

(No Model.)

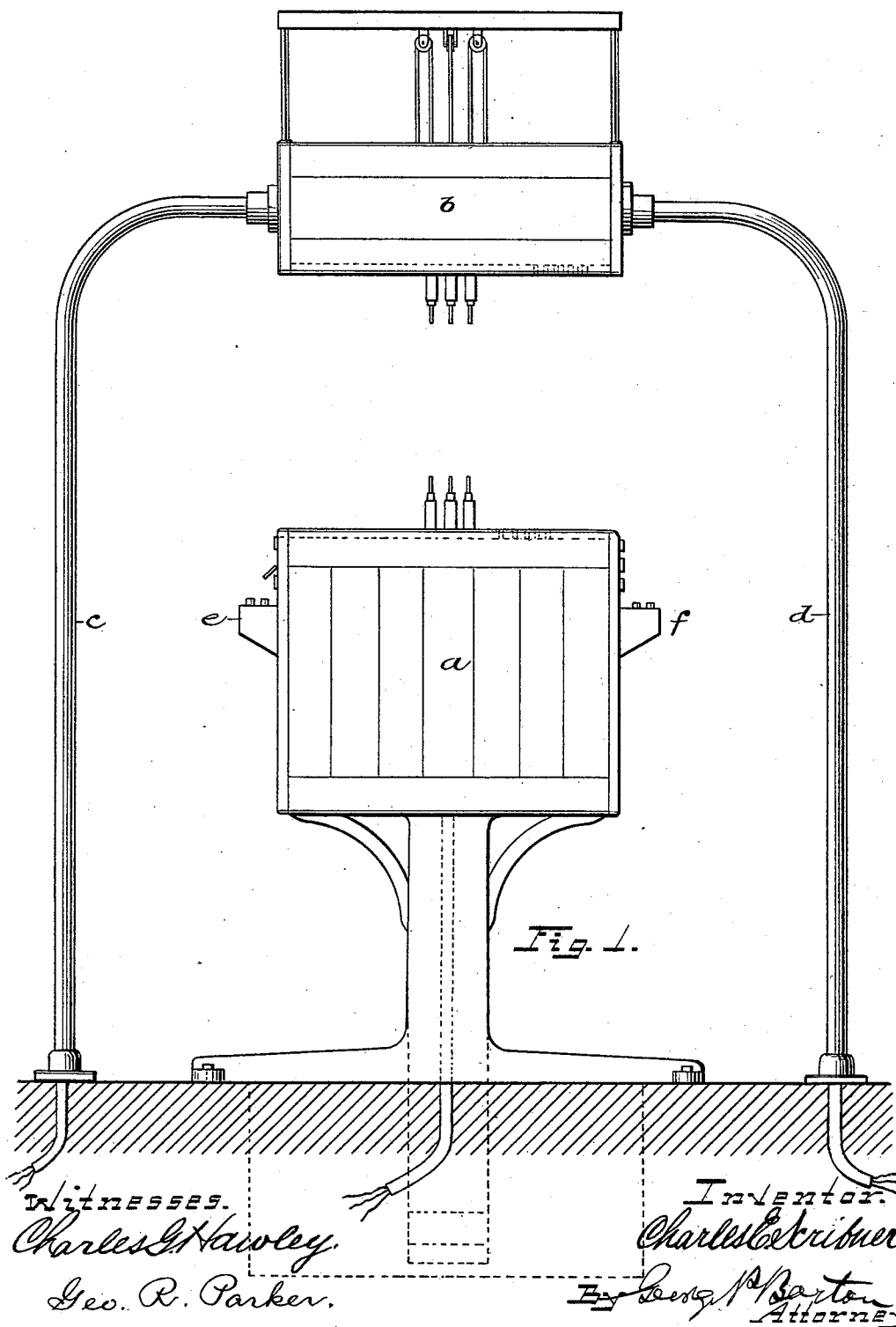
2 Sheets—Sheet 1.

C. E. SCRIBNER.

CANOPY TELEPHONE EXCHANGE SWITCHBOARD.

No. 472,956.

Patented Apr. 12, 1892.



