

(No Model.)

H. M. FISK.  
TELEPHONE SWITCHBOARD.

No. 559,348.

Patented Apr. 28, 1896.

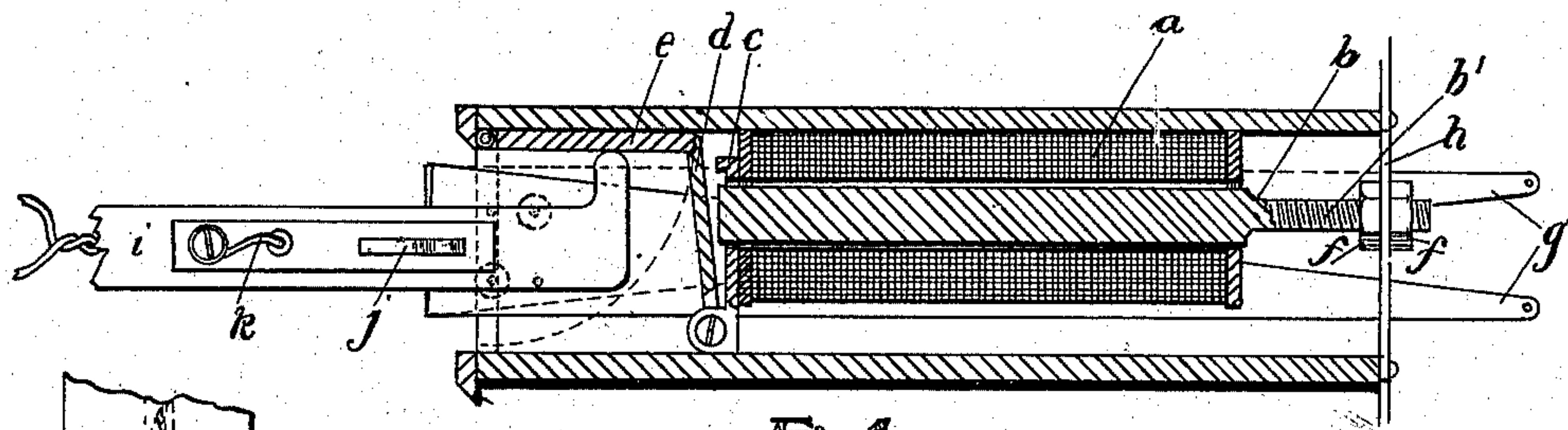


Fig. 1.

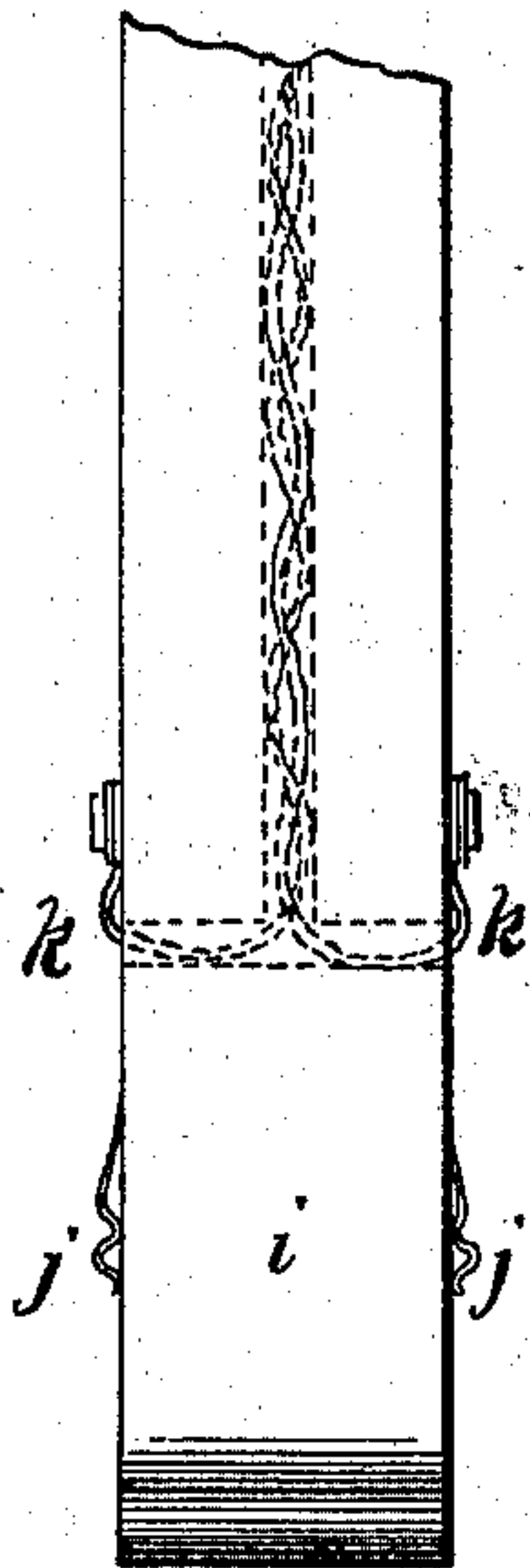


Fig. 2.

