

No. 750,953.

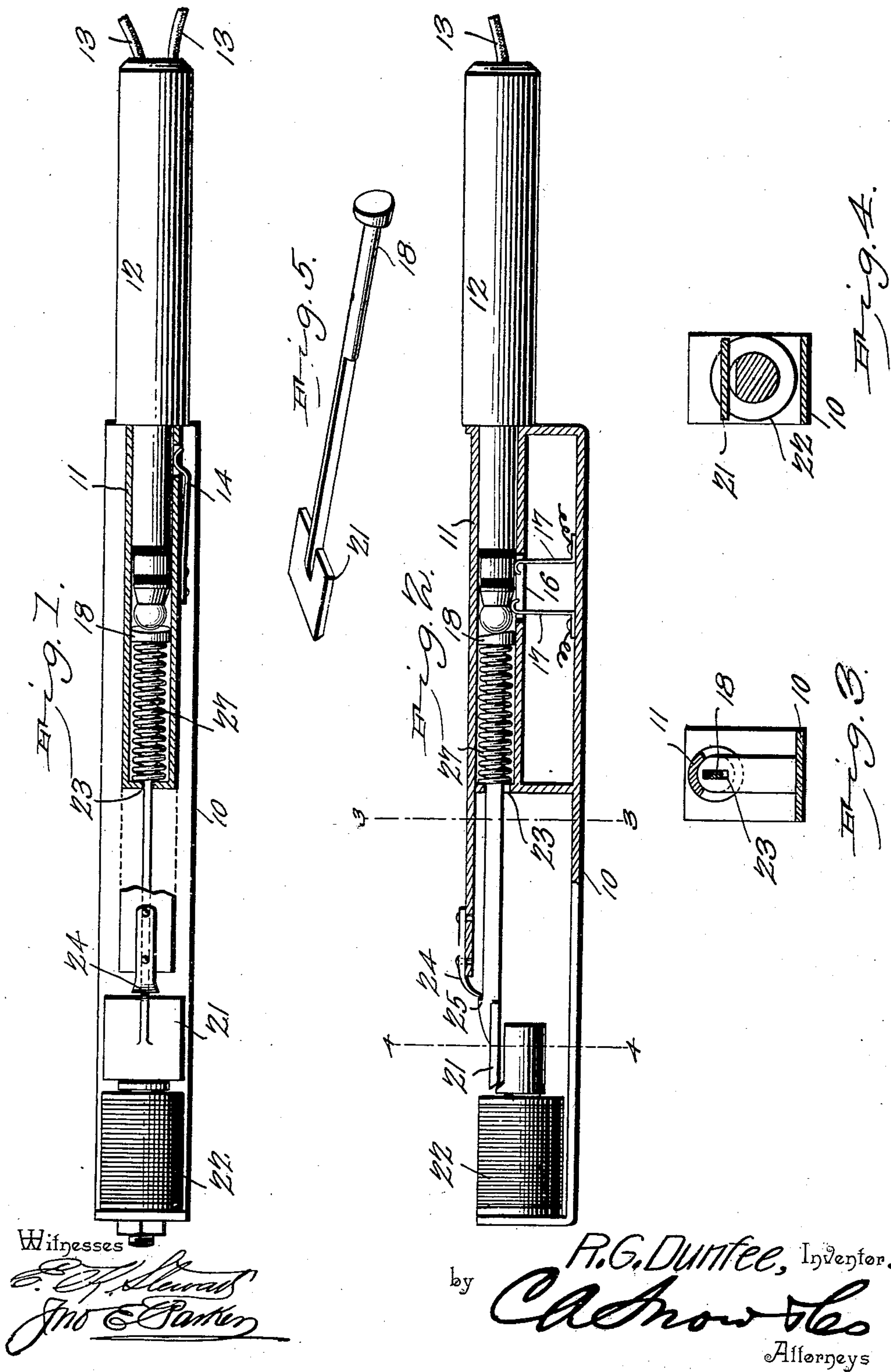
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R. G. DUNFEE.

PLUG EJECTING JACK FOR TELEPHONE SWITCHBOARDS.

APPLICATION FILED JUNE 6, 1902. RENEWED DEC. 15, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

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PLUG-EJECTING JACK FOR TELEPHONE-SWITCHBOARDS.

SPECIFICATION forming part of Letters Patent No. 750,953, dated February 2, 1904.

Application filed June 6, 1902. Renewed December 15, 1903. Serial No. 185,315. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. DUNFEE, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Plug-Ejecting Jack for Telephone-Switchboards, of which the following is a specification.

