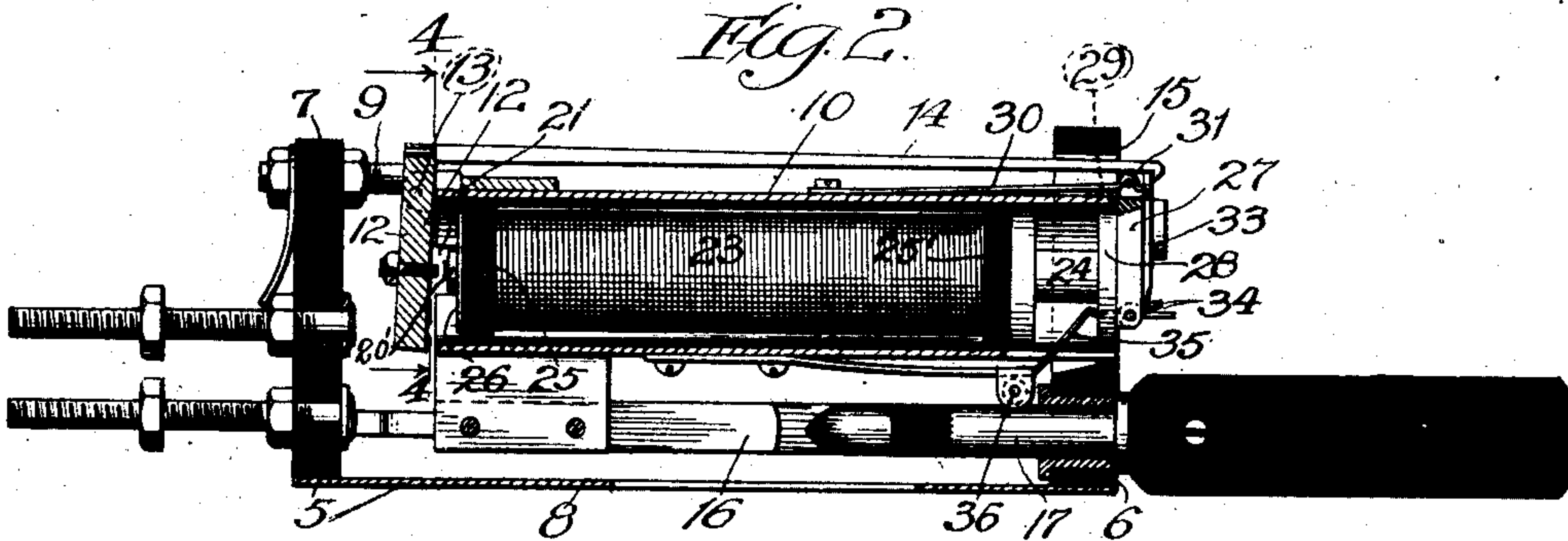


Fig. 3.

