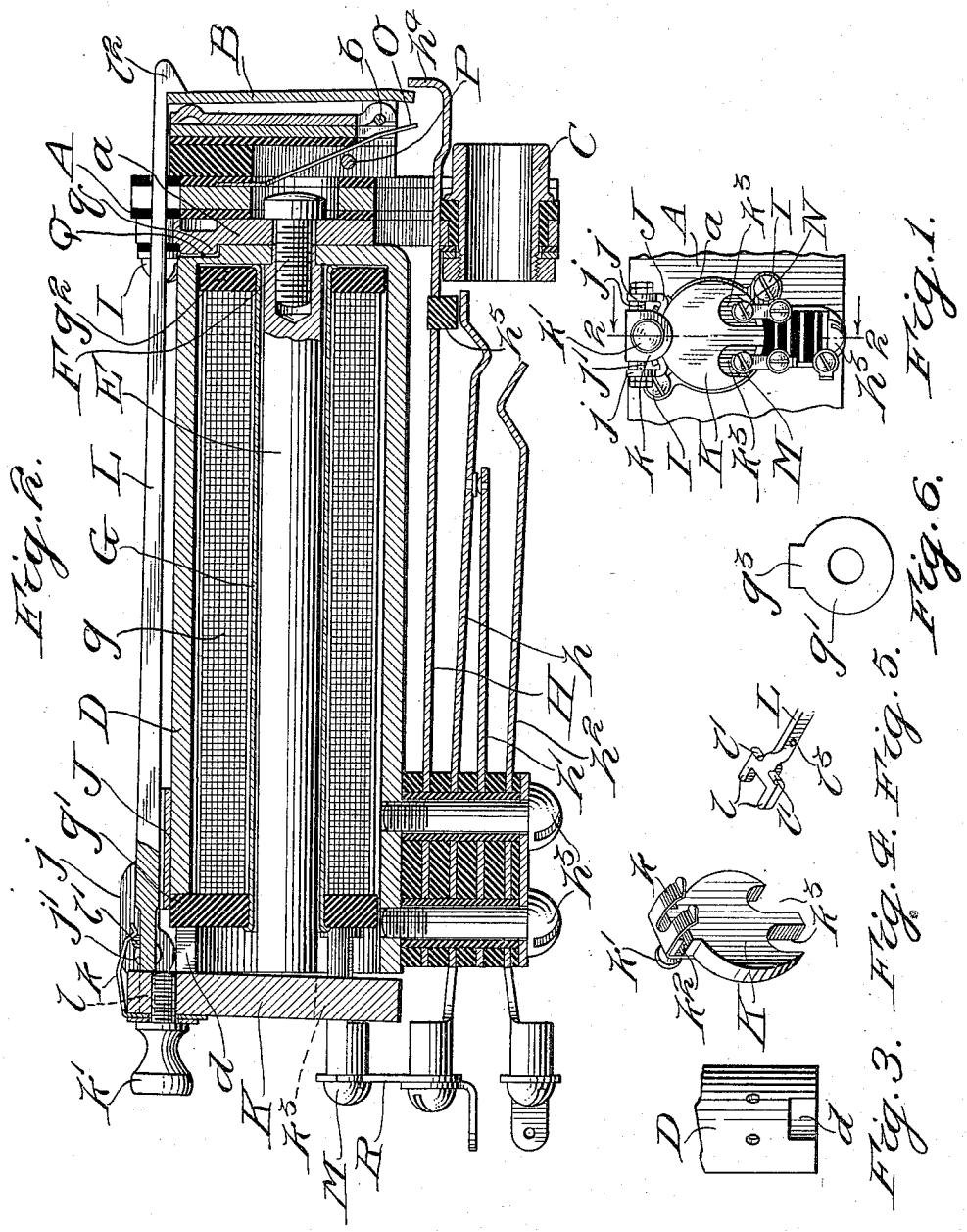
M. SETTER.

ELECTRICAL DEVICE.

APPLICATION FILED DEC. 6, 1906.

