

No. 632,749.

Patented Sept. 12, 1899.

F. M. RICHTER.
TELEPHONE SWITCHBOARD.

(Application filed Nov. 21, 1898.)

(No Model.)

FIG. 1.

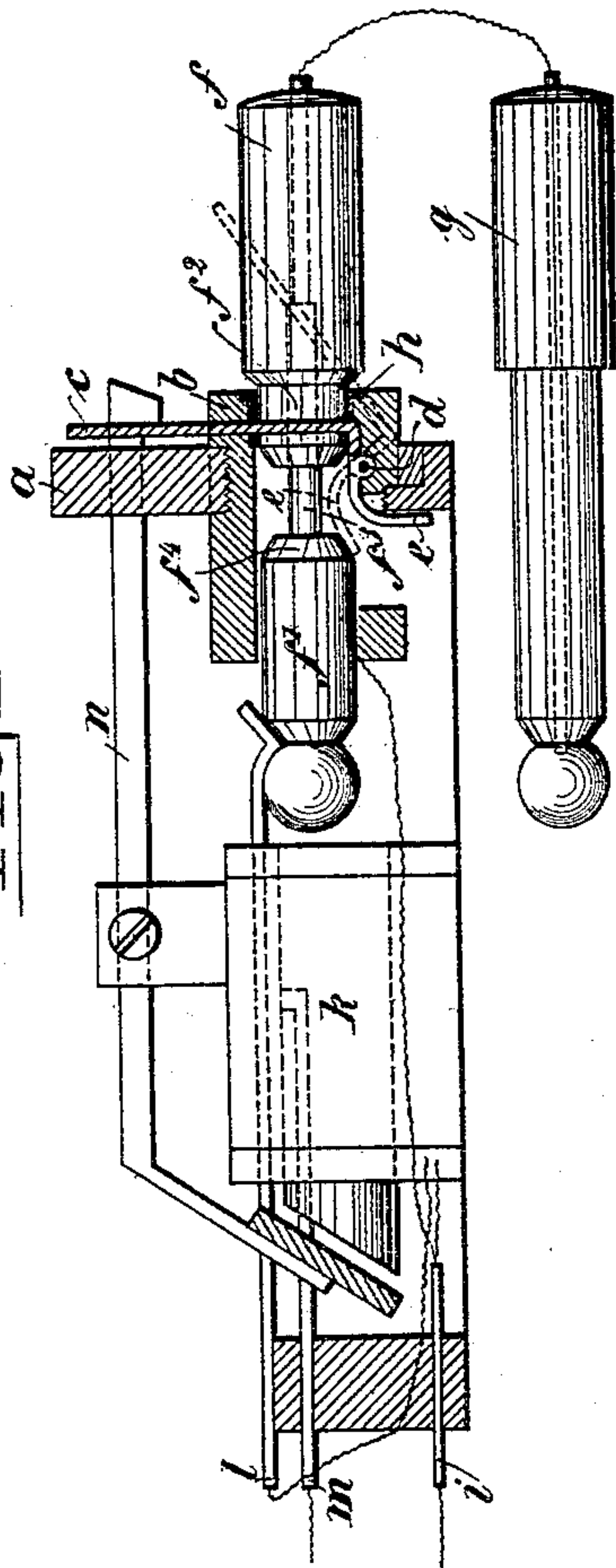


FIG. 2.

