L. H. & L. M. JONES.

ELECTRIC SIGN.

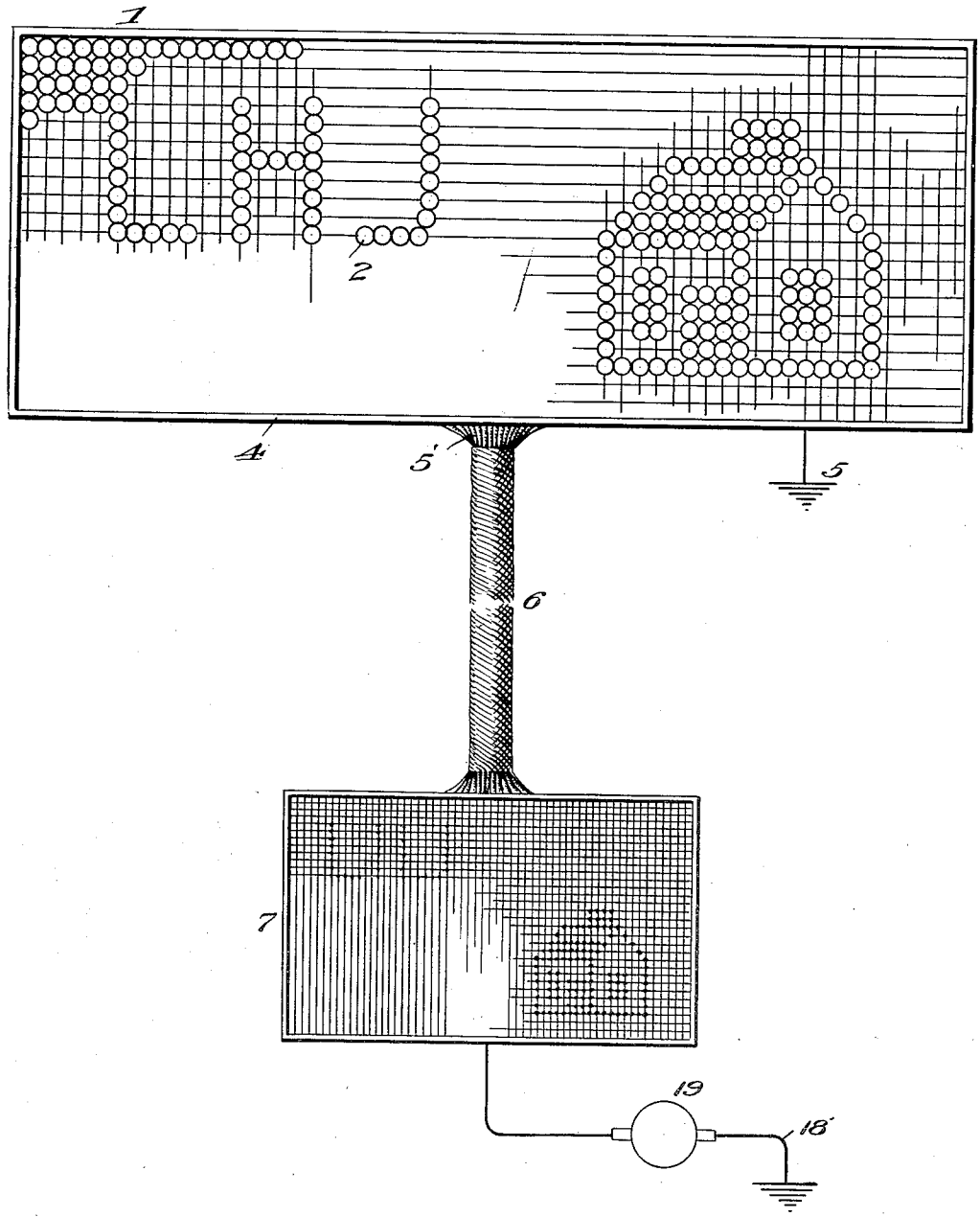
APPLICATION FILED JAN. 29, 1912.

1,103,294.