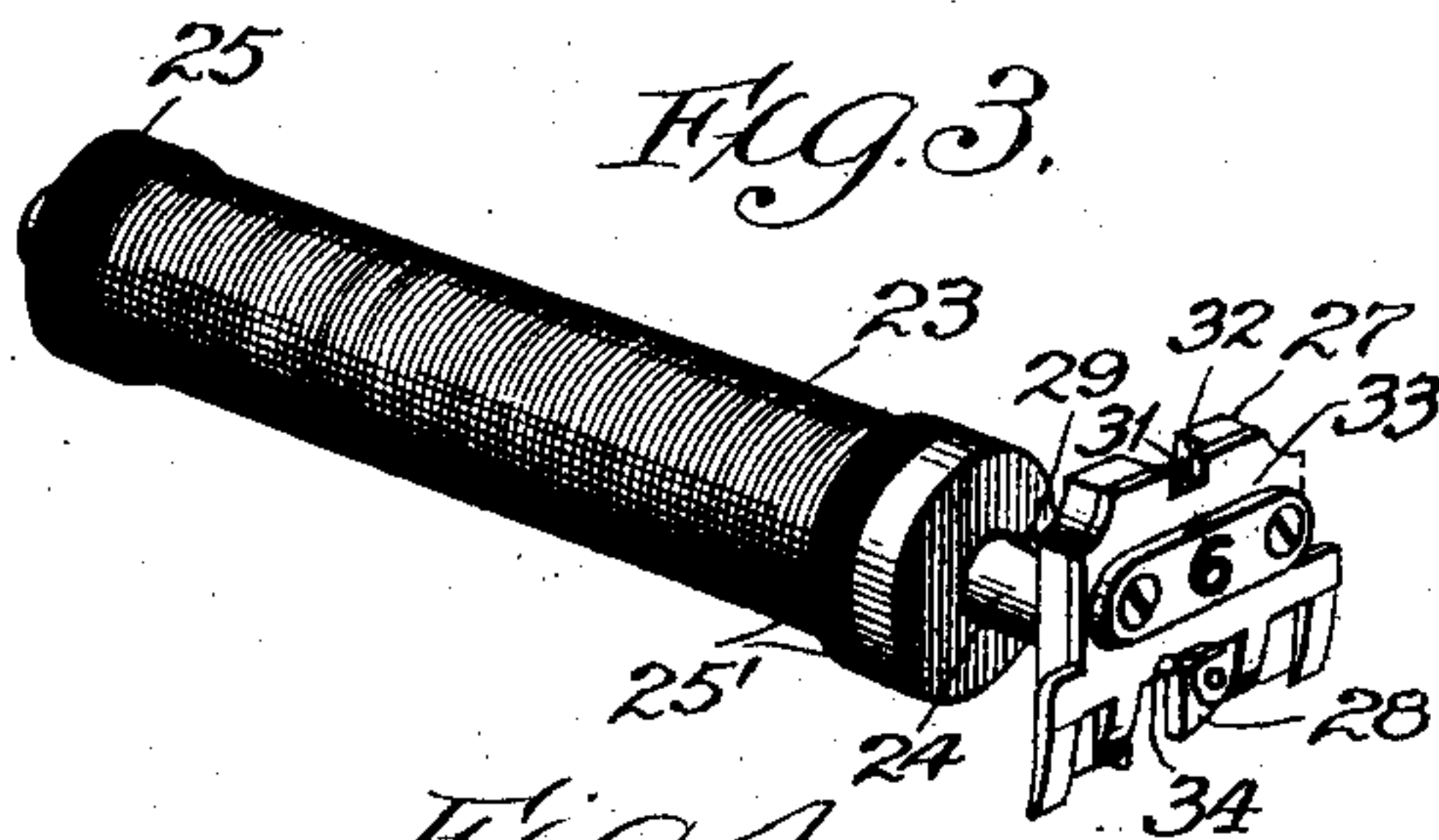
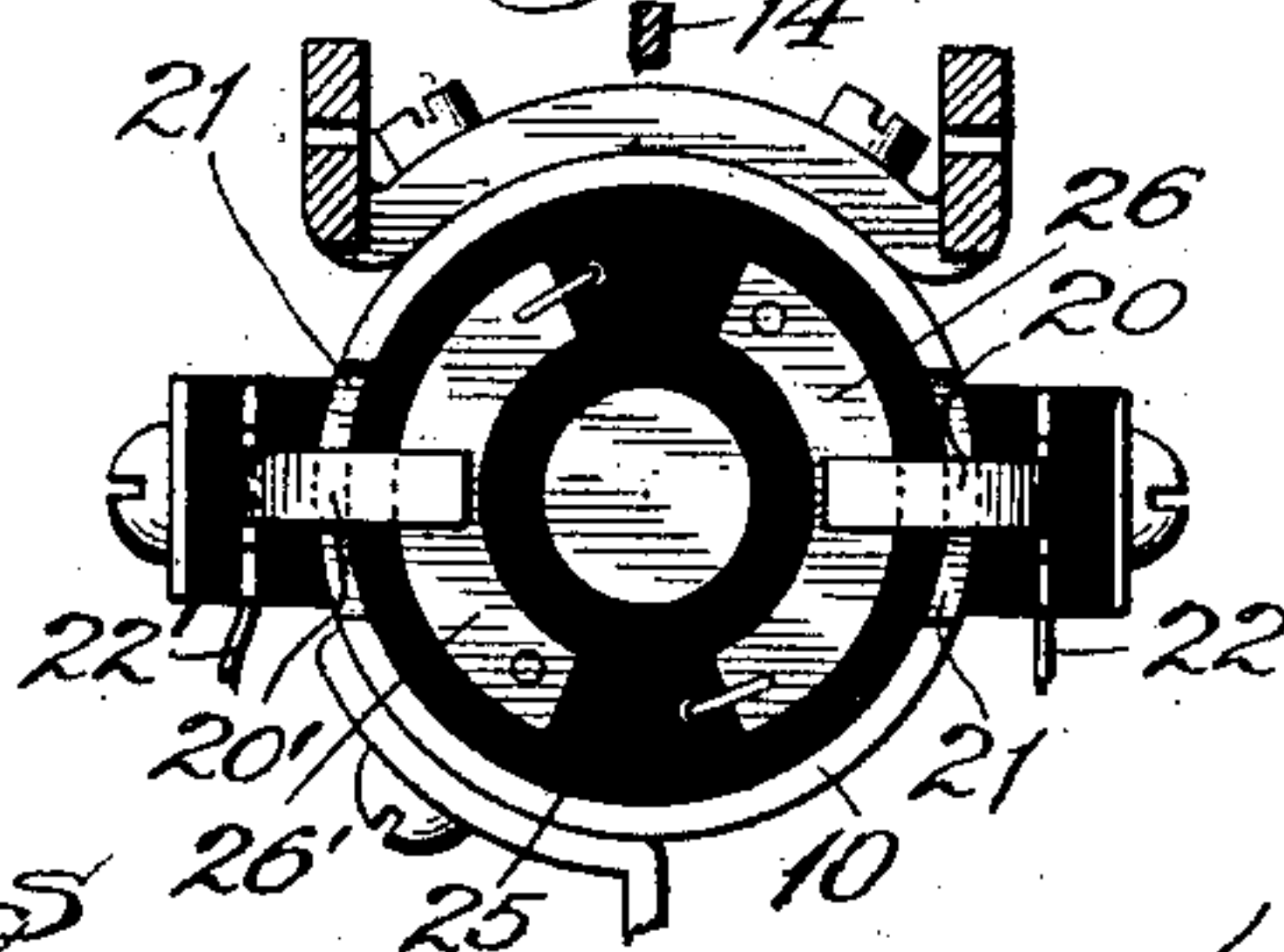


