

C. D. ENOCHS.
 COMBINED JACK AND DROP.
 APPLICATION FILED JULY 5, 1907.

949,820.

Patented Feb. 22, 1910.

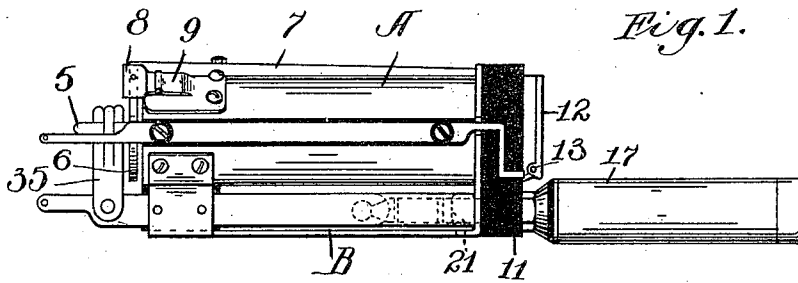


Fig. 1.

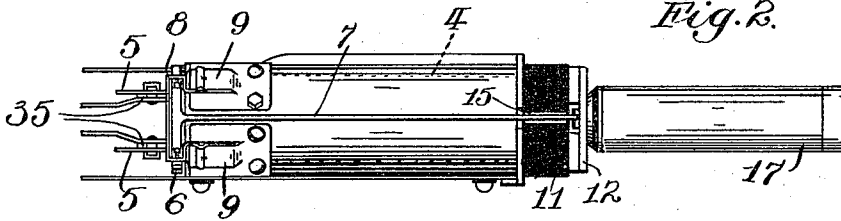


Fig. 2.

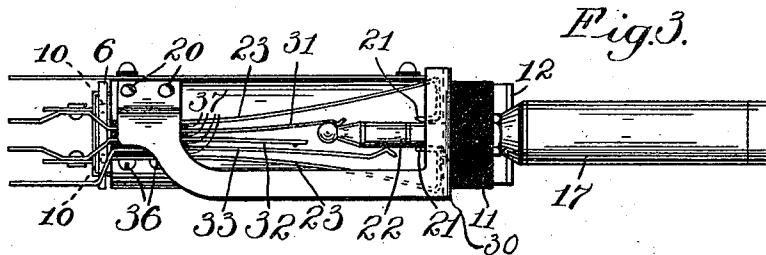


Fig. 3.

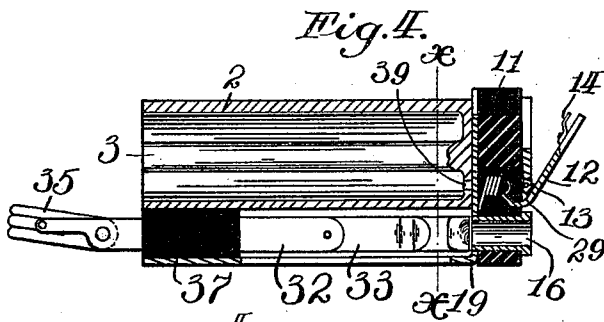


Fig. 4.

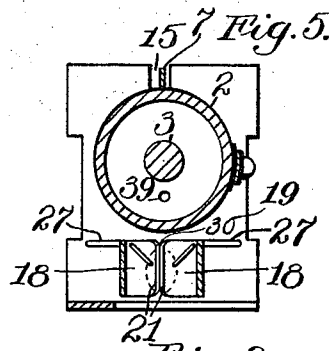


Fig. 5.

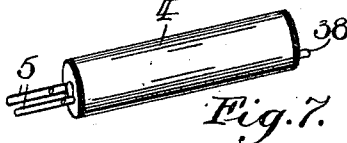


Fig. 7.

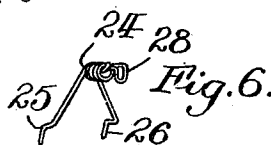


Fig. 6.



Fig. 8.

Witnesses:
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UNITED STATES PATENT OFFICE.

CLAUDE D. ENOCHS, OF LA CROSSE, WISCONSIN, ASSIGNOR TO THE VOTE BERGER COMPANY, A CORPORATION OF WISCONSIN.

COMBINED JACK AND DROP.

949,820.

Specification of Letters Patent.

Patented Feb. 22, 1910.

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To all whom it may concern:

Be it known that I, CLAUDE D. ENOCHS, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Improvement in Combined Jacks and Drops, of which the following is a specification.

My invention relates to a combined jack and drop for telephone switchboards and has among its objects to provide improved means whereby the drop coil can be taken out of its shell without opening any soldered or screw connections; restoring mechanism for the drop shutter which obscures the end of the armature tongue from view and can never exceed a certain amount of force in closing the shutter, no matter how hard the plug is inserted, and means for normally closing the socket of the jack.