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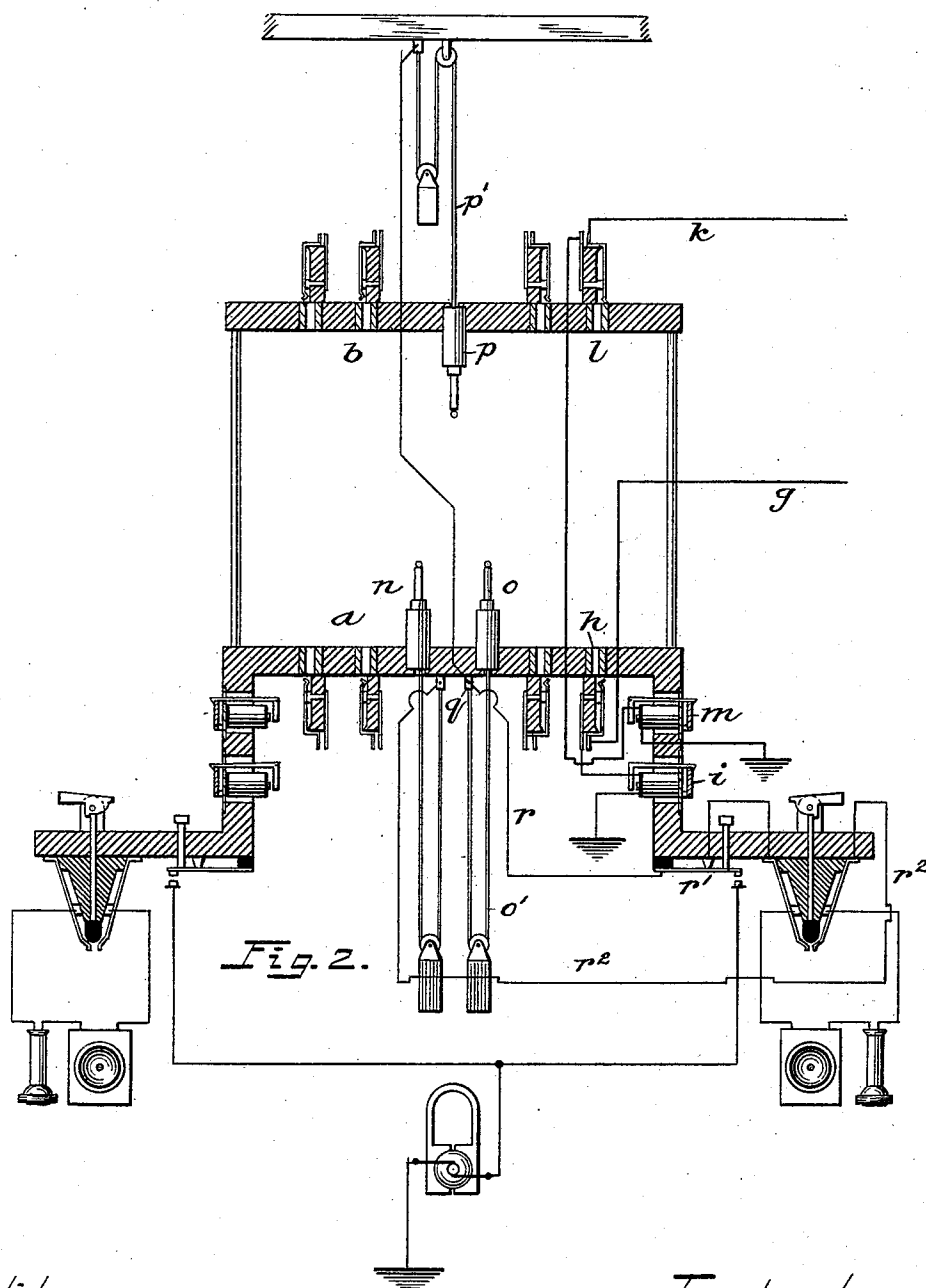
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Witnesses.

Charles G. Hawley.
Geo. R. Parker.

Inventor.
Charles E. Scribner.
By George A. Barton
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

CANOPY TELEPHONE-EXCHANGE SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 472,956, dated April 12, 1892.

Application filed November 22, 1889. Serial No. 331,203. (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 Canopy Telephone-Exchange Switchboards, (Case No. 213,) 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 switchboard apparatus of telephone-exchanges; and its object is to so dispose and classify the switches of the different subscribers that many may be brought within easy reach of the same operator.

Speaking generally, my invention consists in placing a portion of the switches of the different subscribers' lines upon a table and another portion upon a canopy-board placed above the table, together with sets of cords and plugs so arranged that the operators may make connection between the different lines without crossing the cords between the two boards—that is, between the board below, which may be in the form of a table or otherwise, and the board above, which may be in the form of an inverted-table switchboard. I provide sets of plugs and cords, each set consisting of three plugs, one plug of the set being designed as the answering-plug, while the other two plugs are placed one at the canopy-board and the other upon the table and provided with corresponding connections, so that the operator may use one of these two plugs to make connection with a line called for on the board below, while the other is used for making connection with the line called for upon the canopy-board.

I preferably support the canopy-board upon gas-pipes, utilizing the pipes as conduits for the wires. The table is preferably constructed so that two operators may work together, one being placed on each of the opposite sides thereof.

