

(No Model.)

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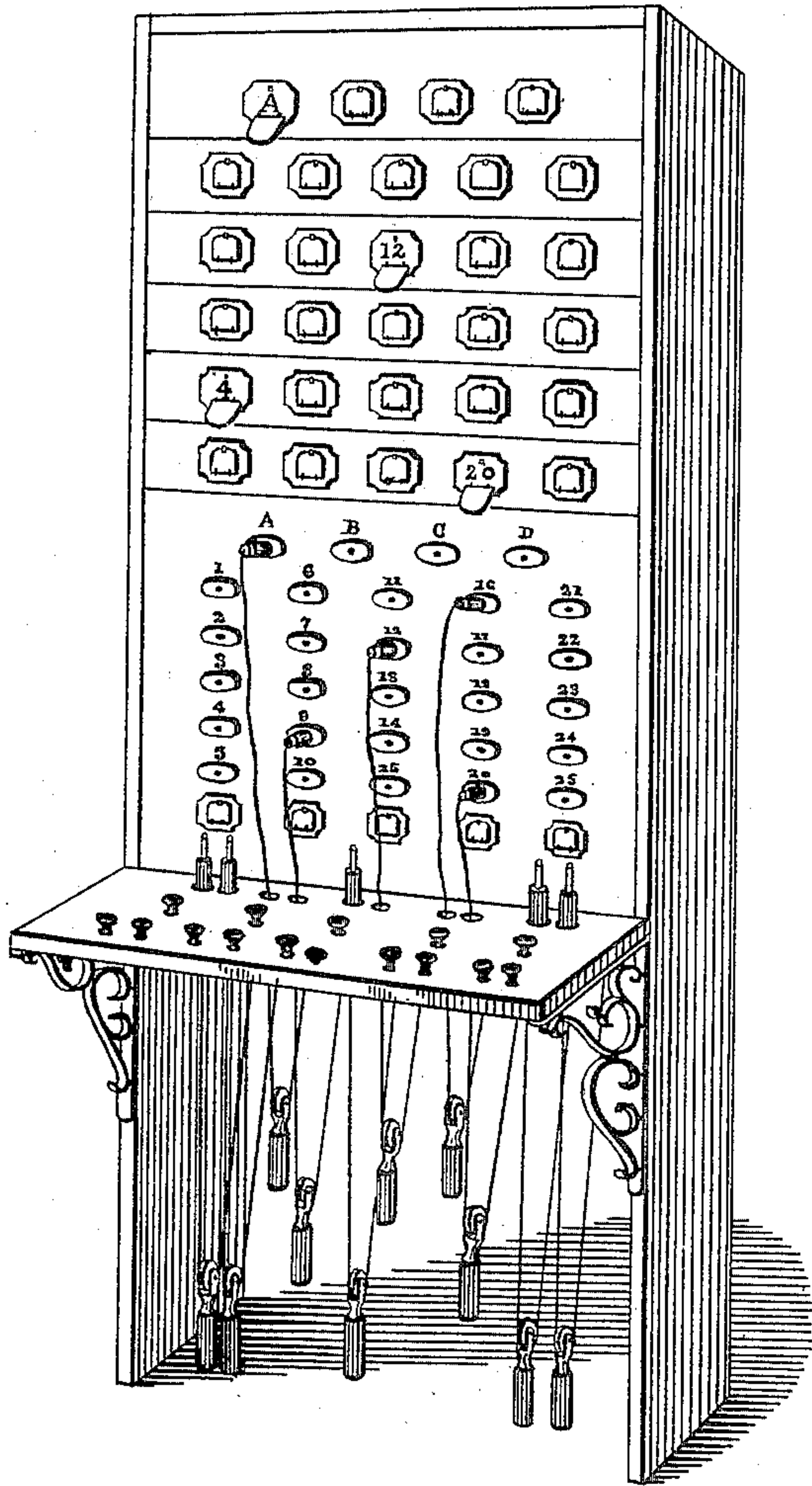
C. E. SCRIBNER.

OPERATOR'S APPARATUS FOR TELEPHONE EXCHANGES.

No. 330,058.

Patented Nov. 10, 1885.

Fig. 1



Attest

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(No Model.)

