

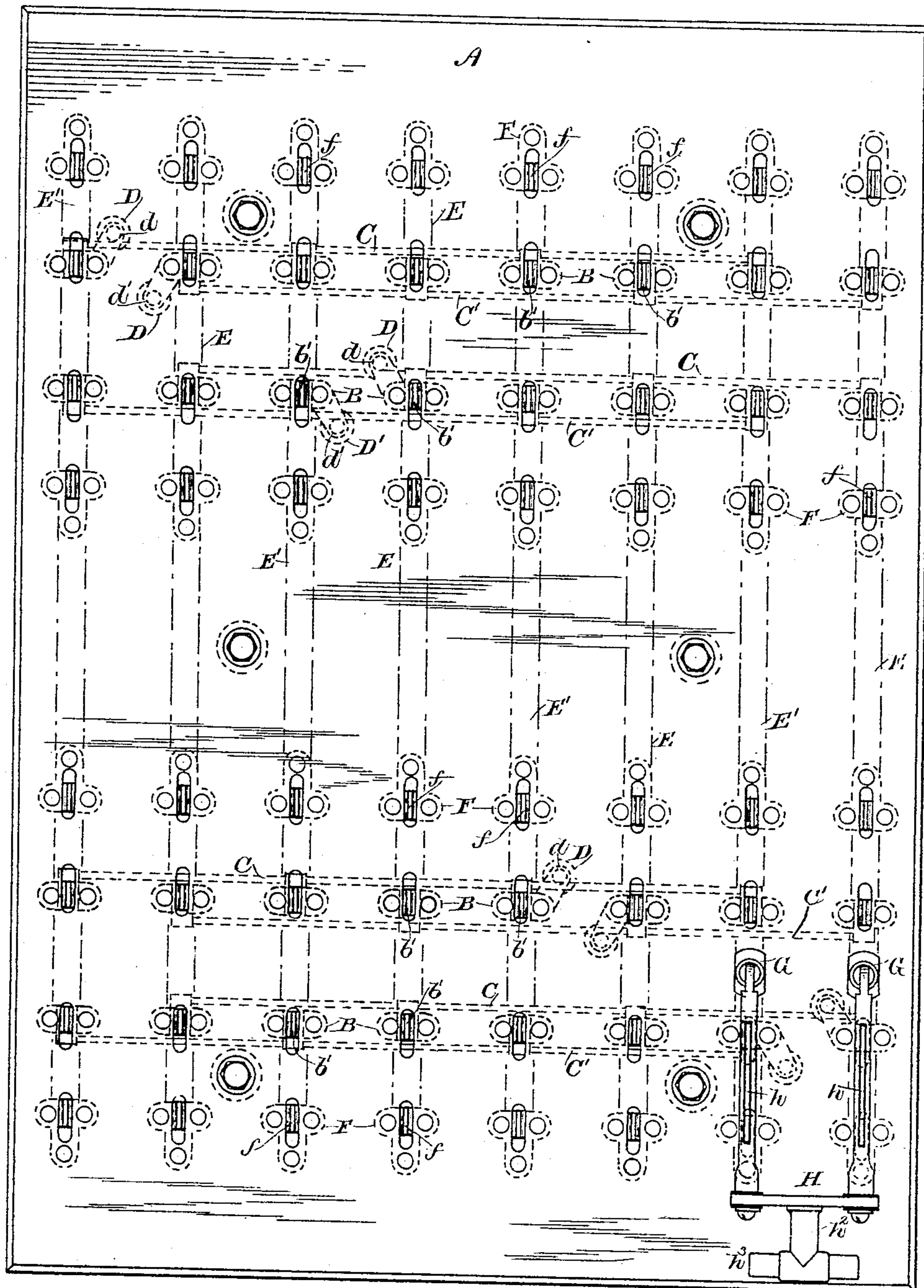
(No Model.)

2 Sheets—Sheet 1.

A. L. ROHRER.
SWITCHBOARD FOR ELECTRIC CIRCUITS.

No. 496,901.

Patented May 9, 1893.



WITNESSES.

Alec F. Macdonald.

W. F. Hayes

FIG. 1.