1,161,010. Patented Nov. 16, 1915.



Witnesses.
P. H. Burfind
A. Andersen.

Inventor:
Michael Setter,
By Bulkley & Durand
Attorneys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MICHAEL SETTER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO FIRST TRUST AND SAVINGS BANK, TRUSTEE, OF CHICAGO, ILLINOIS.

ELECTRICAL DEVICE.

1,161,010. Specification of Letters Patent. Patented Nov. 16, 1915.

Application filed December 6, 1906. Serial No. 346,575.

To all whom it may concern:

Be it known that I, MICHAEL SETTER, a citizen of the United States of America, and resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Electrical Devices, of which the following is a specification.

My invention relates to combined drops and jacks, and more particularly to devices of this character in which provision is made for automatically resetting the drop or shutter when the operator inserts a plug in the jack.

Generally stated the object of my invention is the provision of an improved and highly efficient combined drop and jack for use in telephone switchboards or other similar apparatus.

Special objects of my invention are the provision of a magnet armature which is readily removable as a unit and without removing the arm or latch which extends forward to the drop or shutter; the provision of an electromagnet and a set of jack springs which can be removed together as a unit without the necessity of removing the drop or shutter, and without removing or disturbing the sleeve or thimble of the jack; the provision of a magnet coil which can be readily removed without removing or disturbing either the shell or the core of the magnet; the provision of means by which the electromagnet and its armature and latching arm may, together with the jack springs, be removed as a unit without the necessity of removing either the shutter or the testing thimble of the jack; the provision of a structure in which the electromagnet armature and its forwardly extending arm or latch can be removed together as a unit without disturbing other portions of the structure; the provision of an arrangement by which the jack springs can be removed from the said combined drop or jack without removing or disturbing other portions thereof; the provision of a combined drop and jack of this character having a jack sleeve or testing thimble which can be readily removed without disturbing other portions; the provision, in a combined drop and jack of this character, of a drop or shutter which can be readily removed without removing other parts; and the provision of certain details and features of improvement tending to increase the general efficiency of a device of this particular character.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a rear elevation of a combined drop and jack embodying the principles of my invention. Fig. 2 is an enlarged longitudinal section of the same. Fig. 3 is a detail view of the rear portion of the magnet shell. Fig. 4 is a detail perspective view of the magnet armature. Fig. 5 is a detail perspective view of the rear end portion of the armature arm or latch. Fig. 6 is a detail view of the rear head or disk of insulation by which the magnet coil is held in place.

As thus illustrated, my invention comprises a front supporting structure A, which may be of any suitable character. The shutter B is pivoted to the front of the said supporting structure by a pivot-bearing b located at its lower edge. The jack sleeve or testing thimble C is also preferably removably secured to and supported by the said structure A. A magnet shell or casing D has its closed forward end provided with an opening into which is fitted the reduced forward end portion of a magnet core E, both of which are clamped in place by a screw F which is inserted through a plate a and screwed into the end of the said core. Over the said core is fitted a sheet-metal sleeve G upon which is mounted the magnet coil g, and to the ends of which are secured the heads or disks of insulation g^1 and g^2, the former being provided with a peripheral lug or extension g^3 adapted to engage the slot or notch d formed in the rear end of the shell or casing D. In this way the magnet core is readily removable and is locked against turning when adjusted in place. To the under side of said magnet sleeve or casing D there are secured the four jack springs H, h, h^1 and h^2 with strips of insulation interposed between, and all secured in place by

means of screws h^3. It will be observed that the spring H extends forward and normally rests upon the structure surrounding the jack sleeve or thimble C, but not in electrical contact with said sleeve or thimble. The upturned forward end portion h^4 of said spring is adapted to engage and restore the drop or shutter B when a plug is inserted in the jack. For this purpose the said spring is provided with a piece of insulation h^5 adapted to be engaged and lifted by the spring h, which latter is in turn engaged and lifted by direct engagement with the plug when the latter is inserted in the jack. It will be seen that the jack sleeve or thimble C is removably secured to the plate a, which latter is in turn removably secured to the supporting structure A, as, for example, by screws I. At its rear end the magnet sleeve is provided with a bracket J having a pair of ears j through which are inserted the bearing screws j^1.