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

TIODOLF LIDBERG, OF CHICAGO, ILLINOIS, ASSIGNOR TO SWEDISH-AMERICAN TELEPHONE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE-DROP.

No. 907,062.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed November 26, 1906. Serial No. 345,138.

To all whom it may concern:

Be it known that I, TIODOLF LIDBERG, a citizen of the United States, residing at Chicago, in the 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 improvements in telephone drops, and more particularly to self-restoring drops employed in connection with spring jacks in telephone installations.

One of the salient objects of my invention is to provide for the easy removal from the front of the switch board of the coil and shutter mechanism without disturbance of the frame, the jack, or the circuit connections.

A further object of my invention is to provide a construction of the character described operable in conjunction with the drop-restoring mechanism associated with the spring jack.

Other and further objects of my invention will best become apparent to those skilled in the art from the following description taken in conjunction with the accompanying drawing, wherein I have illustrated a practical embodiment of my invention, and wherein:

Figure 1 is a side elevation of a combined drop and jack; Fig. 2 is a central, longitudinal section therethrough with parts in elevation; Fig. 3 is a perspective detail of the removable core, shield and shutter, and; Fig. 4 is a transverse section on line 4—4 of Fig. 2.

Throughout the drawing like numerals of reference refer always to like parts.

In the drawing 5 indicates in general the frame of the combined jack and drop, comprising in its construction insulating front and back plates 6 and 7, a base plate 8, and tension rods 9—9 connecting the plates 6 and 7 near their upper edges.

10 indicates a tubular metallic coil-casing and support, of cylindrical form, permanently secured as by clips 11 to the front plate 6 of the frame, and at its front end open and extending through said plate.

The rear open end of the casing 10 is overlain by the armature 12, suitably pivoted as at 13 provided with the usual forwardly extending hook 14, which takes through a suitable aperture 15 in the front plate 6 and is disposed for proper coöperation with the shutter. Below the casing 10 are disposed

suitable jack springs 16 adapted to be suitably engaged by a plug 17, for the insertion of which the usual aperture is provided in the front frame plate. The spring construction 16 may be of any desired arrangement, and the springs are connected in any suitable manner with the wiring terminals. For establishing electrical connection with the coil when in place, I provide upon the opposite sides of the casing 10 springs 20—20' which are supported in insulated relation to the casing, and at their rear ends are bent radially inward to take through suitable apertures 21 in the casing. Electrical connection between the springs 20, 20' and suitable members of the spring structure 16 are effected by connectors 22, 22'.