INVENTOR—

Albert L. Rohrer

By P. B. Bley & B. B. Bley
Attys

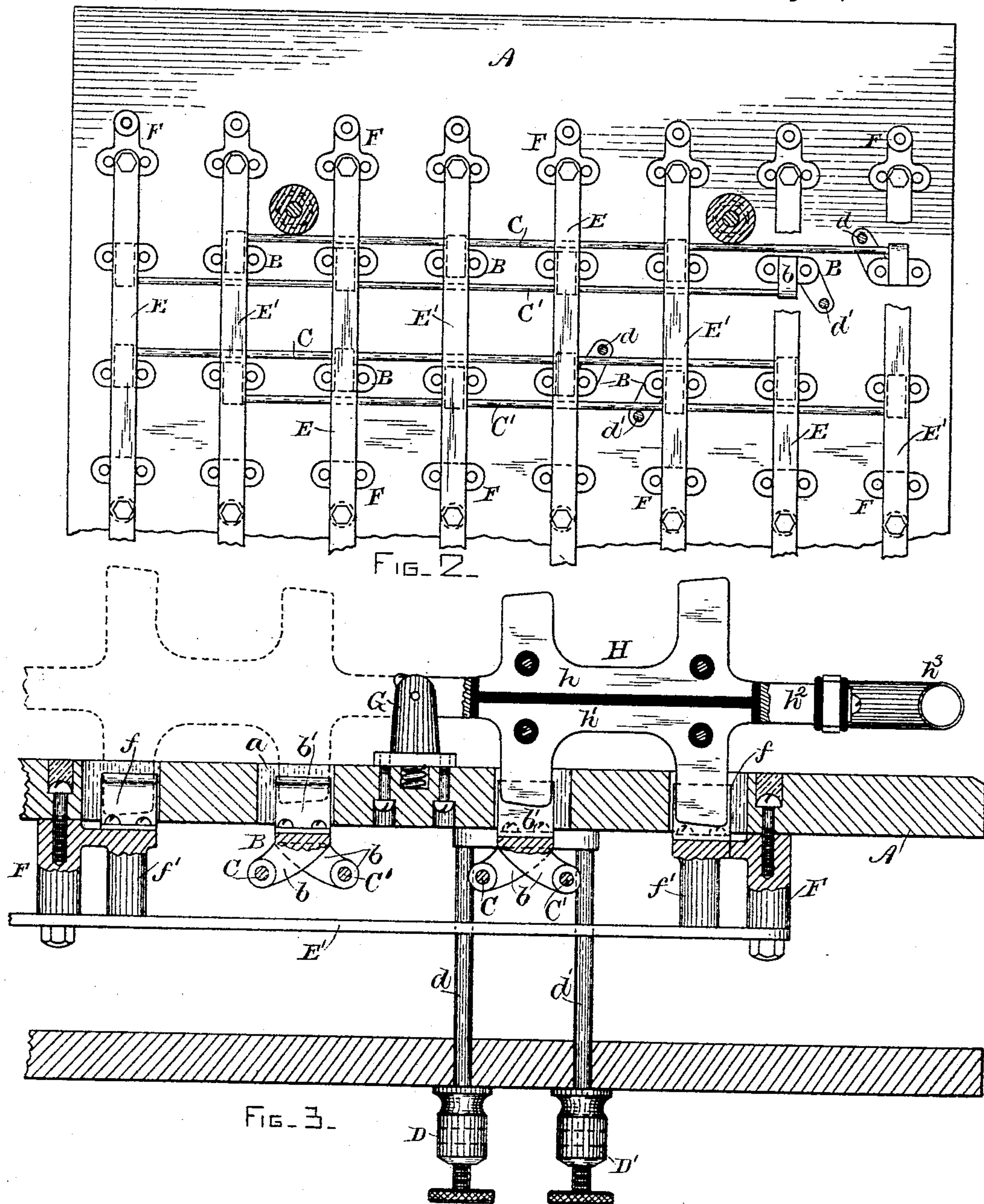
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N. L. Hayes.

INVENTOR.

Albert L. Rohrer

by Bentley & Blodgett
Attys

UNITED STATES PATENT OFFICE.

ALBERT L. ROHRER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE
THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

SWITCHBOARD FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 496,901, dated May 9, 1893.

Application filed June 20, 1892. Serial No. 437,270. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. ROHRER, a citizen of the United States, residing at Lynn, county of Essex, State of Massachusetts, have
5 invented a certain new and useful Improvement in Switchboards for Electric Circuits, of which the following is a specification.

My invention relates to switch boards for electric circuits, and its object is to render it
10 impossible for the operator or any other person to obtain a shock by accidentally touching the metal in circuit. This is accomplished by sinking the fixed contact plates below the surface of the insulating material of which
15 the switch board is composed, and by insulating the movable contact plates from the handle and from each other, as hereinafter pointed out.

