

(No Model.)

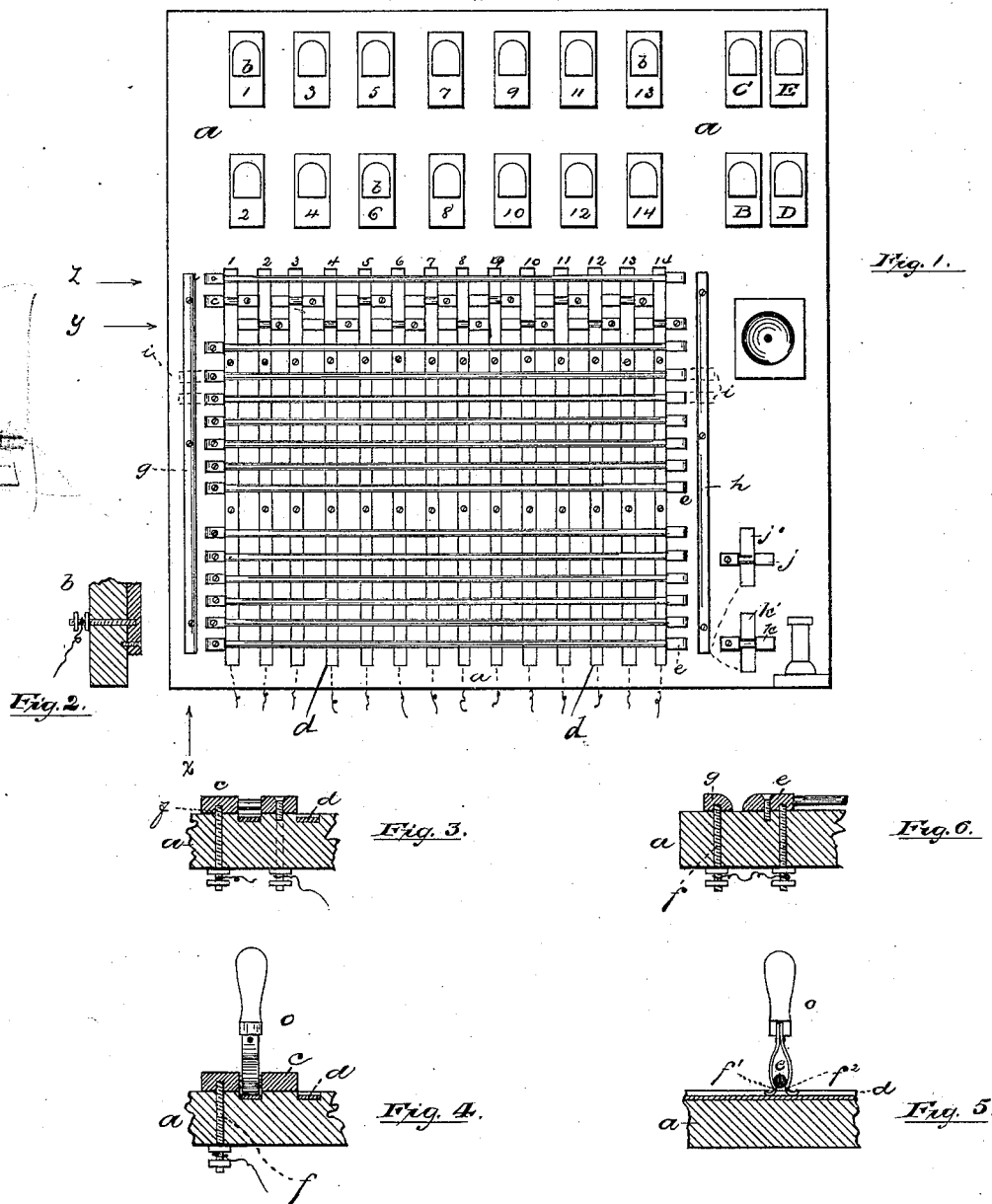
E. W. SMITH.

TELEPHONE AND TELEGRAPH SWITCH BOARD.

No. 305,025.

Patented Sept. 9, 1884.

Section A.



Attest:
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UNITED STATES PATENT OFFICE.

ELIPHALET W. SMITH, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE OVER-
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TELEPHONE AND TELEGRAPH SWITCH-BOARD.

SPECIFICATION forming part of Letters Patent No. 305,025, dated September 9, 1884.

Application filed April 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELIPHALET W. SMITH, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Telephone and Telegraph Switch-Boards; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in telegraph and telephone switch-boards, and is intended to enable the operator to more efficiently and conveniently connect the subscribers' lines one with another, as described hereinafter.