Patented July 14, 1914.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

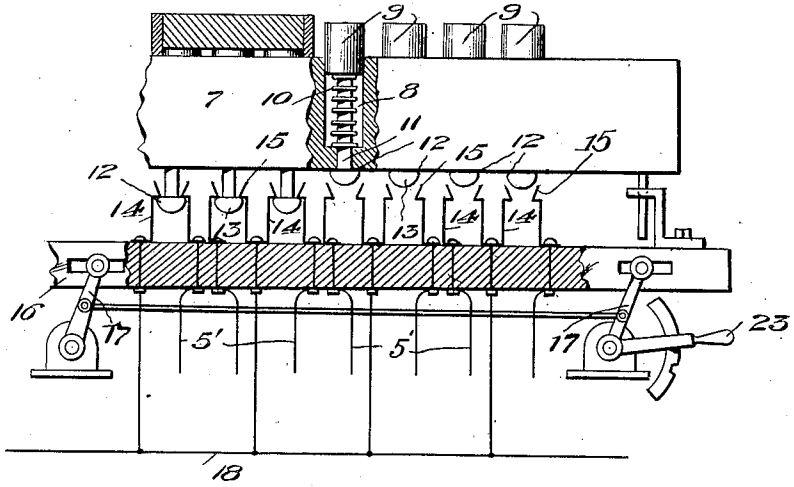


Fig. 3.

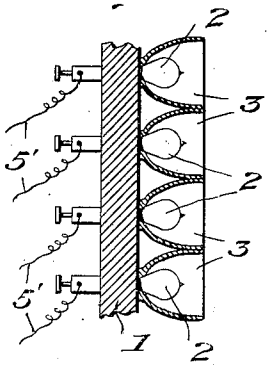


Fig. 4.

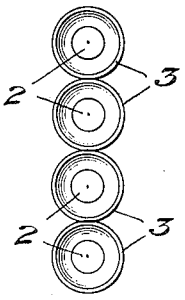


Fig. 5.

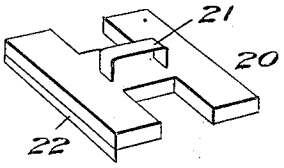
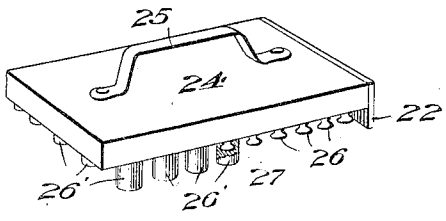


Fig. 6.



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UNITED STATES PATENT OFFICE.

LENORA H. JONES AND LEROY MICHENER JONES, OF WICHITA, KANSAS.

ELECTRIC SIGN.

1,103,294. Specification of Letters Patent. Patented July 14, 1914.

Application filed January 29, 1912. Serial No. 674,174.

To all whom it may concern:

Be it known that we, LENORA H. JONES and LEROY M. JONES, citizens of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented new and useful Improvements in Electric Signs, of which the following is a specification.

This invention relates to electric signs, and its object is to provide apparatus by means of which any desired letter, figure, or combination of the same, or any design not too complicated may be displayed to the public gaze by means of electric lamps upon a proper support.

Heretofore electric signs have been composed of set arrangements of lamps, connected to a suitable switchboard by means of which all or a portion of the lamps can be lighted at will, or in some predetermined order, so as to display a design or a word or sentence or sentences. Many varieties of these so-called "talking signs" are in daily and nightly use. Their disadvantage is that they are confined to a predetermined quantum of information, and after a while their endless repetition of their story becomes monotonous and fails to attract attention.

The object we have in view is to provide a sign by means of which an operator can display any desired word, character or design, singly or together, and in any order desired he pleases, so that he may constantly exhibit something new and thus hold the attention of the public for a much longer time than is now usual. We accomplish this by providing a large bank of electric lamps grouped closely together, each lamp being connected to its own individual push button or other controlling switch, said switches being grouped on a keyboard in a manner exactly corresponding to the manner in which the lamps are grouped. By simply laying on these closely grouped keys, buttons or other switches a letter, number or device cut out of a flat sheet of stiff material heavy enough to press down and close all the buttons on which it rests, the corresponding lamps will be lighted and the sign will reproduce in lines of light the letter or other character which has been thus laid upon the keyboard. It is evident that an infinite variety of information can be thus conveyed to the public, the amount displayed at any one time being limited only by the size of the signboard. The keyboard on which the switches are grouped is of course much smaller in size than the bank of electric lamps, so that all parts of it will be within easy reach of the operator.

