

(No Model.)

G. H. WARDE.

SWITCH BOARD FOR ELECTRIC LIGHT SYSTEMS.

No. 358,309.

Patented Feb. 22, 1887.

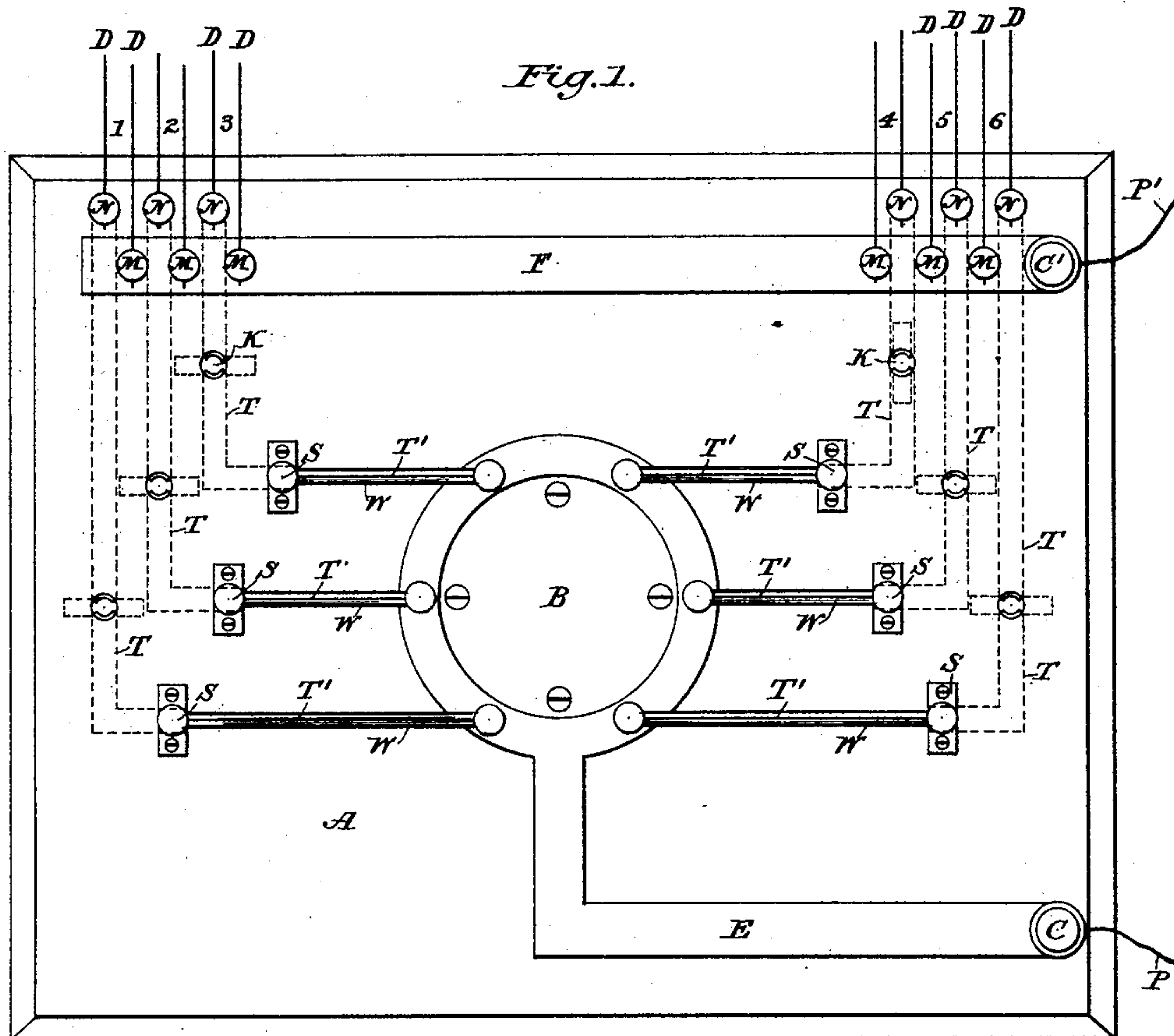
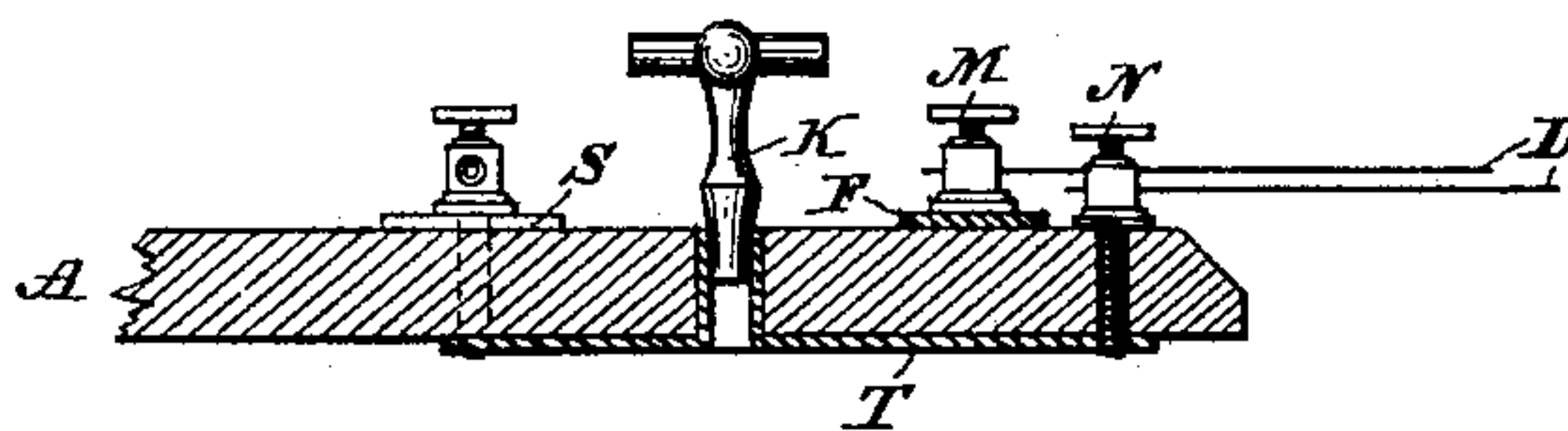


