(No Model.)

W. CONNELL.

ELECTRIC SIGN.

No. 572,158. Patented Dec. 1, 1896.

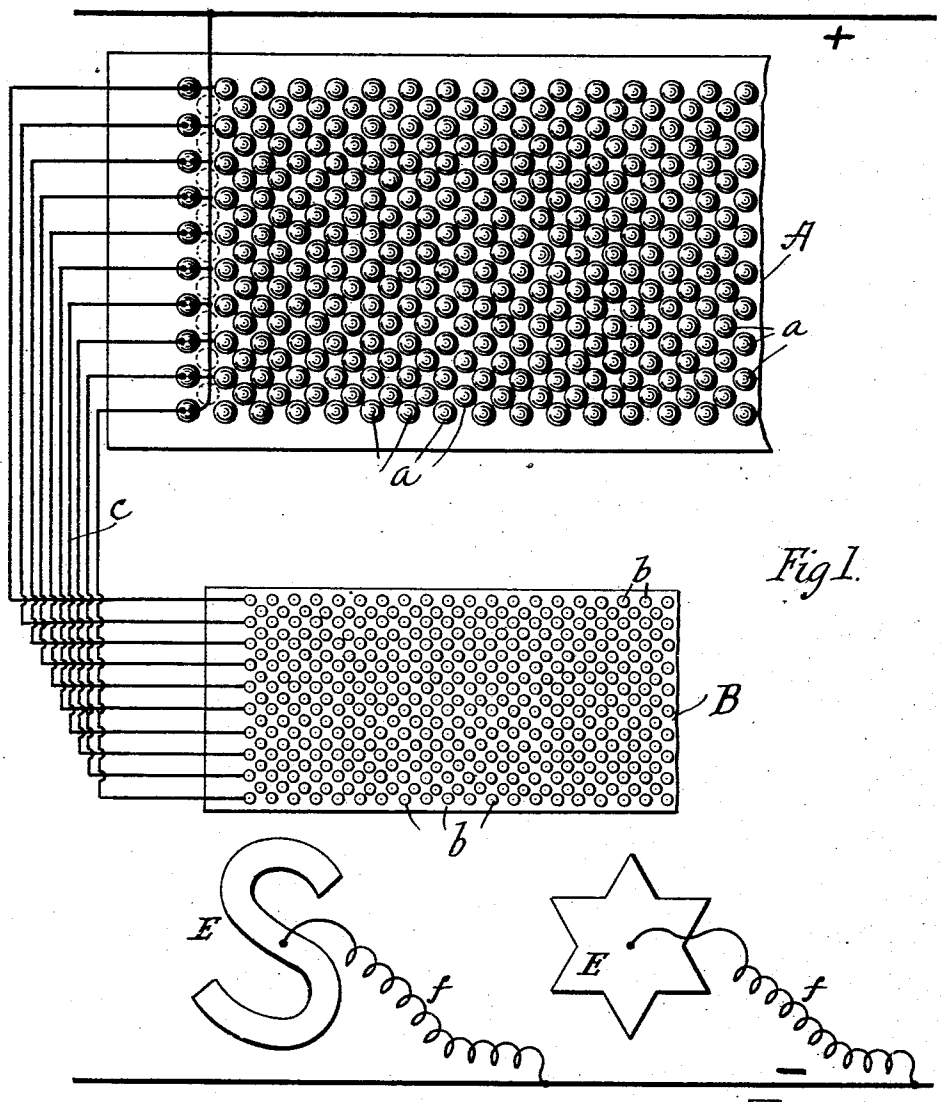

Fig 1.

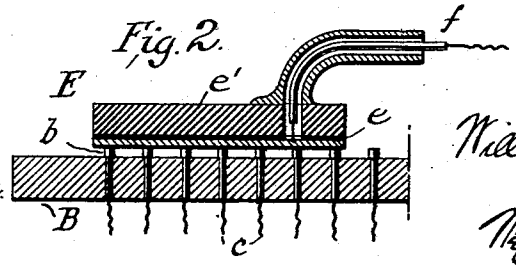

Fig. 2.

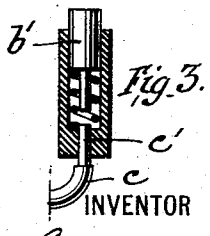

Fig. 3.

WITNESSES:

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WILLIAM CONNELL, OF PITTSBURG, PENNSYLVANIA.

ELECTRIC SIGN.

SPECIFICATION forming part of Letters Patent No. 572,158, dated December 1, 1896.

Application filed March 10, 1896. Serial No. 582,620. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CONNELL, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electric Signs, of which the following is a full, clear, and exact description.

This invention relates to electric signs of that class in which the letters or characters are portrayed by means of electric lamps.

The object of the invention is to provide a sign of this character on which the position of the letters or figures may be shifted at pleasure from a distant point by means of simple mechanism.

