

(No Model.)

L. TOWNSEND & R. W. MOORE.

COMBINED SPRING JACK AND ANNUNCIATOR.

No. 310,749.

Patented Jan. 13, 1885.

Fig. 1.

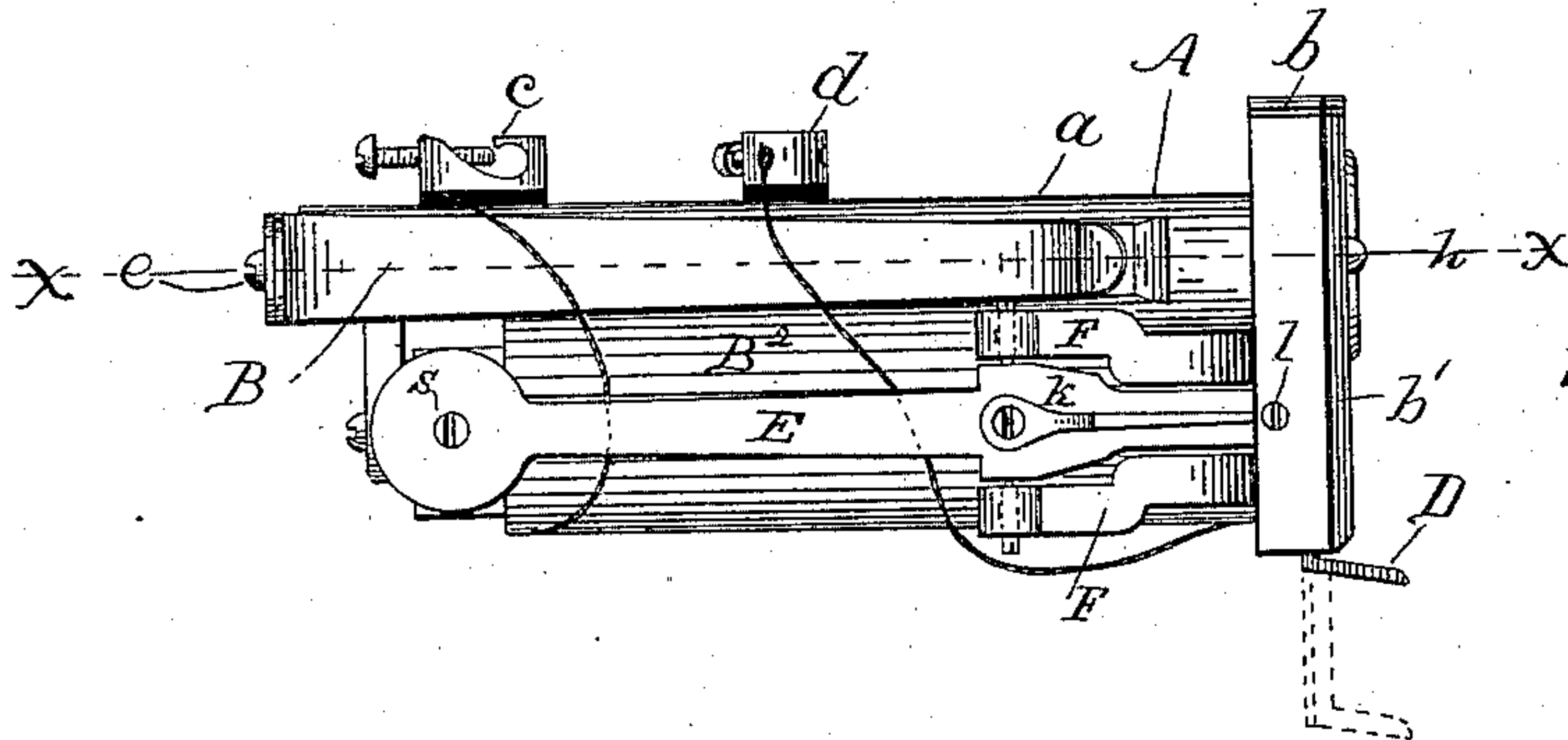


Fig. 2.

