

No. 746,624.

PATENTED DEC. 8, 1903.

J. B. WOOD.
SWITCHBOARD.

APPLICATION FILED OCT. 16, 1902.

NO MODEL.

FIG. 1.

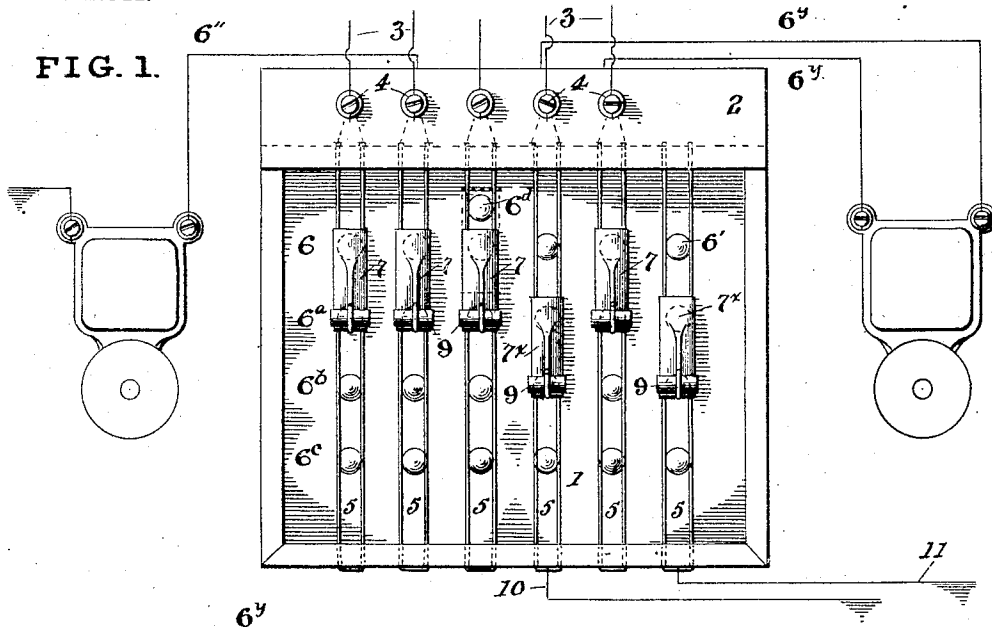


FIG. 2.

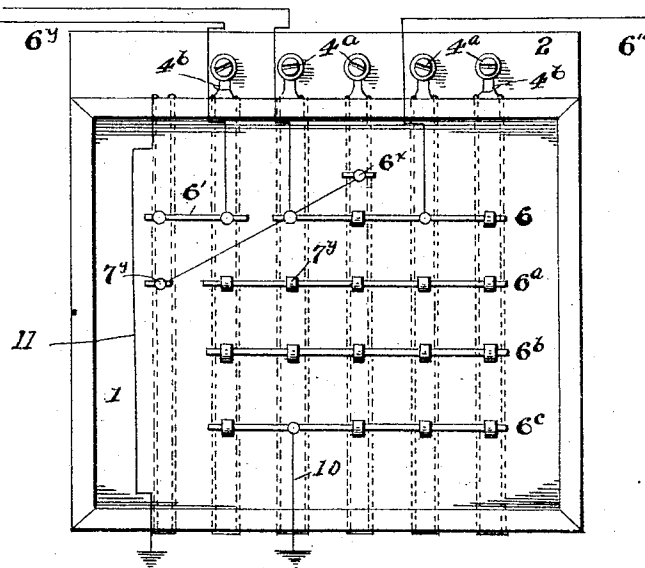
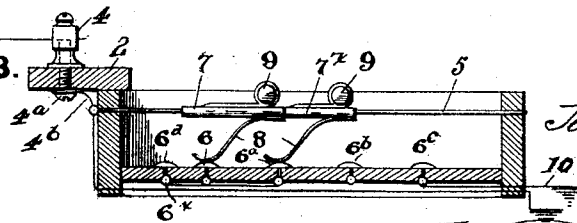


FIG. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES BUCHANNAN WOOD, OF GATE CITY, VIRGINIA, ASSIGNOR OF TWO-THIRDS TO JOHN E. SMITH AND GEORGE L. DAUGHERTY, OF GATE CITY, VIRGINIA.

SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 746,624, dated December 8, 1903.

Application filed October 16, 1902. Serial No. 127,535. (No model.)

To all whom it may concern:

Be it known that I, JAMES BUCHANNAN WOOD, a citizen of the United States, residing at Gate City, in the county of Scott and State of Virginia, have invented certain new and useful Improvements in Switchboards, of which the following is a specification.

My invention relates to improvements in telephone-switchboards, and has for its object the provision of a simple and convenient device for use in small towns and outlying districts in connection with telephone systems.

In the accompanying drawings, Figure 1 is a plan or front view of my improved switchboard mechanism with a diagrammatic representation of bells in circuit. Fig. 2 is a reverse view of Fig. 1, showing the back of the switchboard and connections. Fig. 3 is a vertical section of the improved switchboard.

Referring to the figures of drawings, the box or casing is designated by the numeral 1, said casing having a ledge 2 on the top back portion thereof. The wires 3 from the main line of the system of telephones are connected to the switchboard at binding-posts 4 and are each joined to separate pairs of parallel bars 5 through the screws 4^a and wires 4^b therefrom on the under side of the ledge. The bars 5 are of any suitable conducting material and may be of any size or shape desirable, being shown in this instance as round metallic bars and arranged in pairs, as clearly set forth in the drawings. Each pair of bars 5 is in reality one piece, having a return-bend at one end and extending across the box, near the top thereof.