The magnet armature K is provided with a removable spring clip k clamped thereto by a thumb-screw k^1. The shutter is held normally in its elevated or raised position by the longitudinally extending latch or armature-arm L, and the rear end of this arm is provided with prongs l adapted to engage the notches k^2 in the upper end of the armature K. When the armature and its arm are thus brought together they are yieldingly retained in such relative positions by the engagement of the spring clip with the upturned lugs l^1 formed on the said arm. The forward end of the said arm is provided with a hook l^2 adapted to reach over and engage the upper edge of the drop or shutter B. As shown, the bearing screws j^1 are adapted to engage small sockets or pivot bearings l^3 in the neck portion of the arm L. In this way the latch or arm L is pivotally mounted at its rear end, and the armature K is removably mounted upon the pivoted rear end portion of said arm or latch. The terminals M and N extend rearwardly from the magnet structure, and the armature is provided with notches k^3 through which the said terminals extend. Other suitable terminals can also be provided for connecting the combined drop and jack with the proper line and circuit wires. At the forward end of the combined drop and jack structure night-alarm contacts O and P are shown adapted to be brought into electrical connection with each other by the falling of the drop or shutter. At its forward end the magnet shell D is preferably provided with a notch Q adapted to be engaged by a lug q on the plate a, thereby locking the magnet structure against turning movement about its core or axle.

With the foregoing construction it will be seen that the electromagnet and its armature and armature-arm or latch can, together with the jack springs and jack sleeve, be readily removed as a unit without removing or disturbing the drop or shutter. It will also be seen that the electromagnet and its armature and armature-arm and jack springs can be removed as a unit without disturbing the drop or shutter or the sleeve or testing thimble. Furthermore, the magnet armature can be removed without removing or disturbing the arm or latch by which the drop or shutter is normally held in its raised position. Again, the magnet coil can be readily slipped out of the shell or casing in which it is inclosed. In addition, the jack springs h and h' are connected with the coil g by means of the links R. If required, the magnet armature and its arm or latch can be removed together without disturbing the other parts of the structure. The shutter is also readily removable, of course, by removing the pivot or pin b. With such provisions, inspection and repairing of the combined drop and jack is greatly facilitated.

Broadly, of course, my invention is an electrical device embodying novel features and combinations which can be used in a combined drop and jack, or for other purposes.

What I claim as my invention is:—

1. A combined drop and jack whereof the drop is adapted to be restored by the insertion of a plug in the jack comprising an electromagnet, a drop shutter, a pivoted latch for said shutter, an armature, a spring clip for removably securing the armature to the said latch, and a jack below the drop shutter.

2. A combined drop and jack whereof the drop is adapted to be restored by the insertion of a plug in the jack, comprising an electromagnet, a shutter, a pivoted latch for said shutter, and an armature hung on said latch, said armature provided with notches and a spring clip, and said latch provided with a forked end having portions adapted to engage the notches and spring clip on the armature.

3. A combined drop and jack whereof the drop is adapted to be restored by the insertion of a plug in the jack, comprising an electromagnet, a shutter, a pivoted latch for said shutter, an armature hung on said latch, and lugs on said latch, said armature provided with an end having spring portions adapted to engage said lugs and clip said armature onto said latch.

4. A combined drop and jack comprising a support, a shutter carried on one side of said support, a magnet carried on the other side of said support, a casing for said magnet, springs carried by said casing, a pivoted latch for said shutter, an armature for

said magnet sustained on said latch only by means of a spring clip, said casing, magnet, springs, latch and armature assembled as a unit, means for securing said unit to said support, the unit being removable as a whole without disturbing said shutter by merely releasing said securing means.

Signed by me at Chicago, Cook county, Illinois, this 30th day of November, 1906.

MICHAEL SETTER.

Witnesses:
EDWARD D. FALES,
EDWARD A. MELLINGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."