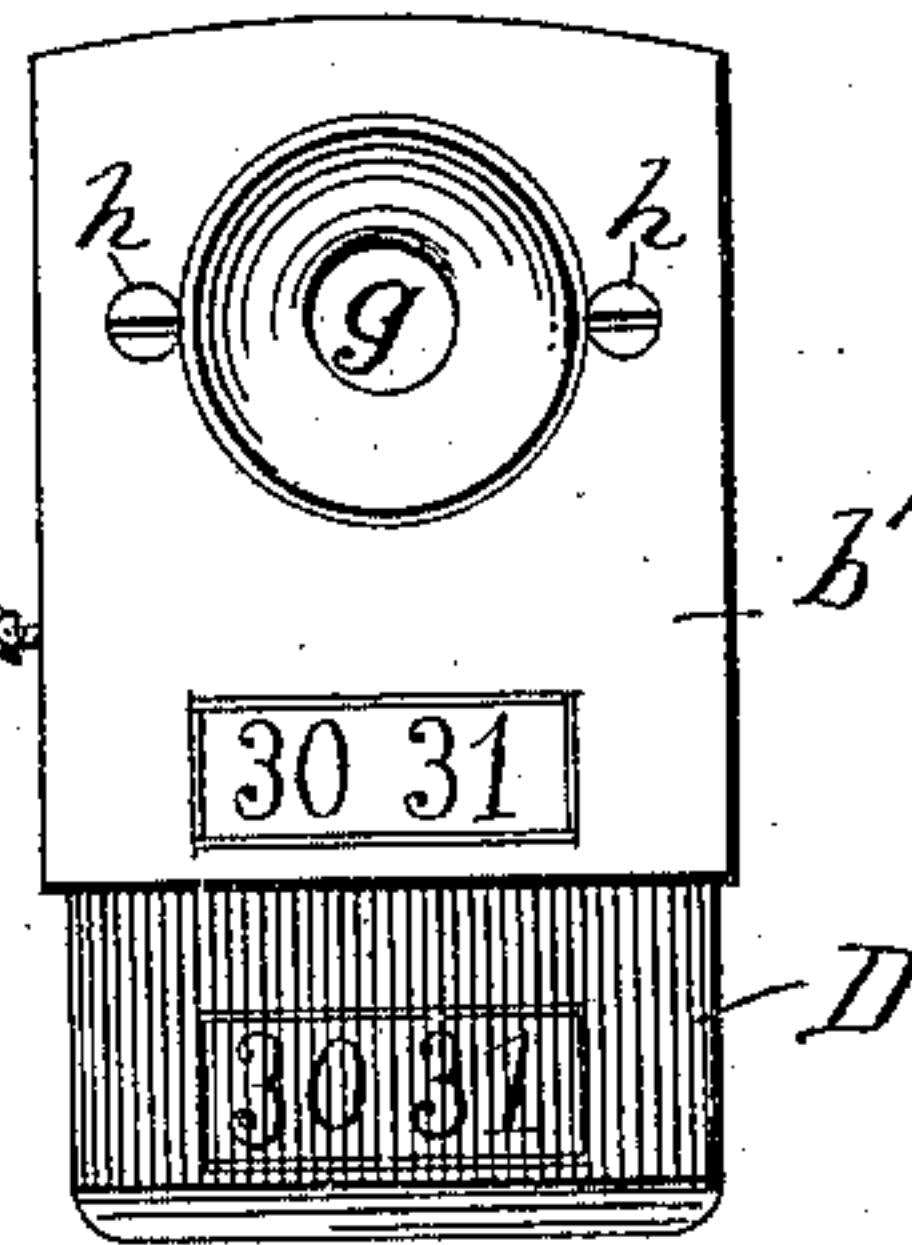


Fig. 3.