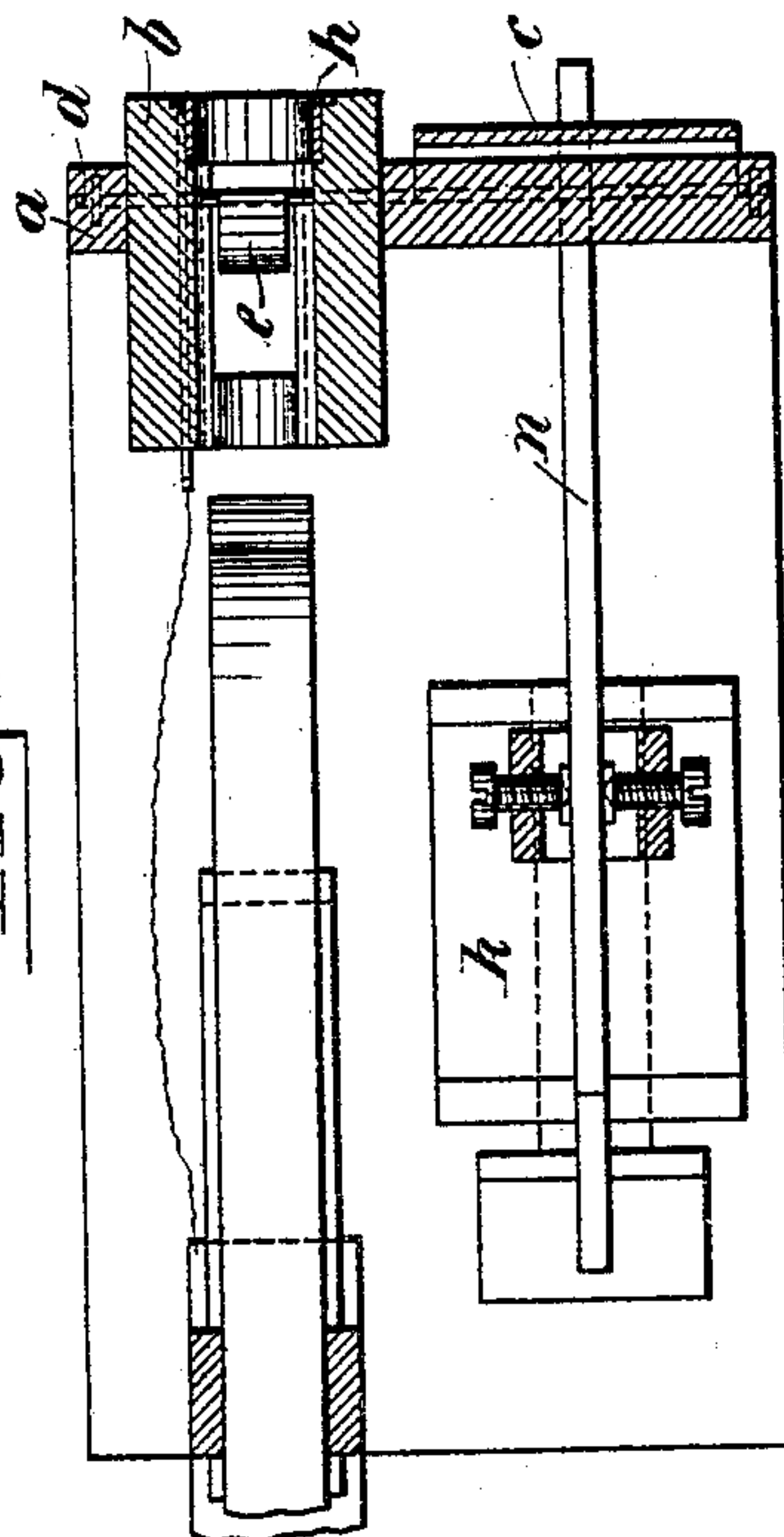