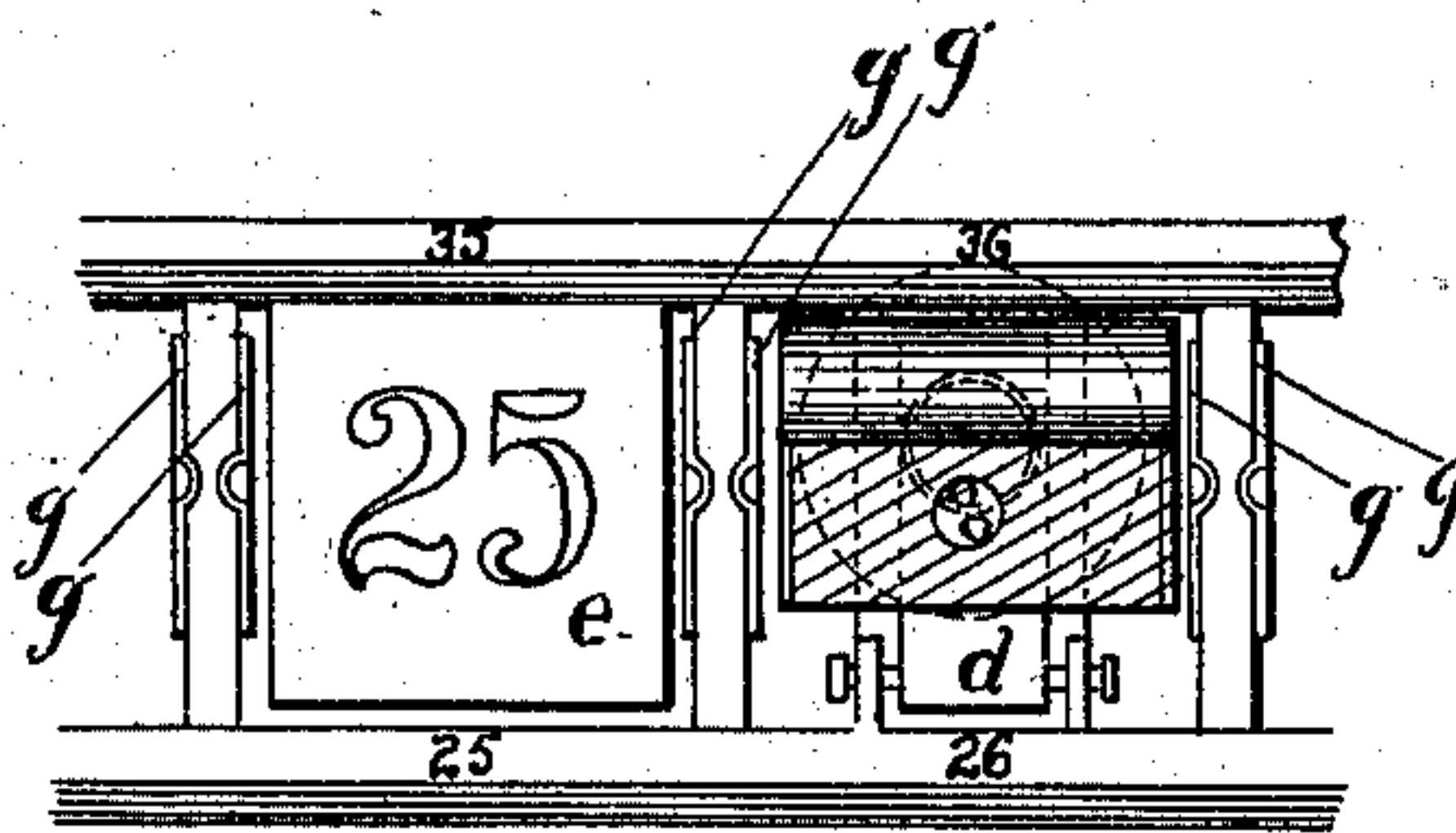


Fig. 3.