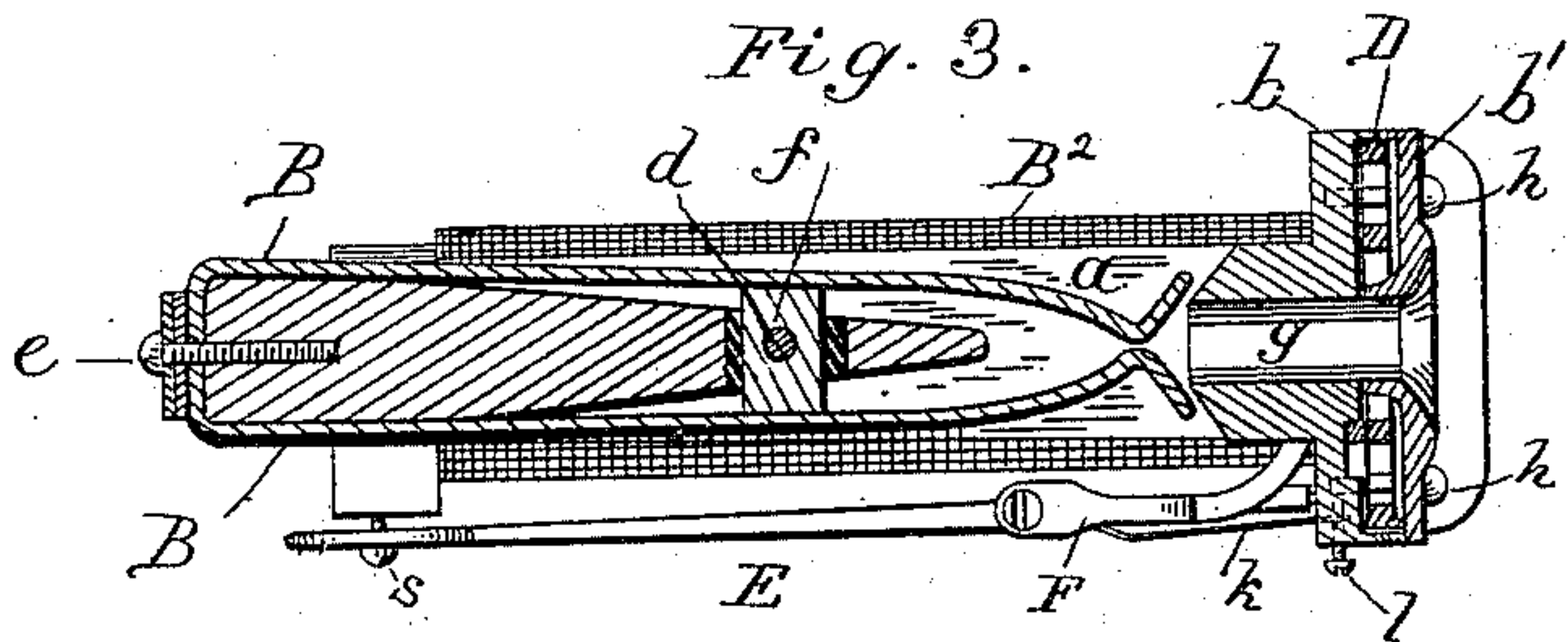


Fig. 4.