Located on the upper surface of the bottom of the box or casing are a number of metallic buttons or contact-points arranged in predetermined series. In practical use I may employ as many series as desired; but for convenience of illustration I show only four series in this instance. Each contact-button has connection through the thickness of the bottom of the box or casing to a bar or wire common to each button in that series. Referring to the upper row or series of buttons, (indicated as 6,) it will be seen by reference to Fig. 2 that this series has a shorter or disjointed series 6', consisting of two buttons only. Wires, as 6^v 6^w, leading from each

series, respectively, have a bell connecting them, forming a circuit. Another wire, 6^u, leads from the series 6 and has connection to a bell, from whence the connection is grounded, as shown. The second and third series of buttons I designate as 6^a and 6^b. The connection of these series of buttons is plainly shown in the drawings. The lower series or row of contact points or buttons is used only when necessary to ground the system of telephones—such, for instance, during an electrical storm—as will be hereinafter explained.

For making the required contact and completing the connection throughout any desired circuit I provide a sliding contact-piece of novel construction. Said piece consists of a body portion 7, of flattened material, substantially as shown, resting upon two of the parallel bars 5. The sides of the body portion are turned under and neatly fit over the said parallel bars and in frictional contact therewith, but loose enough to admit of a sliding motion thereon. A flat metallic spring-leaf 8 is attached to the under side of the body portion 7 of the contact-piece and by its own resiliency keeps in contact with one of the buttons or contact-points beneath it when moved into such position that the spring-leaf comes in contact with the contact point or button by a push or pull on a suitable handle 9, thus completing connection between a pair of bars 5 and a button or contact-point in one of the series.

In Fig. 1 two pieces 7^x are shown in circuit, thus connecting two telephones at the ends of the respective main lines 3, controlled by two subscribers. The circuit is completed from the main lines 3 through bars 5, contact-pieces 7^x, leaf-springs 8, and contact points or buttons through to points 7^y 7^z. As will be seen from an inspection of the drawings, one point 7^y in Fig. 2 is disconnected from the series 6^a, but is connected to button or contact-point 6^d at point 6^c. This connection between 7^y and 6^c is for grounding the lines when two party-lines are to be connected through the board, and one end of the line may be in use while the other is grounded.

The numeral 11 indicates a usual ground-wire.

Should it be desired to ground the entire

system, because of the presence of an electrical storm or for some other reason, all the sliding contact-pieces are moved to a position over the lower series 6^c, so that the spring-leaves 8 of each contact-piece will be in frictional contact with the button or contact-point directly beneath it, and should a current enter the metallic connection said current will pass to the ground through the medium of ground-wire 10.

From the above description, taken in connection with the drawings, the following-described operation will be obvious: Should a subscriber on a party-line—say 7^x to the right in Fig. 1—desire to call up another subscriber—say 7^x to the left in Fig. 1—the call-bell is rung in the usual manner. The operator at the switchboard slides the contact-piece 7 into contact with contact point or button 6^d. He then moves 7^x piece (right, Fig. 1) to position over point 7^y, Fig. 2, thus making communication between piece 7 and said piece 7^x through points 7^y and 6^x, Fig. 2. The operator then moves the left contact-piece 7^x to position shown in Fig. 1 over point 7^y, (to the right in Fig. 2,) thus establishing communication between the three points of contact-piece 7 (dotted lines, Fig. 1) and the two contact-pieces 7^x and completing the circuit between the two subscribers through the connections from the party-lines in the manner hereinbefore described.

Having thus fully described my invention, what I claim; and desire to secure by Letters Patent, is—

1. A switchboard composed of a casing or board proper, a series of binding-posts mounted in the board, line-wires connected to said binding-posts, a series of contact-bars arranged in the board and connected to the binding-posts, contact-points adjacent to said bars, ground connections and contact-plates, said contact-plates having each a pair of sleeves sliding on the bars and having projections for engaging the contact-points.

2. A switchboard composed of the casing or board proper, a series of contact-points arranged in series in said casing, means for connecting the said points, ground connections,

a series of parallel contact-bars adjacent to the contact-points, line and bell connections with the contact-bars and a series of sliding contacts consisting each of a cross-piece and a pair of sleeves mounted on the bars and adapted to make connection through the contact-points.

3. A switchboard mechanism consisting of series of parallel bars, each bar made from a single wire to form two parallel strands, series of contact-points located in predetermined relation thereto, and contact-pieces frictionally movable on said bars and disposed so as to make contact with different contact-points in the path of movement of said contact-piece, said contact-pieces each consisting of a handle, a body portion and sleeves fitting and movable on the bars.

4. A switchboard mechanism consisting of a series of parallel bars in pairs, said bars being each made of a single wire to form a pair of parallel strands, contact-points arranged in series as described, and a sliding contact-piece on each pair of bars, said contact-piece provided with a spring projection for making contact with any one of the contact-points located in the path of movement of said movable contact-piece, said contact-pieces each consisting of a handle, a body portion and sleeves fitting and movable on the bars.

5. In a switchboard, a series of cross-bars, movable contact-pieces thereon each having a frictional contact device, and a series of contact-points arranged in predetermined position on the switchboard, a grounding-wire connected to said contact-points, whereby, when said contact-pieces are moved to position to connect with said contact-points, the entire system will be grounded, said contact-pieces each consisting of a handle, a body portion and sleeves fitting and movable on the bars.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES BUCHANNAN WOOD.

Witnesses:

JAMES T. MCCONNELL,
JOHN C. WHITE.