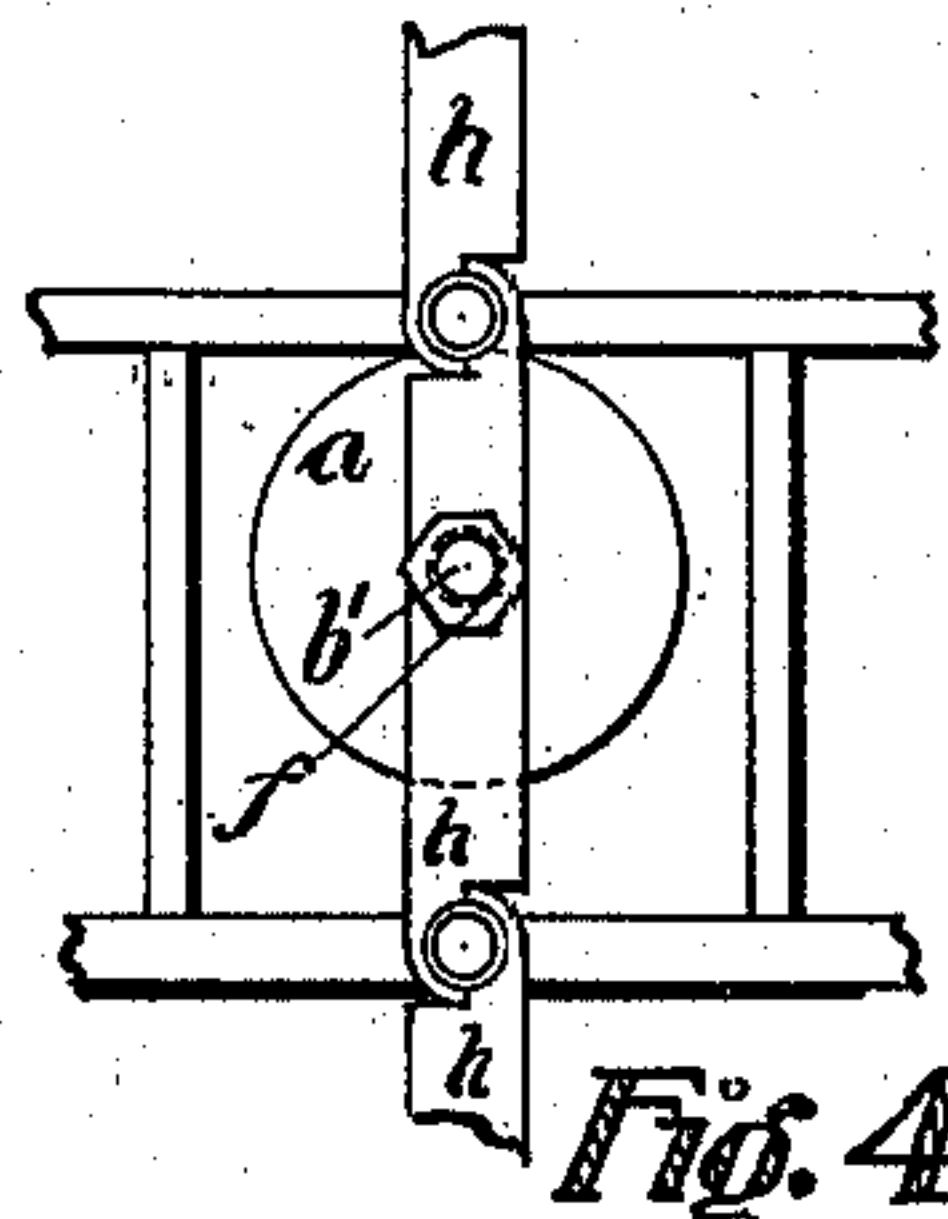


Fig. 4.