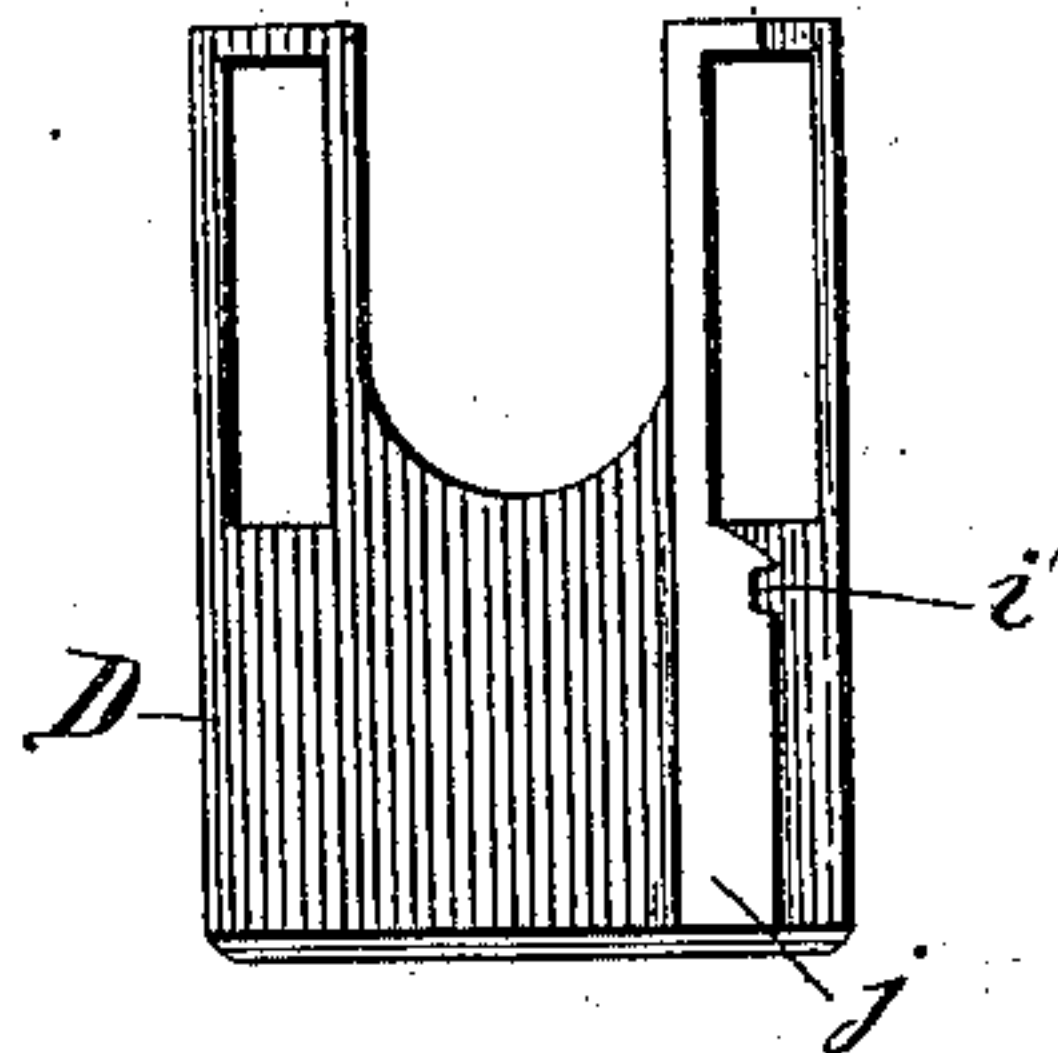
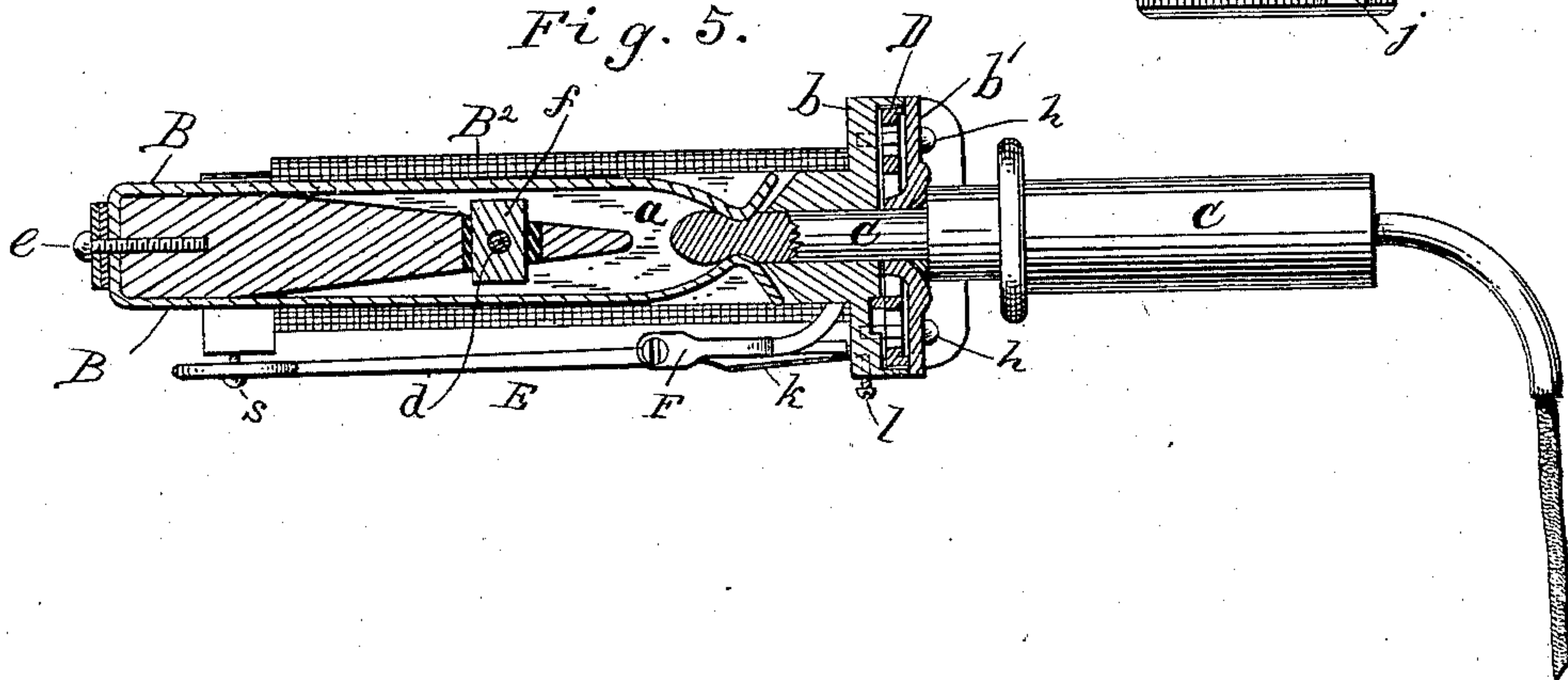