23 indicates the drop coil, wound upon a core 24 the terminals of the coil being led, from the rear end of the coil through a suitable insulating head 25 to separated contact plates 26, 26', which, when the coil is in operative position bear upon and make contact with the springs 20, 20'. The rear head 25 and front head 25' of the coil fit smoothly within the cylindrical casing 10 so as to be capable of ready insertion therein or withdrawal therefrom. The front extremity of the core 24 is extended beyond the front head 25', and at its extremity bears a dia-magnetic shield 27, with which is connected on its rear face a centering boss 28, these parts being so arranged that when the construction is in place the boss 28 projects into the casing 10 while the shield 27 overlies the front end thereof and bears on frame plate 6. Additional means for positioning the shield are provided in the form of pins 29, which take into suitable recesses in the front plate 6 of the frame.

For retaining the removable structure normally in place in the frame I provide a latching spring 30, secured to the top of the casing, arranged to take through the aperture 15 below the hook 14 and at its front end engaging a transverse pin 31 arranged in a recess 32 in the top of the shield 27.

33 indicates a shutter pivoted to the shield 27 at its lower edge, and arranged for coaction with the end of the hook 14, when the shield 27 is in normal position and latched by the spring 30. At its lower edge the shutter is provided with a cam tongue 34, arranged to coact with the restoring spring 35 on which

is provided a suitable roller 36 arranged in the path of the plug 17 for elevation by the insertion of the plug.

The coil structure I term the removable part in contradistinction to the remainder of the construction which I call the stationary part.

The operation of my device will be apparent from the above description. It is observable that the latch 30 may be raised from the position shown in Fig. 2 to release the shield 27, which, together with its attached shutter and drop coil may be readily drawn out from the front of the structure without disturbing any of the parts of the frame or jack, or the electrical connections thereof, and upon reinsertion of the coil, or replacement by a new coil, the connection of the coil with the proper wiring is made through the contact of core terminals 26 26' with the springs 20, 20'. In operation the drop works in the usual manner, being normally retained in closed or raised position by the hook 14, and allowed to drop upon the elevation of the hook through the attraction of the armature 12. When the drop is down, as indicated in Fig. 1, the cam or projection 34 bears upon the spring 35 so that upon insertion of the plug, as indicated in Fig. 2, the roller 36 serves to raise the spring 35 which presses the shutter upward in the position to be latched by its hook 14.

While I have herein described in some detail a particular embodiment of my invention, which I have found to be practical and useful, it will be understood that such particular illustration is for the purpose of disclosure only and that I do not desire to be limited to the specific construction shown and described further than as specified in the claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent, of the United States, is:

1. In a telephone drop, a cylindrical coil-casing open at both ends, an electro-magnet comprising a coil arranged for insertion and withdrawal through the front end of said casing, a shutter support inseparably fixed thereto and shutter latching means secured to said casing and controlled by said electro-magnet.

2. In a telephone drop, a cylindrical coil-

casing open at its front end, an electro-magnet comprising a coil arranged for insertion and withdrawal through the front end of said casing, a shutter support inseparably fixed thereto, a shutter latching means secured to said casing and controlled by said electro-magnet, and means for securing the coil within the casing in operative relation.

3. In a telephone drop, a cylindrical coil-casing open at both ends, a shutter normally overlying the front end, contact springs near the rear end of said casing, an electro-magnet comprising a removable coil provided at its rear end with terminal contact members, means for positioning the coil in the casing with its terminal members in contact with said contact springs, means for controlling the shutter position arranged for control by said magnet, and means for securing said coil in said casing in operative position.

4. In a telephone drop construction, a support open at one end, an armature and latching mechanism secured to the stationary part, a removable electro-magnet arranged for insertion or withdrawal relative to said support, and a shutter carried by the magnet core for movement therewith.

5. In a telephone drop construction, a frame having a front aperture, a hollow casing in alinement with said frame aperture, an armature and hook secured to the stationary part, an electro-magnet removably fitting in the casing, a shield associated with the electro-magnet for movement therewith, and a shutter arranged for coaction with the hook carried by the casing.

6. In a telephone drop construction, a frame comprising an apertured front plate, a casing alining with an aperture in the plate, an armature at the rear end of the casing, secured to the stationary part, a forwardly projecting hook, an electro-magnet removable through the front of the casing, arranged therein, a shield fixed to the magnet, a latch for holding said shield against accidental displacement, and a shutter carried by the shield.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

TIODOLF LIDBERG.

In the presence of—

FORÉE BAIN,
MARY F. ALLEN.