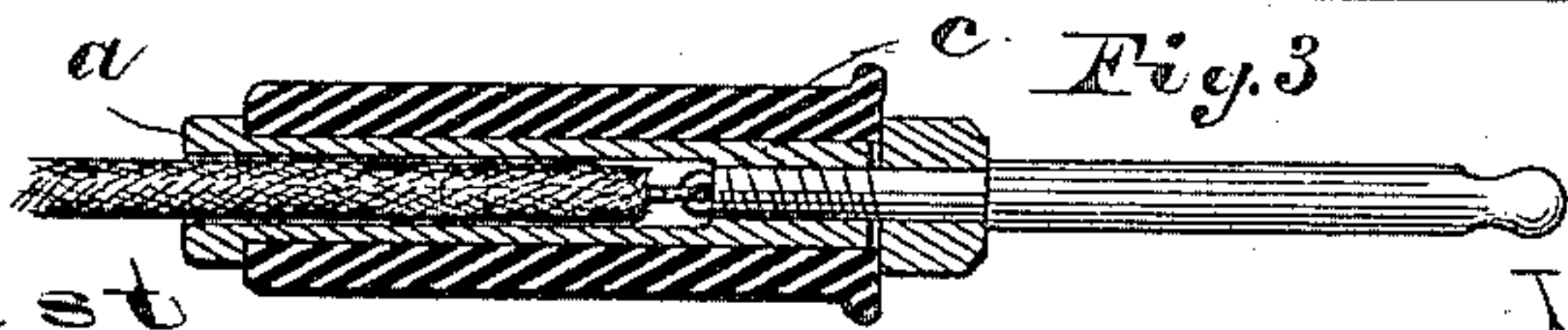
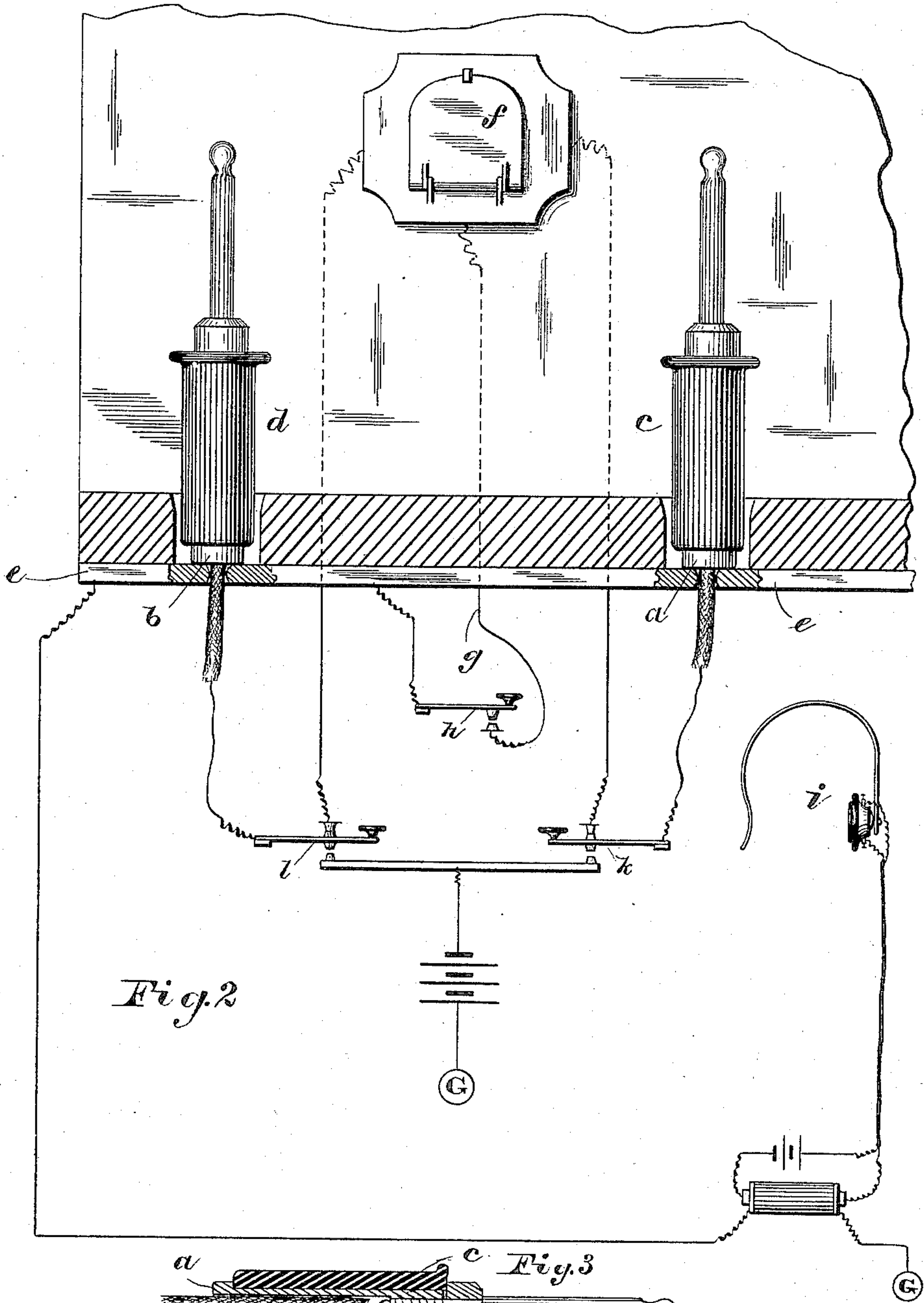
2 Sheets—Sheet 2.

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OPERATOR'S APPARATUS FOR TELEPHONE EXCHANGES.

No. 330,058.

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Inventor

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UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
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OPERATOR'S APPARATUS FOR TELEPHONE-EXCHANGES.

SPECIFICATION forming part of Letters Patent No. 330,058, dated November 10, 1885.