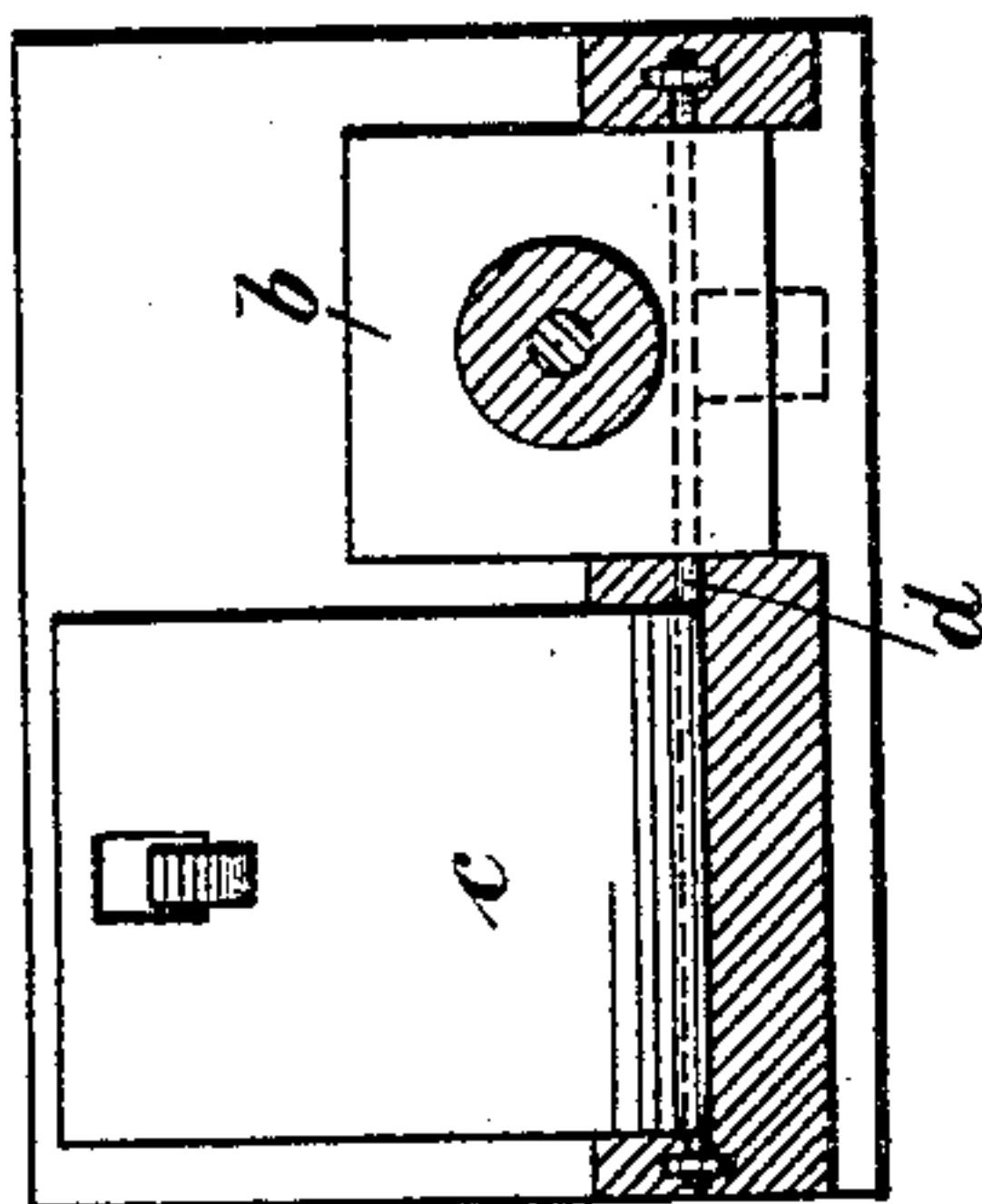