A further object is the saving of time and labor in effecting repairs or changing the parts of the drop and jack.

To accomplish these objects and such others as may appear, the invention comprises certain novel combinations of parts hereinafter more particularly described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a side elevation of my invention; Fig. 2 is a plan view looking down; Fig. 3 is another plan view looking up; Fig. 4 is a longitudinal section of Fig. 1, showing the shutter open and the plug and drop coil removed; Fig. 5 is an enlarged sectional view taken on the line X—X of Fig. 4; Fig. 6 is a perspective view of the shutter spring; Fig. 7 is a perspective view of the drop coil, and Fig. 8 is a detail perspective view of the end of the armature latch.

In the drawings are included the drop mechanism A and the jack mechanism B, which are associated together in the usual manner to operate the drop shutter and make electrical connections with the various circuits.

2 represents a tubular shell, one end of which is closed and the other open and provided with a rigid core 3. A removable electromagnet or drop coil 4, having two rigid projecting terminals 5 on its outer end, is adapted to slip over the core and into the shell. The inner end of the magnet coil has a small point 38 which passes into an open-

ing 39 in the closed end of the shell and holds the coil from turning. The outer end of the core 3 is contiguous to an armature 6 and attracts it when the coil of the magnet is energized. This armature carries a latch bar 7 and is pivoted in a yoke 8 which is removably fastened to the shell by means of spring catches 9. The armature 6 has openings 10 through which the terminals 5 on the magnet coil project without coming into contact therewith.

The closed end of the shell is fastened to an insulating head block 11 which carries a swinging drop shutter 12. This shutter is pivoted in the usual manner, as at 13 and tends to fall into a horizontal position but is normally held up by the latch bar 7 which engages an indent 14 carried by the shutter. A tongue 29 is provided on the lower edge of the drop shutter and is turned into a channel 15 in the head block. Below the shutter is a socket 16, passing through the head block which is adapted to receive the connecting plug 17 in the customary manner.

Moving horizontally to close the socket 16 across the inner face of the head block is a pair of slides or guards 18 which are adapted to close together at the inner end of the socket. Between the inner end of the shell and the head block is a metal plate 19 which is bent back horizontally and attached to the open end of the shell by means of screws 20. The adjacent ends of the slides 18 are turned back to form guide faces 21 between which the sleeve 22 of the plug is adapted to pass when inserted through the socket. The slides are formed with spring arms 23 the tendency of which is to close the slides together over the inner end of the socket 16. A shutter closing spring 24 has its ends 25 and 26 attached to the slides 18 and working freely through slots 27 in the head block and plate 19. The spring 24 is coiled between its ends and formed with a loop 28 which is adapted to close the shutter 12 by impinging against a tongue 29 on the lower end of said shutter when the slides are spread apart by inserting the sleeve of the plug through the socket. When the plug is withdrawn from its socket the slides close automatically and the shutter is retained in closed position by means of the latch 7. When the drop is energized and the plug removed the latch bar disengages the shutter and allows it to fall. The meeting edges

of the slides are rounded at 30 to permit the end of the plug to easily spread them apart. The jack springs 31, 32 and 33 and the arms 23 of the slides are supported upon the end 5 of the plate adjoining the open end of the shell by means of screws 36 and are insulated from each other and said plate by pieces of fiber 37 or other suitable material.

The jack springs 31, 32 and 33 are of ordinary construction and are adapted to be connected with the line and magnet circuits in the customary manner. The tail pieces of the jack springs 31 and 33 are each provided with a connector 35 which is pivoted thereto and adapted to make metallic connection with the rigid terminals 5 of the drop coil. Each connector is split and preferably made of resilient material to cause a firm contact between it and the terminal 20 which it engages.

When it is desired to remove or repair the drop coil the connectors are swung down into the position shown in Fig. 4, the armature is removed by disengaging the yoke 25 from the spring catches and the drop coil may then be drawn out of the shell.

In accordance with the patent statutes, I have described the principle of operation of my invention, together with the apparatus 30 which I now consider to represent the best embodiment thereof, but I desire to have it

understood that the apparatus shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth, within the scope of the following claims. 35

Having described my invention, what I claim as new and desire to protect by Letters Patent, is:—

1. In apparatus of the class set forth, a head piece provided with a socket to receive a plug, a shutter, a pair of swinging spring guards normally closing over said socket having guide faces and disposed to be spread by the insertion of said plug in said socket and between the guide faces of said guards, and a connection between said shutter and guards, whereby the shutter is adapted to be reset when the guards are spread. 40 45 50

2. A device of the class set forth, comprising jack springs, a head block provided with a socket to receive a plug and a pair of spring slides normally closing said socket.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses. 55

CLAUDE D. ENOCHS.

Witnesses:

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