Fig. 3.



Fig. 2.



Attest:

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SWITCH-BOARD FOR ELECTRIC-LIGHT SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 358,309, dated February 22, 1887.

Application filed May 15, 1886. Serial No. 202,267. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. WARDE, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful
5 Tableau or Switch-Board for Electric Lights in Buildings, in combination with an Improved System of House-Wires connected therewith; and I do hereby declare that the following is a full and exact description thereof, reference
10 being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to devices for connecting the electric lights in a building with the
15 main street-wires or dynamo-circuit, and has for its object to allow of the use, with one single system of house-wires, of either the arc or the incandescent system of electric lighting, and of a change at will from one to the other
20 without change in the wiring of the house, and also to concentrate the "safety-fuses" or "safety-catches" for the wires of the entire building at one point readily accessible, and to facilitate the cutting off or putting on at
25 the same point of any one or more of the different groups of lamps in the house.

It consists in an improved tableau or switch-board constructed as hereinafter described, to which the connections of the wires from the
30 main dynamo-circuit may be easily made by suitable binding-posts, and from which all the house-wires are led to the different groups of lamps in the building, and upon which the safety-fuses for the several groups are located
35 and the switch-connections made for opening or closing the various independent lamp-circuits.

In the accompanying drawings, Figure 1 is a plan view of my improved tableau, the conducting-strips upon its under side or face being illustrated in dotted lines. Fig. 2 is a partial transverse section in line *xx* of Fig. 1; Fig. 3, a sectional view illustrating the double wire employed for wiring a house, in combination
45 with my improved tableau.

A represents the base plate or board of my improved tableau; B, a central circular metallic conducting-plate connected with a main binding-post, C, at the edge of the board by a metallic strip, E. The binding-post C is adapted

in the customary manner to receive and secure the end of a wire, P, from one pole of the dynamo.

F is a metallic conducting-strip extending entirely across the board, near one side or end thereof. It is provided with a second main
55 binding-post, C', placed at the same end of the board as the main post C. This second main binding-post, C', is adapted to receive and secure the end of the wire P' from the opposite
60 pole of the dynamo. The wires P and P' serve to connect the entire system of wires and lamps in the building with the main-line or dynamo circuit.

The tableau A shown in the drawings is
65 represented as constructed for six series or groups of lamps, whose circuits are indicated by the numbers 1 2 3 4 5 6.