Fig. 5.



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# UNITED STATES PATENT OFFICE.

LOUIS TOWNSEND AND ROBERT W. MOORE, OF EVANSVILLE, INDIANA.

## COMBINED SPRING-JACK AND ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 310,749, dated January 13, 1885.

Application filed April 21, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, LOUIS TOWNSEND and ROBERT W. MOORE, citizens of the United States, residing at Evansville, in the county of Vanderburgh and State of Indiana, have invented certain new and useful Improvements in Combined Spring-Jack and Annunciator, of which the following is a description.

Figure 1 is a side view with the annunciator drop-plate housed within its case. Fig. 2 is a front end view with the drop exposed. Fig. 3 is a horizontal section through the line *x x* of Fig. 1, showing springs B closed upon block *f*. Fig. 4 is a rear view of the drop-plate; and Fig. 5 is a similar view to Fig. 3, with the plug C inserted between the springs B, breaking contact between the latter and the block *f*.

The primary object of our invention is to so combine a spring-jack and annunciator for connecting and making calls upon a telephone switch-board as to make both of them occupy only the space of one, and thereby save half of the space in the telephone switch-board, which is a result of great importance in telephone-exchanges.

To this end our invention consists in the combination of these two features on the same frame and in the nature of a single organization, and also in the peculiar construction and arrangement of parts, as will be hereinafter fully described.

In the drawings, A represents a metal frame consisting of a horizontal shank, *a*, and a hollow head, *b*.

Just beneath the shank portion *a*, and parallel with it, is secured an electro-magnet, B<sup>2</sup>, the wire from one end of which is connected to an open slotted seat, *c*, with binding-screw, and the wire from the other end of which electro-magnet is connected to the binding-screw *d*.

On each side the shank portion *a* of the frame is recessed, with a constantly-increased depth toward the front, and at the front end of said recesses a slot is formed entirely through the said shank.