Application filed June 11, 1883. Serial No. 97,672. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Operator's Apparatus 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 the circuits and switching devices at the central office of a telephone-exchange, and is designed to be used with any of the well-known switch-board systems.

My invention consists in a connecting-piece with which the different pairs of plugs are normally in electric contact, as herein described and claimed. Heretofore it has been necessary to press upon a key in order to bring the operator's telephone into the circuit of a subscriber's telephone-line. In Patent No. 247,199, granted Milo G. Kellogg, September 20, 1881, one of the well-known systems is shown.

My invention is designed to enable the operator to converse at once with a subscriber as soon as one of a pair of plugs is inserted in the said subscriber's switch without further work on the part of the operator, and also to enable the operator to disconnect his telephone automatically when the second plug of the pair is lifted for insertion in the switch of the second subscriber, while at the same time the operator is provided with all the facilities heretofore employed for receiving the calls, signaling, and making the connections and disconnections.

My invention is illustrated in the accompanying drawings, in which Figure 1 is a perspective view of a standard switch-board, to which my invention may be applied. Fig. 2 is a detailed diagram of my invention, and Fig. 3 is a detailed view of one of the connecting-plugs.

The switch-board shown in Fig. 1 is provided with annunciators and switches 1 2 3, &c., for twenty-five local telephone-lines and four annunciators, and switches A B C D for through lines, or "trunk" or "toll" lines, as

lines connecting with other exchanges are sometimes called.

Lines connecting different divisions or districts of the same exchange are usually called "trunk lines." Those extending to other exchanges are termed "toll lines," and a toll line extending to two or more exchanges is termed a "through line."

Five clearing-out annunciators, with corresponding pairs of plugs and cords and keys, are shown. The operator's telephone outfit also may be the same as heretofore employed.

Two pairs of plugs and cords for every ten subscribers is found sufficient.

In Fig. 2 the metallic portions *a b* of the pair of plugs *c d* rest upon the connecting-piece *e*. The clearing-out annunciator *f* is included in the circuit of the cord connecting the plugs. These cords are weighted so that the metallic portions of the plugs are held against the connecting-piece, while the cords are kept out of the way, as usual. The third leg or half-connection *g* is connected, as usual, between the two spools of the clearing-out annunciator, and provided with the key *h*, which, on being depressed, taps the circuit of two connected subscribers, who have been connected by the plugs, to ground through the operator's telephone *i*. The signaling-keys *k l* are also provided, and are operated in the usual manner. It will be seen, however, that it will seldom be necessary to use the key *h*, since when one plug of a pair is inserted in a subscriber's switch a connection is made with the operator's telephone through the medium of the metallic portion of the other plug of the pair which is in contact with the common connecting-piece. Thus, suppose plug *d* were lifted and inserted in a subscriber's switch, the connection of said subscriber's line could then be traced by the cord of said plug through the clearing-out annunciator and to the plug *c*, as shown, and thence, as shown, to the connecting-piece *e*, and thence through the telephone *i*, to ground. As soon as the operator finds out which other subscriber is desired, he lifts plug *c* and inserts it in the switch of the subscriber called for. The two subscribers are thus connected together and automatically disconnected from the operator's telephone.

In Fig. 1 switches 16 and 20 are shown thus connected.

By depressing key *h* it is evident that the operator can listen out as usual in case the subscribers neglect to send in the clearing-out signal.

I have thus described my invention in connection with a single switch-board. It is, however, apparent that my invention may be applied to multiple systems by simply duplicating the apparatus herein described, or with such modifications as an ordinary mechanic would readily understand and suggest.

In multiple systems each operator's telephone would be connected with a common connecting-piece, with which all the plugs of the switch-board of said telephone would be normally in contact.

Having thus described my invention, I claim as new and original—

1. The combination, with a pair of cords and terminal plugs, of a subscriber's switch, in which one of said plugs is inserted, a telephone in a circuit, extending to a ground-connection from a connecting-piece common to the circuit of said telephone, and to the other of said pair of plugs, whereby connection is maintained from said subscriber's switch with the telephone, said connection being broken when said other plug is lifted from the common connecting-piece.

2. The combination, with the switch-board of a telephone-exchange, of a pair of plugs and flexible cords, one of said plugs being adapted to be inserted in a switch upon the switch-board, while the metallic portion of the other plug remains in contact with the common connecting-piece of the operator's telephone, said telephone being placed in the circuit between said common connecting-piece and the ground at the central office, whereby the circuit is closed through said telephone, substantially as and for the purpose set forth.

3. The combination of pairs of plugs each provided with a metallic portion, said portions being adapted to be held in contact with a common connecting-piece by means of weights, conducting-cords, and the telephone-switches upon the switch-board, whereby when one of a pair of plugs is inserted in a switch the line of said switch will be connected through the operator's telephone, said telephone being disconnected automatically when the other plug of said pair is raised to be inserted in a second switch.

In witness whereof I hereunto subscribe my name this 6th day of June, A. D. 1883.

CHARLES E. SCRIBNER.

Witnesses:

PAUL A. STALEY,
G. P. BARTON.