The invention consists in the construction and arrangement of the several parts, and the manner of operating said parts, as illustrated in the drawings, and described and claimed herein.

Referring to the accompanying drawings, Figure 1 is a front elevation of my improvement. Fig. 2 is a section of a portion of the switch-board through line *x* of Fig. 1. Fig. 3 is a section of a portion of a small line-bar and line-plates through line *y* of Fig. 1. Fig. 4 is a similar view, with an elevation of a connecting-clasp. Fig. 5 is a vertical section of a portion of the switch-board and a side elevation of a connecting-clasp; and Fig. 6 is a section of a portion of the board through line *z*, showing a permanent connection at that point on the back of said board.

The general features of this invention are similar to those set forth in a previous application filed February 4, 1884, Serial No. 119,701, the improvements consisting, principally, in the construction and arrangement of the devices used in making connections on the face and through the switch-board.

In the drawings, *a* is the switch-board; *b*, the line-annunciator; B C D, &c., the section-annunciator; *c*, the individual line-bars; *d*, the

line-plates, preferably countersunk in the face of the board; *e*, the line-connecting bars extending across the face of the board above the line-plates, and preferably at right angles thereto. The portions of the line-connecting bars above the line-plates are rounded, as also the small individual line-bars, as shown in the drawings. The connection between the small line-bars *c* on the face of the board and the annunciator is made as shown more particularly in Figs. 2, 3, 4, and 6, a screw or pin, *f*, passing through the board and into or against the small line-bars, and having two nuts on the end, between which the annunciator-wire may be fastened. All of the connections are made in this manner through the board, each of the line-plates being thus connected at their lower ends through the board with the subscribers' lines.

In connecting the line-bars, both small and large, and line-plates, I employ a clasp device, *O*, made of elastic conducting material, having a suitable handle, substantially as shown in the drawings. The clasp portion of the connector is formed substantially as illustrated, and adapted to be pressed over the rounded portion of the line-bars, and bind by its elasticity against the under side thereof at about the points *f'* *f''*, thus forcing the ends of said clasp or clamp down upon the line-plate, and securing a firm contact thereat. Various devices may be employed in this manner; but the one illustrated is preferred, as securing a firm contact.

The vertical bar *g* is connected with the calling-battery, and the bar *h* with the operator's telephone. Both of said bars, if desirable, may be formed similar to the line-bars *c*, and the said bars *c* extended under the same, as dotted at *i*, Fig. 1, so as to make the connection in the manner above described with the clasp device.

Each of the individual line-bars *c* is provided with a clasp conductor, and as long as said conductors are upon the same the subscribers' lines are connected with the annunciators. In connecting the lines of one subscriber with another for the purpose of communication, the

conductors are brought down and placed upon the bars *c*, as may be desired.

j and *k* are small bars, like the individual line-bars, placed over plates *j'* and *k'*, countersunk in the board, and provided with a clasp-
 5 ing-conductor, the bar *j* being connected through the board with the receiver, and the bar *k* with the transmitter, the plates *j'* and *k'* being connected with the vertical bar *h*. The
 10 receiver is in circuit when the conductor is upon the bar *j*, and both receiver and transmitter when the said conductor is upon the bar *k*. In countersinking the line-plates in the board, shoulders are formed, between which
 15 the ends of the clasping portions of the connecting device are held, thus preventing the said connecting devices from being accidentally disengaged from the line-connecting bars by the operator in making other connections.
 20 The number of line-plates, line-bars, &c., on each section and the number of sections may be multiplied, as will be readily understood.

Having thus described my invention, what I
 25 claim is—

1. In combination, in a telephone and telegraph switch-board, line-plates arranged on the surface of and countersunk in one face of a switch-board, connecting-bars arranged
 30 across and above said line-plates, and having their portions immediately above said line-plates rounded, substantially as and for the purpose set forth.

2. In a telephone and telegraph switch-board, the combination, with the line-plates
 35 *d*, of the individual line-bars *c*, the connecting-bars *e*, the battery-bar *g*, and instrument-bar *h*, substantially as described.

3. The combination, with the lines-plates, connecting-bars, and instrument-bar *h*, of the
 40 receiver-bar *j* and plate *j'*, and the transmitter-bar *k* and plate *k'*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of
 45 March, 1884.

ELIPHALET W. SMITH.

Witnesses:

CHARLES H. PELL,
 F. F. CAMPBELL.