FIG. 3.



Witnesses:
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Att'y.

UNITED STATES PATENT OFFICE.

FRIEDRICH MAX RICHTER, OF CHEMNITZ, GERMANY.

TELEPHONE-SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 632,749, dated September 12, 1899.

Application filed November 21, 1898. Serial No. 697,082. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH MAX RICHTER, a subject of the King of Saxony, and a resident of Chemnitz, Saxony, Germany, have
5 invented certain new and useful Improvements in Telephone-Switchboards, of which the following is a full, clear, and exact description.

The present invention consists of a peculiarly-constructed plug for the switchboard of
10 exchange-stations in telephone systems, and the plug is constructed to cooperate with the annunciator-flap in such manner that the latter shall be raised or returned to its normal
15 position both when the plug is inserted and also when it is withdrawn.

In order to render the present specification more easily intelligible, reference is had to the
20 accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a section through the part of the switchboard necessary to illustrate the
25 present invention. Fig. 2 is a sectional plan of the same part of the switchboard, and Fig. 3 a front sectional elevation of the annunciator-flap and the sleeve for the plug.

As is well known, when the exchange-station is called the magnet *k* attracts the armature of the swinging lever *n*, raising the hook
30 of the same and allowing the annunciator-flap *c* to fall. The same action takes place when the caller gives the signal to the exchange-office that the call is ended; and the
35 object of the present invention is to provide a plug which shall return the flap to its normal or raised position both when the plug is inserted to form the connection for the parties speaking and also when it is withdrawn
40 after the conversation has been concluded.

It should be mentioned here that the electric connections of the switchboard, as also the contact-surfaces of the plug, are the same
45 and operate in exactly the same manner as already known, so that further description of the electric connections is not necessary here.

In order to connect up the lines of the parties wishing to speak, two different plugs are employed, the one, *f*, being inserted into the
50 sleeve of the switchboard of the caller and the smooth plug *g* being inserted into that of the

party called. The latter sleeve is of the ordinary construction.

The flap *c* is mounted at the side of the plug-sleeve *b*, and the pivot of the said flap
55 is prolonged to extend underneath the said sleeve. A cam *e* is fast on the said pivot at the point of the same which lies underneath the sleeve, and the said cam *e* extends into
60 the sleeve through an orifice in the same, and consequently into the path of the plug, inserted when the flap is down. The cam is advantageously formed of a piece of bent
65 metal, and one surface of the same extends at right angles to the flap from the pivot thereof, the other or end surface being bent round in a curve at approximately right angles
70 to the first surface, so that when the flap falls, as shown in dotted lines in Fig. 1, both the cam-surfaces will lie as a ridge in the path of the plug *f*.

The plug itself is formed with a front end
75 *f'* of the usual construction, having a knob to operate one of the contact-springs in the well-known manner; but at that part which when the plug is in the sleeve coincides with
80 the position of the cam-surfaces of the flap-pivot, a waist *f*³ is formed, into which waist the cam of the flap-pivot may extend when the flap is down. At each end of the waist
85 the shoulders of the plug are rounded or beveled, so as to engage the cam-surfaces, as indicated at *f*⁴. The plug *f* is provided with an insulating-ring at *f*², and the sleeve *b* has
90 a contacting ring *h* to make contact when the plug *g* is inserted in the usual manner. The
95 two plugs *f* and *g* are connected by conductors in the usual manner.

When the exchange-office is called, the flap
100 *c* of the switchboard at the caller's number will fall, as indicated in dotted lines in Fig. 1. If the operator inserts the plug *f*, the front end of the same will meet the forward cam-surface of the flap-pivot and turn the same down, thus erecting the flap. When the
105 caller gives the signal that the conversation is ended, the flap *c* again falls in the well-known manner, and again as the operator withdraws the plug *f* the front shoulder *f*⁴ of the same operates against the rear cam-surface of the cam *e* and returns the flap to its
110 normal or raised position.

I claim as my invention—

In combination with the switchboard of an exchange-office of telephone systems, a pivoted annunciator-flap and a plug-sleeve
5 mounted side by side, the pivot of the flap extending just underneath the sleeve-orifice, a cam fast on said pivot having two cam-surfaces adapted, when the flap is down, to form
10 of the plug in the sleeve, and a plug *f* having a waist with shoulders, between which the said ridge lies, when the flap falls and the

plug is in the sleeve, said plug being adapted to push the cam to raise the flap when inserted and to operate against the opposite 15 side of the cam-ridge with its shoulder when withdrawn to again raise the flap substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRIEDRICH MAX RICHTER.

Witnesses:

RUDOLPH FRICKE,
B. H. WARNER, Jr.