This invention relates to certain improvements in telephone-switchboards, and has for its principal object to provide an improved form of jack or socket which will automatically eject the switching-plug when the subscriber's calling-circuit is reestablished after finishing a conversation.

A further object of the invention is to provide a simple and inexpensive device of this character which may be arranged in the circuit in the same manner as the ordinary annunciator-drops.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a sectional plan view of a self-ejecting jack constructed in accordance with the invention. Fig. 2 is a longitudinal sectional elevation of the same. Figs. 3 and 4 are transverse sectional elevations of the device on the lines 3-3 and 4-4, respectively, of Fig. 2. Fig. 5 is a detail perspective view of the spring-pressed jack-plunger detached.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

10 designates a supporting-base, which may be secured in any suitable manner to the rear face of a switchboard, and on said base is mounted an elongated tube 11, forming the socket or jack and adapted for the reception of the plug 12, which is of the usual construction and connected to flexible wires 13 to permit the placing of the plugs in any desired jack. The plug is retained in position in the socket by the friction exerted by a spring 14, carried by one side of the tube and extending through an opening therein for contact with the plug. In the lower portion of the tube

is an opening 16, through which extends the contact-springs 17, connected to the line-wires and arranged in the usual manner for contact with the plug. The construction of the device as thus far described is similar to that of the jack and plug in ordinary use and forms no part of the present invention.

In the rear portion of the socket is a sliding plunger 18, having an enlarged head for contact with the rounded end of the plug, and the contact-face of said plunger is arranged at an angle to the vertical, so that the rounded head of the plug will exert a downward strain on the head of the plunger as well as force the same inwardly. This downward strain of the head of the plunger has a tendency to elevate the opposite end of said plunger, said opposite end of the plunger being provided with an enlarged plate 21, forming an armature arranged within the field of force of an electromagnet 22. That portion of the shank of the plunger which projects beyond the end of the socket is rectangular in form and is adapted to pass through a vertically-disposed slot 23 of such shape as to form a guide for the plunger and prevent rotative movement thereof, the armature and the head of the plunger being constantly maintained in proper position. The upper portion of the tube 11 is extended rearwardly for some distance and is provided with a spring 24, adapted to engage a shoulder 25 on the upper portion of the plunger at a point above the armature 21, and when the plunger is forced to the rear by the pushing in of the plug the rear end of the plunger will be elevated in such manner as to cause the shoulder and spring to interlock and maintain the plunger in the position indicated in the drawings against the stress of the plunger-spring 27.

The pole-piece of the magnet 22 may be arranged in the usual manner; but it is preferred to extend the pole-piece somewhat beyond the winding of the coil, the core being thus brought directly under the armature, so that when the coil is energized the armature will be attracted and released from contact with the spring 24. When this occurs, the plunger-spring travels the plunger forward and ejects the plug, the latter being provided with

the usual counterweight to return it to proper position on the table.

The coil 22 is arranged in the calling-circuit in the same manner as the annunciator-drops 5 and is energized only when the receiver is hung on the receiver-hook and the calling-circuit energized to notify central that the subscriber has finished.

10 The device is especially valuable in lines which are in almost constant use, as the line is disconnected immediately after each conversation is finished and no time is wasted in making disconnections.

15 While the construction herein described and illustrated in the accompanying drawings is the preferred form of the device, it is obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or 20 sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

1. The combination with the jack adapted 25 for the reception of a plug, of a spring-pressed plunger movable to locked position by the insertion of the plug, a holding-catch for engaging with and locking said plunger, an armature carried by the plunger, and an electro- 30 magnet for attracting the armature and releasing the plunger.

2. The combination with a plug-receiving jack, of a spring-pressed plunger adapted to be moved to locking position on the insertion of the plug, an inclined head disposed on the 35 plunger for contact with the end of the plug, a stationary holding-catch, a locking-shoulder arranged on the plunger and movable to engage said catch, an armature carried by the plunger, and an electromagnet for attracting 40 the armature and releasing the plunger.

3. The combination with a plug-receiving jack, of a spring-pressed plunger adapted to be moved to locking position on the insertion of the plug, an inclined head disposed on the 45 plunger for contact with the end of the plug, a vertical guiding-slot disposed at the rear end of the jack for the reception of a rectangular portion of the plunger, a stationary holding-catch on the plunger and movable into engagement 50 with the catch by the plug, an armature carried by the plunger, and an electromagnet for attracting the armature and releasing said plunger, substantially as specified.

In testimony that I claim the foregoing as 55 my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT G. DUNFEE.

Witnesses:

FRED A. SOMERS,
LEWIS WADE.