In the drawings, Figure 1 is a front elevation of a switch board embodying my invention. Fig. 2 is a rear elevation of a portion thereof, and Fig. 3 is a sectional elevation on an enlarged scale.

The front supporting plate A is composed
25 of slate or some other suitable insulating material. Fastened to the rear of this plate are one or more rows of brackets B, having curved arms *b* and spring clip contact plates *b'*. The curved arms project alternately in opposite
30 directions, the alternate arms, or those projecting in the same direction being united by rods C, C', said rods running parallel with each other. At one end of each rod, the bracket to which it is attached is also connected as by rods *d*, *d'* with a binding post D,
35 D'. The rods thus constitute terminals for the supply mains from the dynamo, which are connected with said posts. Running transversely to the rods C are strips E, E', supported on studs F, and serving as circuit con-
40 ductors. The studs are arranged in rows parallel with the bracket B and each stud has a spring clip contact *f*, which lies in the same vertical line as the contact plate *b'* on the adjacent bracket B, and is supported by a leg
45 *f'* resting on the strip E or E'. The contact plates *b'* and *f* project outwardly in slots *a* in the switch board A, but do not extend through to the outer surface thereof, as clearly shown

in Fig. 3. The operator is therefore in no dan- 50
ger of touching them, should he place his hand upon the switch board.

Near the row of brackets B are mounted upon studs G the double knife switches H. Only one of them is shown, but it is to be un- 55
derstood that one is provided for every pair of strips E, E', and when two sets of rods C, C' are used, the switches are mounted between the rows, as shown, and are provided with opposite contact blades *h*, *h'*, so that by revers- 60
ing the position of the switch it will connect the second set of rods with the strips E, E', as indicated in dotted lines in Fig. 3. The contact blades are carefully insulated from the frame *h*² and from each other; and the 65
handle *h*³ is also insulated from the frame. With this construction, when the switch is closed, the only part of it in the circuit is the inner pair of contact blades. This renders it difficult to touch the active part of the 70
switch, since the outer blades if accidentally struck by the operator give him no shock. It is therefore evident that it is impossible to obtain a shock from a switch board constructed in accordance with my invention, unless a 75
deliberate effort is made to touch the metal in circuit, by reaching under the handle of the switch, or into the slots *a*.

What I claim as new, and desire to secure by Letters Patent, is— 80

1. A switch board consisting of an insulating supporting plate containing rows of slots, brackets secured to the rear of said plate, having contacts projecting into but not through said slots, and provided with curved 85
arms, and rods connecting alternate arms and serving as terminals for the supply mains, substantially as described.

2. The combination with a switch board having its fixed contacts arranged in slots below the surface of the insulating supporting 90
plate, of a pivoted frame carrying contact blades insulated therefrom, said blades being adapted to enter said slots, substantially as set forth.

3. The combination with a switch board 95
having two sets of supply main terminals, of circuit conductors arranged transversely

thereto, said terminals and conductors having contacts arranged in slots below the surface of the insulating supporting plate, and a frame pivoted between the two sets of supply
5 main terminals and carrying on each side a contact blade, said blades being insulated from each other and from the frame, substantially as described.

4. The combination with a switch board
10 having contact terminals below the surface of an insulating plate provided with slots, of an insulated pivoted switch-blade adapted to connect said terminals by its insertion through said slots.

15 5. The combination with a switch board having two sets of work circuit terminals and dynamo terminals arranged below the surface of an insulating plate provided with openings, of pivoted switch-blades mounted on opposite
20 sides of an operating handle, insulated therefrom and from each other, and adapted to connect either of said dynamo terminals to

the work circuit through said openings in said insulating plate.

6. The combination with a switchboard 25 having the generator and work circuit terminals located below the surface of an insulating plate, of an insulated pivoted switch-blade adapted to connect said terminals by its insertion through slots in said plate. 30

7. In an electric switch having the terminals from the supplying and supplied circuits brought in proximity and arranged below the surface of an insulating guard, a switch-blade adapted to connect said terminals mounted 35 upon but insulated from an operating handle pivoted without said guard.

In witness whereof I have hereto set my hand this 18th day of June, 1892.

ALBERT L. ROHRER.

Witnesses:

JOHN W. GIBBONEY,
DUGALD MCKILLOP.