(No Model.)

J. F. GILLILAND.

ELECTRICAL SWITCH BOARD.

No. 267,747. Patented Nov. 21, 1882.

Fig. 1.

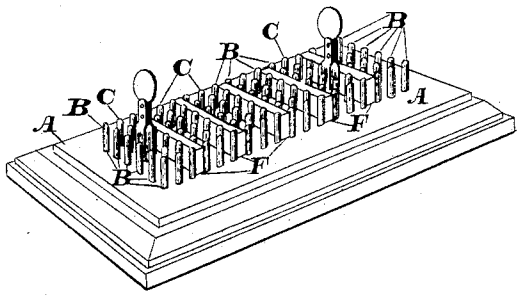


Fig. 2.

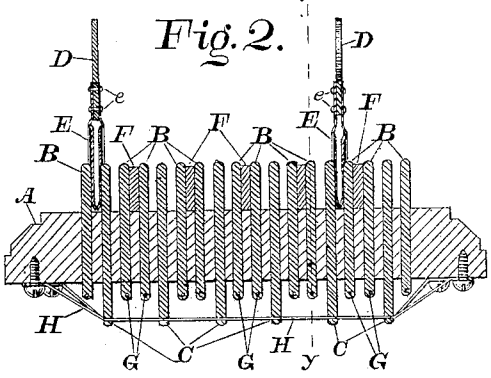


Fig. 3.

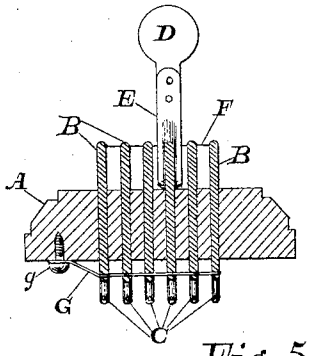


Fig. 4.

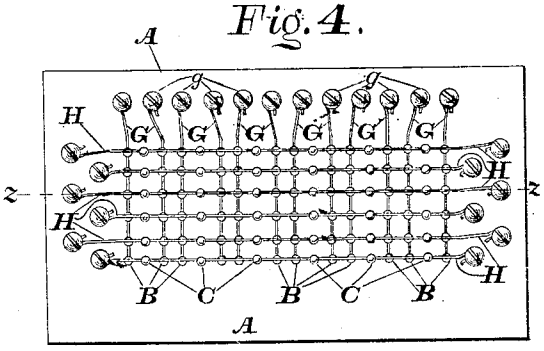


Fig. 5.

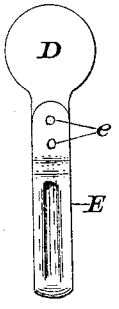
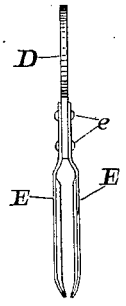


Fig. 6.



WITNESSES.

Chas. N. Leonard.

Chas. L. Thurber.

INVENTOR.

James F. Gilliland,

PER

C. Bradford.

ATTORNEY.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES F. GILLILAND, OF INDIANAPOLIS, INDIANA.

ELECTRICAL SWITCH-BOARD.

SPECIFICATION forming part of Letters Patent No. 267,747, dated November 21, 1882.

Application filed April 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. GILLILAND, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Electrical Switch-Boards, of which the following is a specification.

The object of my said invention is to produce an electrical switch-board, principally for telephone use, wherein a large number of connections can be condensed into a very small space. This object is accomplished by inserting in a non-conducting base numerous short metallic rods, which pass through said base and project upon each side thereof, said rods being arranged in series, and the several rods of each series being connected by wires at one end and adapted to be connected to a rod of another series by an appropriate plug at the other end. Said series of rods are also preferably divided into groups by strips of wood inserted between them. In the example shown the shorter rods are connected with the "line-wires," and the longer ones with the "connecting-wires."

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a small switch-board embodying my invention; Fig. 2, a longitudinal vertical section of the same on the dotted line *z z;* Fig. 3, a transverse vertical section on the dotted line *y y;* Fig. 4, an under side plan of Fig. 1; Fig. 5, a side elevation of the switch plug or key, and Fig. 6 an edge elevation of Fig. 5.

In said drawings, the portions marked A represent the base of the switch-board; B, the rods to which the line-wires are connected; C, the rods to which the connection-wires are connected; D, the handles of the switch plugs or keys; E, the spring portions of said plugs; F, wooden strips dividing the several series of rods into groups; G, the inner ends of the lines or line-wires, and H the connection-wires.

The base A is commonly of wood, but may be of any non-conducting material. It is prepared by being cut into the desired shape and having a large number of holes bored or drilled therein, into which the rods B C are inserted. The rods B C are usually formed from pieces of wire stout enough to not be easily bent, and are inserted in the holes in the base so as to project an equal distance on top, but an unequal distance below. This latter is so that the wires connecting the individual rods of a series together can cross without touching the wires which connect the rods of other series. In the example shown the rods C, attached to the wires forming the "connections," are longer than those attached to the wires forming the "lines," and the "connection-wires" H thus pass some distance outside of the line-wires, thus avoiding any direct contact between the two sets of wires.

The switch-plugs are constructed of an insulating-handle, D, and two springs, E E, which are connected to said handle by rivets *e e.* The spring portions are concaved, so as to fit between the ends of the rods which project above the surface of the base.

The strips F divide the rows of rods into groups, and are only for the convenience of the user, so the proper place to insert the plug may be ascertained quickly.

The wires G are simply the inner ends of the outgoing lines, and are severally connected to a row of the rods or pins B. A binding-screw, *g*, is employed at one end to connect this to the outgoing portion of the wire.

The wires H are each for the purpose solely of connecting the several rods or pins C of a row electrically, and enabling any two of the lines to be connected by the use, in connection with the rods and wires, of the plugs or keys.

The operation of my invention is similar to that of a previous invention of mine, wherein strips of metal were substituted for the rods and wires, and will be readily understood by those familiar with the art.

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

1. The combination, in an electrical switch-board, of a base of non-conducting material, pins or rods extending through the same, the lower ends of each row of which are connected by a wire, some of the rows being arranged longitudinally on the base and others transversely, whereby any two of the rows running in one direction are capable of being electrically connected by inserting switch-keys between the rods thereof which are in line with

each other and the adjacent rods of the row running in the other direction, substantially as set forth.

2. The combination, in a switch-board, of the base A, rods or pins B and C, wires G and H, and switch-plugs for electrically connecting said rods or pins, substantially as set forth.

3. The combination, in a switch-board, of a base and two sets of pins running through the same, one set of which projects farther than the other, whereby wires for connecting rows of said sets may pass each other without coming in contact, substantially as set forth.

4. A switch-plug for electrical switch-boards, composed of the handle D and springs E E, the latter of which are concave on their faces, so as to fit between pins on the switch-board and be held in proper position thereby, substantially as set forth.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 31st day of March, A. D. 1882.

JAMES F. GILLILAND. [L. S.]

In presence of—

CHAS. L. THURBER,

C. BRADFORD.