I shall describe my invention as applied to single or grounded circuit-line systems. It is evident, however, that my invention, broadly considered, is not limited to any particular

manner of running the circuits or making the connections between the different lines.

My invention will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a general view showing the table-switchboard and the canopy-board supported above the same upon gas-pipes. Fig. 2 is a diagram illustrative of the circuits.

The telephone-lines are divided into groups, the switches of one group—as, say, from one hundred to two hundred and fifty—being placed upon the table *a*, while the switches of lines numbered above two hundred and fifty, for example, will be placed in the canopy-board *b*. The cables containing the wires running to the table-board may be run from below through the center of the standard supporting the same or in any other convenient manner. The cables containing the wires running to the canopy-board are preferably run through gas-pipes *c d*, which serve also as supports for the canopy-board. These gas-pipes are preferably bent outwardly, as shown, so as to give room for the operators. The operator's loop-keys and calling-keys are preferably placed upon shelves *e f*, as shown. The individual annunciators of all the lines to be answered by a given operator are placed on the panel directly above her table. Each telephone-line will include in its circuit at the central office a spring-jack switch and an individual annunciator. Thus, as shown in Fig. 2, the telephone-line *g* is connected through spring-jack switch *h*, and thence through its individual annunciator *i* to ground.

Telephone-line *k* is connected through a switch *l* upon the canopy-board and thence through its individual annunciator *m* in front of one of the operators to ground.

Each operator will be provided with several sets of plugs and cords. I have shown only one such set of plugs and cords. The plug *n* may be considered as the answering-plug and the other two plugs *o p* as the connecting-plugs—that is to say, the plugs which are used in making connection with a called subscriber's switch. The plug *o* is used for making connection with the switch of a line hav-

ing its spring-jack upon the table, while the plug *p* is used for making connection with a line having its switch in the canopy-board. These two plugs *o p* are provided each with a flexible branch or strand, these strands *o' p'* uniting at point *q* and extending thence by wire *r* through the calling-key *r'*, through the loop-switch to wire *r*², leading to the strand of the answering-plug. Only one of these two plugs will be used at the same time, and when either is inserted in the line the generator may be closed to said line by operating the key *r'*.

My invention as thus described is especially adapted to exchanges of moderate size—say exchanges having five hundred subscribers—since all of the switches of the lines may be brought within easy reach of the operators, placed upon the different sides of the table. In an exchange of this size four operators might be required, two on each side of the table, each being provided with a telephone-set and with, say, ten sets of cords, and each being required to answer the calls of a particular group of subscribers—that is to say, the group having their annunciators directly in front of the particular operator.

My invention admits of various modifications which would readily suggest themselves to those skilled in the art, and I therefore do not limit my invention to the details of construction shown.

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

1. The combination, with a switchboard containing the switches of a portion of the telephone-lines of an exchange, of a canopy-board placed above said switchboard, said canopy-board containing the switches of other lines of the exchange, substantially as and for the purpose specified.

2. A set of connecting cords and plugs, consisting of three or more plugs and cords, one of said plugs serving for an answering-plug, the said answering-plug being branched to said two or more plugs through a calling-key, said two or more plugs being placed at differ-

ent points, whereby the subscribers may be connected together at different points and the second subscriber called, no matter which of the connecting-plugs be used.

3. The combination, with two telephone-lines, each passing through its spring-jack switch and annunciator to ground, of a switchboard containing one of said spring-jack switches and placed above said board, a canopy-switchboard containing the other of said spring-jack switches, and connecting plugs and cords, whereby said telephone-lines may be connected together without crossing the cords between said switchboard and said canopy-board.

4. The combination, with a switchboard containing the switches of a portion of the telephone-lines of an exchange and containing the individual annunciators for all the lines of the exchange, of a canopy-switchboard placed above said switchboard and containing the switches of a portion of said telephone-lines, substantially as and for the purpose specified.

5. Two groups of telephone-lines, one group being provided with spring-jack switches on a canopy-switchboard and with individual annunciators upon a board below the canopy-board, and the other group being provided with switches and annunciators upon the said lower board, whereby the switches of said telephone-lines are concentrated, substantially as and for the purpose specified.

6. A canopy-switchboard supported upon pipes or tubes, in combination with telephone-lines passing through said tubes to different switches upon said canopy-switchboard, and a table-switchboard placed below said canopy-switchboard, substantially as and for the purpose specified.

In witness whereof I hereunto subscribe my name this 19th day of November, A. D. 1889.

CHARLES E. SCRIBNER.

Witnesses:
ELLA EDLER,
GEO. R. PARKER.