To the rear end of the shank *a* there is fastened, by the same screw *e*, two springs, B B, which extend to the front, and are bent inward toward each other at a point opposite the slot. The open slotted seat *c* is insulated from the shank *a*, and so also is the binding-screw *d*;

but this binding-screw is connected about midway the shank to a metal block, *f*, which projects laterally on each side of the shank, and against which block the springs B B bear, as in Fig. 3. By making the seat *c* with an open slot the ground-wire may be lifted out, when desired, and need not be broken.

From the slot in the shank to the hollow head *b* there is a central bore or hole, *g*, adapted to receive the plug C of the telephone switch-board, and which plug, when inserted, presses apart the springs B B from each other, and also from the block *f*, breaking electrical contact therewith, as in Fig. 5. The hollow head *b* has a detachable face-plate, *b'*, attached thereto by screws, and this face-plate has a tapering hole in front to guide the plug C to its place between the springs B B.

In the hollow space between the head *b* and its face-plate is contained the sliding annunciator-drop D, bearing its appropriate number or letter. This drop-plate is extended up on each side of the plug-opening, and these two extensions are slotted (see Fig. 4) to give passage to the screws *h h*, which serve the double purpose of holding the face-plate on and preventing the drop from falling entirely out.

To the rear side of the drop-plate is attached a steel latch-bar, *j*, Fig. 4, having a notch, *i*, in its edge, with which notch there engages the forward end of a side lever, E. This lever is fulcrumed in offsetting-brackets F F, attached to the rear portion of the head-plate, and its front end is normally forced into the notch *i* of the bar *j* by spring *k*, backed by set-screw *l*, to hold the drop-slide up. The rear end of this lever is broadened to form an armature-plate, and the end of the core of the magnet is extended laterally and provided with a headed stud, *s*, which passes through the armature-plate, and whose head operates as a stop to the outward movement of the armature-plate. Now, with this construction, whenever the electro-magnet is charged by an electric impulse representing a call, it attracts the armature end of the lever, and this causes the forward end of the lever to move out of notch *i*, and the sliding drop-plate D, being then unsupported, falls and discloses its number. To restore the drop, it is simply pressed



up, and a bevel face beside the notch *i* forces the end of the lever back, and then allows it to pass into the notch again. With this construction it will be seen that the frame *a b* and springs B B, constituting the spring-jack, and the electro-magnet and drop, constituting the annunciator, are so compactly combined in one organization as to occupy only half the ordinary space. Now, the terminals of the circuit-wire being connected to the seat *c* and binding-screw *d*, whenever a call is made the electro-magnet is charged, the armature-lever is moved, and the annunciator-drop falls. The operator then places the plug C in the hole, and this in throwing the springs B B away from the metal block connecting with binding-post *d*, cuts out the electro-magnet and allows the current to pass from the wire seat *c* to the plug C.

If desired, we may place more than one coil beneath the shank and behind the head of the spring-jack.

Having thus described our invention, what we claim as new is—

1. The combination, with the shank and head *a b*, forming the main frame, and recessed, slotted, and apertured for the plug, as described, of the two springs B B, bent inwardly toward each other at the slotted portion, and an insulated block arranged in the shank portion to rest normally in contact with the springs, and connected with one of the binding-screws, as described.

2. The shank and head *a b*, the shank having its sides recessed and formed with a through-slot at the ends of the recess, and the head having a central aperture, as described, in combination with two springs arranged upon the opposite recessed sides of the shank, and bent inwardly toward each other at the through-slot, substantially as shown and described.

3. The hollow head *b*, having spring-jack opening through it, the slotted drop-slide, and the face-plate having screws which both attach the face-plate to the head and retain the drop-slide in the head, as set forth.

4. The combination, with the sliding drop and its attached notched bar, of the armatured lever and its spring and adjusting-screw, as and for the purpose described.

5. The combination of the hollow annunciator-frame having the opening *g* through the same, the vertically-sliding drop D, having slotted branches on opposite sides of said opening, the holding-screws *d d*, and a spring-jack arranged in rear of said opening, substantially as described.

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Witnesses:

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