In carrying out my invention I arrange upon the surface of the sign electric lamps covering its entire surface and placed as close together as possible. Upon an operating-switchboard more or less remote from the sign I arrange circuit-terminals, the same in number and corresponding, respectively, in position with the lamps on the sign. The conductor of any given lamp on the sign terminates at the corresponding terminal on the switchboard. The letters or characters are of conducting material and electrically connected with one side of the circuit. When these letters are placed face down upon the operating-switchboard, they make contact with all those terminals directly beneath them, thereby completing the circuit through all of the corresponding lamps on the sign. These lamps, being thus illuminated, will portray the particular letters or characters resting on the switchboard, and it is obvious that the said letters or characters may be moved around over the surface of the switchboard and shifted in any manner to produce certain effects, such as the spelling of words or the formation of designs and figures. A complete letter or design may also be bodily shifted from one position to another on the sign without at any time obliterating any part of the letter or figure.

The invention will be described in detail with reference to the accompanying drawings, in which—

Figure 1 is a diagrammatical plan of the entire system constituting my invention. Fig. 2 is a sectional view of one of the letters or characters, and Fig. 3 is a detail of one of the terminals used on the switchboard.

Referring to the drawings by letter, A represents the sign, and B the operator's switchboard. The sign may be of any desired shape, but would ordinarily have an elongated rectangular surface. The entire surface of the sign will be covered with incandescent lamps *a*, placed as close together as convenient, mechanically, and preferably arranged in some regular order, such as in rows at right angles to each other and at equal distances apart. The sign will of course be permanently located at some exposed place. The operator's switchboard is a substantial facsimile of the sign except that its surface is covered by exposed circuit-terminals *b* in the form of pins instead of lamps *a*. The circuit-terminals will be arranged in exactly the same positions upon the switchboard as the lamps are upon the sign-board, and there will be but one circuit-terminal for each lamp, the terminals corresponding in position with their respective lamps. The switchboard may be located more or less remote from the sign-board.

The electrical circuits are as follows: One terminal of each lamp is connected with one of the main feeding-wires, + for instance. From the other terminal of each lamp wire *c* leads to its corresponding terminal *b* on the switchboard. A portion of this wiring is shown in Fig. 1, the remainder being omitted for the sake of clearness. It will be understood that the face of the switchboard is of wood, slate, or other insulating material, and that the terminals are firmly embedded or fixed therein. The exposed ends of all the terminals are in the same plane, so that when any flat surface is placed against the terminals it will make contact with all those terminals directly beneath it.

The letters or characters which are to be portrayed upon the sign are indicated at E, their simplest construction being that of a stamped metal plate. I prefer, however, to insulate the upper surface with a layer of hard rubber *e*, and in some instances add weight to it by a plate of lead *e'*, placed on top of the insulating-layer. The figure may also have a handle e^2, by which it may be picked up and manipulated. The metallic

plate E, forming the face of the figure or character, is to be connected detachably or otherwise with a flexible conducting-cord *f*, leading to the — feeder, or the feeder opposed in potential to that with which the lamps on the sign-board are permanently connected, as above described.

In operating the sign the letters or characters E are placed on the surface of the switchboard, where it will rest in contact with all those terminals *b* immediately under it. This will close the circuit of the corresponding group of lamps on the sign-board and will portray the shape of the letter or character. With a little manipulation of the characters E curious and interesting effects may be produced upon the sign. For instance, a word may be spelled out, letter by letter, by placing the letters composing the word upon the switchboard in their proper positions, and in any sequence. The first letter of a word may be started at the extreme right-hand end of the sign and moved along to the extreme left-hand end, where it is left, the second finding its place in the same way, and so on until the word is completely spelled out. The flight of an arrow may be indicated by sliding such a figure across the switchboard, and so various other forms, fanciful and otherwise, may be portrayed. It may be desired to have the terminals *b* normally "dead." This is done by means of the construction shown in Fig. 3, wherein the actual terminal of the wire *c* is at *c'*. Above it is arranged a spring-mounted plunger *b'*, which needs to be pressed downward into contact with the terminal *c'*, in order to convey current from said terminal through the plunger to the letter or character resting upon the plunger. In using these spring-terminals the character should be weighted, as shown in Fig. 2. It is obvious, however, that pressure may be applied instead of using the weight.

It will be understood that the relative sizes of the sign and switchboard, as a whole, are not material, the only essential point being that the terminals *b* shall correspond in number and position with the lamps.

Having thus described my invention, I claim—

In an electric sign, the combination of a sign-board having its surface covered with incandescent lamps, and a switchboard having its surface covered with exposed circuit-terminals there being one terminal corresponding to each lamp, the corresponding lamps and terminals being directly connected electrically and occupying the same relative positions on their respective boards, and a movable figure or character of conducting material connected with the main circuit and adapted to be put in contact with said terminals and move about over the surface of the switchboard while always making sliding contact with the terminals directly beneath the figure or character, substantially as and for the purpose described.

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

WILLIAM CONNELL.

Witnesses:
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