Each circuit is, by preference, made up of a double insulated wire, D, whose two separate
70 strands, *r r'*, (see Fig. 3,) when connected jointly in circuit, offer so low a resistance as to admit of their use in conveying the quantity current required to supply a system of arc
75 lights placed in the circuit in accordance with a predetermined plan, the size of the wires being graduated in accordance with said plan when the building is wired.

When it becomes desirable to use a system or group of incandescent lamps in the same
80 circuit, instead of arc lights, one of the strands, *r'*, of the double wire may be cut out at the binding-post which connects the wire with the tableau, and the resistance of the one remaining wire, *r*, will meet the requirements of the
85 intense current now thrown into the circuit. A connection with the plate F of one end of the double wire D for each group of lamps is effected in the customary manner by means of
90 binding-posts M M on said plate.

A second binding-post, N, is fitted on the tableau, near to each of said posts M M, but insulated therefrom, to receive the opposite end of the wire completing the circuit. Each of said posts M is connected directly with a
95 metallic strip, T, (see dotted lines, Fig. 1) on the under side of the board or tableau A, (see Fig. 2,) which is carried to a point opposite the central plate, B, and terminates in a pin or screw, by which it is connected to a plate, 100

S, on the outer face of the tableau. Connection is then established between each of said terminal plates, S S, and the central plate, B, by means of an ordinary safety device, consisting of a wire, T', made of an alloy fusible at a low temperature, which is inclosed in a glass tube, W, and connected at its ends to the plates S and B.

Each strip T is divided at a suitable point in its length, and the two separated ends are bent up within an aperture extending through the board A and are fashioned therein to form the opposite sides of a socket, H, adapted to receive a metallic switch-plug, K, (see Fig. 2,) which when inserted in the socket will form an electric conductor between the separated ends of the strip to reunite them, while a removal of the plug will break the connection and open the circuit otherwise closed through them.

The safety devices and the switches for all of the independent circuits or groups 1 2 3 4 5 6, &c., of lamps in the building are thus concentrated around the central plate, B, in the tableau A, so that each and every circuit is in ready control of the person in charge of the tableau, enabling him to connect or cut off all or any one of them with the main supply or dynamo circuit P P' at pleasure; and to readily renew, also, on the same board any safety device which may have become useless.

In the use of my invention the system of independent duplex wires D D D, extending from the tableau in a return-circuit, 1 2 3, &c., for each group of lamps is first fixed in the building to be lighted, and being once properly fixed need never again be disturbed, whatever system of electric lighting for the building may afterward be adopted, whether it be by arc or incandescent lamps, the invention admitting in manner as described of a change from one system to the other with the same set of wires by throwing the second strand, *r'*, of the duplex wire D into and out of the same circuit which is formed by the first strand, *r*.

If the incandescent system is to be used, one strand, *r*, only of the duplex wire D in each independent house-circuit is connected with

the binding-posts M N. The main dynamo of the incandescent light company is then connected with the binding-posts C and C'. So long as the switch-plugs K K, forming the independent circuits, are withdrawn from their sockets H, the current is shut off from the circuits. By their insertion each operates to close the circuit of the group of lamps to which the switch appertains with the main circuit, the circuit being protected from destructive electrical discharge over the same by its safety device T'.

If the arc system is preferred, the two strands *r r'* of each of the second duplex house-wires D are connected together at one end of each house-circuit to the posts M and N, respectively, and the main street-circuit of the arc light company connected to the posts C and C'.

I claim as my invention—

The combination, in a tableau for electric lighting, of a central plate, a main binding-post adapted to receive the wire from one pole in a dynamo-circuit, an electrical conducting-strip connecting the central plate and binding-post, a lateral plate, a second main binding-post connected to said lateral plate and adapted to receive the wire from the opposite pole of the dynamo-circuit, a series of secondary posts connected by said plate, and a corresponding series of secondary binding-posts insulated therefrom in proximity thereto to receive, respectively, in pairs the opposite ends of a series of wires each forming an independent house-circuit, a divided conductor extending from each insulated post into proximity to the central plate, a switch device to connect the divided ends of said conductor, and a safety device interposed between each of said conductors and the central plate, all substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. WARDE.

Witnesses:

J. F. ACKER, Jr.,
S. A. STAVERS.