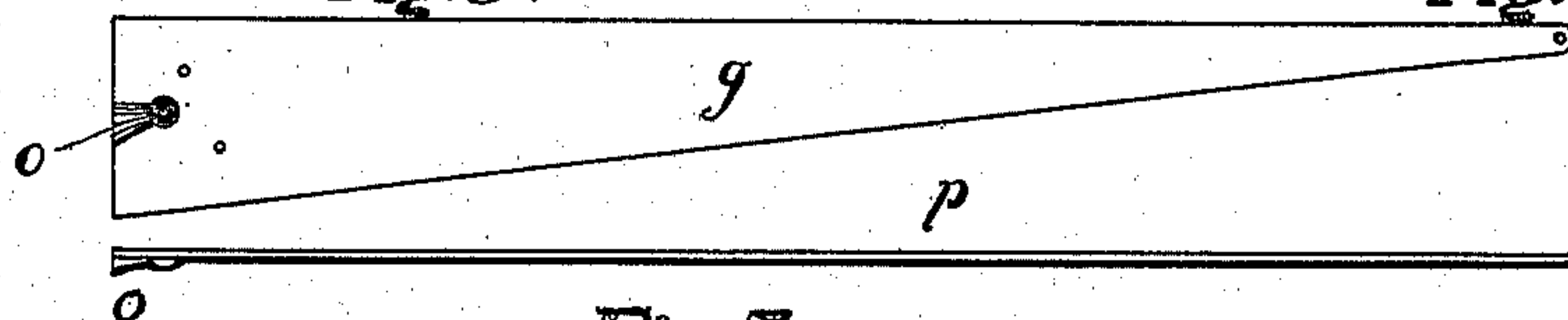


Fig. 5.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY M. FISK, OF AUSTIN, ILLINOIS.

## TELEPHONE-SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 559,348, dated April 28, 1896.

Application filed May 27, 1895. Serial No. 550,898. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY M. FISK, a citizen of the United States of America, residing at Austin, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Switchboards for Telephone-Exchanges, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to subscribers' signals in combination with a connecting or switching device commonly designated a "spring-jack."

Figure 1 represents a side sectional view of drop, showing plug inserted and drop restored. Fig. 2 represents combination spring-jack and plug, showing manner of connecting cords. Fig. 3 represents drop in a fallen position, also end view of magnet, showing pivoting of armature and means of connecting combination-plug with extensions of line. Fig. 4 represents an end view of magnet, showing means of attaching and adjusting the same. Fig. 5 represents a side and top view of extension of line from back to front of board.

In Fig. 1, *a b c d* represent an electromagnet, of which *a* is a winding of fine wire of any desired resistance. *b* is an iron core provided at the back end with a threaded portion *b'*. *c* is a brass or other non-magnetic metal plate provided with lugs and screws for pivoting armature *d*, also bent out at top end to a point slightly beyond end of core to prevent armature from sticking to core after current is shut off. *e* represents shutter or drop in normal position with top of armature *d* under lower corner supporting the same. *f f* represent adjusting-nuts bearing on back plate *h* and means for the proper adjustment of armature to shutter or drop. *g g* represent means for extending subscriber's circuit from back to front of board, and more fully represented in Fig. 5. *i* represents insulated handle portion of combination plug and spring-jack. *j* represents one of the sides of combination plug and spring-jack made of some conducting material and provided with means of connection with extension *g* and one side of cord *k*.

In Fig. 2, *i* represents an insulating material forming part of combination plug and spring-jack, provided with an extension curv-

ing upward for restoring shutter or drop to its normal position. *j j* represent metallic strips provided with means of connection with extension-cords *k k* and also for connection to extension of lines on switchboard.

In Fig. 3, *e* represents shutter or drop in a fallen position and indicating a call from subscriber of same number. *g g g g g g* represent end view of extensions of line, showing depressions in center as means of connecting to springs of combination plug and jack. *d* represents a partial view of armature, showing means of pivoting to end of magnet.

In Fig. 4, *h* represents plate screwed to frame at top and bottom and used for supporting adjusting-nuts *f f*.

In Fig. 5, *g* represents a side view of extensions for line. *o* represents a depression for inserting combination plug and jack and furnishes means for holding the same and connecting metallically subscriber's line with flexible cord. *p* represents top view of extension, showing form of depression *o*.

The operation of my invention is as follows: Either by connecting up subscriber's line one side to one extension *g*, Fig. 1, and the other side to ground and connecting other extension to ground, or by what is known as "common return system," or a metallic circuit, you have the following results: In sending an electric current through line it passes through winding and energizes magnet, causing armature *d* to be attracted toward end of core *b*, releasing the shutter or drop *e*, allowing it to fall, as in left-hand portion of Fig. 3, which notifies operator, who will insert the combination plug and spring-jack and restore drop to normal position and extend circuit to flexible cord for connection to number desired.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination in a telephone-switchboard of an electromagnet and a drop or a shutter in front of it with connecting or extension points in front of the shutter, and a thin plug attached to a flexible cord and made to lock into the connectors or extension-points substantially as specified.

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Witnesses:

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KIMBALL H. COTTLE.