The novel features of the invention will appear from the following detailed description, taken in connection with the accompanying drawings in which—

Figure 1 is a diagrammatic representation of the signboard and the keyboard and their electrical connections. Fig. 2 is a cross section of a portion of the keyboard. Fig. 3 is a section of a portion of the signboard. Fig. 4 is a front elevation of the same. Fig. 5 is a perspective view of a dummy character or form for actuating the switches, and Fig. 6 is a modification of the same.

Upon a suitable back or frame 1 erected in some conspicuous place we mount a plurality of small electric lamps 2 each provided with a bowlshaped reflector 3. The lamps are arranged in regular rows and are placed close together, so that the entire surface of the backing or frame is covered. The lamps in adjacent rows may be either in line or staggered, as desired. A border 4 may be placed around them for artistic effect, if desired, and may be composed either of some gilded or polished material to reflect the light, or it may consist of one or more rows of small electric lamps, of any desired colors. One terminal of each lamp is connected to a common ground conductor 5. The other terminals of the lamps are connected to individual insulated wires 5′ which are bunched into a cable 6 and led off to the keyboard, which is preferably located at some convenient point where the operator can have a clear view of the signboard.

The keyboard is composed of a suitable base board 7 of insulating material on which the switches are mounted. We have selected by preference the common push button as the best for the purpose of illustration, but may substitute any other form of switch which may be found more convenient. The base 7 is shown as provided with a plurality of sockets 8 for the push buttons 9, each button being biased upwardly by a spring 10, and having a shank 11 passing down through a hole in the bottom of the socket. A shoulder 12 on this shank prevents the spring from thrusting the push button out of its socket, and at the same

time insures that the tops of all the buttons shall stand at the same level above the base when the switches are open. The collar 12 on each shank is preferably formed by a conical head 13 of conducting material which is adapted to pass between and connect two spring contacts 14 15 when the push button is depressed. The contacts are mounted on a sub base 16, which is supported preferably on the parallel links 17 for a purpose hereinafter explained. All the contacts 14 are connected to a common ground wire 18, while the contacts 15 are each connected to one of the wires 5' coming from the lamps. Great care is taken to see that each lamp is connected to the switch whose position on the keyboard exactly corresponds with that of the lamp on the signboard. A suitable source of electric current is provided, such as the generator 19 interposed between the keyboard and the ground in the conductor 18. Or, if desired, the conductors 5 and 18 can be connected respectively with the positive and negative mains of an electric supply system.

Whenever any push button is depressed so that its head 13 closes the circuit of its lamp, the lamp will light up and remain lighted so long as the push button is kept depressed. In order to depress all the buttons necessary to display a given character on the signboard, the operator is supplied with a plurality of forms or dummies, such for example as that shown in Fig. 5. This represents a letter "H" cut out of a sheet of heavy material 20 and provided with a handle 21 by which it can be manipulated. Along one side runs a depending flange 22 adapted to slip in between the push buttons in two adjacent rows, so as to aline the form when placed upon the keyboard. To exhibit a word on the sign all the operator has to do is to drop the necessary letter forms upon the keyboard one after the other and the proper lamps will blaze out the letters and words he selects. In the same way, a simple design, such for example as that of a house, as indicated in the drawing, can be shown by applying a suitable form to the keyboard. Advertisements of real estate, or shoes, or cigars, etc., can thus be readily displayed to the public in connection with reading matter concerning the same.

In case the operator has but a limited supply of letters, as for example a single alphabet, and wishes to spell out words requiring a duplication of some letters, he can do so by using self-locking or "snap" switches. Thus, for example, the spring contacts may be made to engage and hold the heads 13 when the push buttons are depressed. In Fig. 2 the contacts are shown as provided with hooked ends which snap over the shoulders 12 formed by the heads 13 where they unite with the shanks 11. When once depressed, the shanks will be held down and the operator may then lift up the form and apply it again at some other point on the keyboard. After the sign has been exhibited for a suitable length of time, the push buttons can be released all at once by pushing down the lever 23, which lowers the sub-base 16 and pulls all the contacts away from the heads 13. When these self-locking switches are used, an expert operator can dispense with the forms, and close the switches one by one by hand, thus writing the letters or producing the designs lamp by lamp, in a rapid and attractive manner.

Fig. 6 shows a modified construction of the form or dummy character. Instead of cutting the character from a sheet of heavy material, a rectangular plate 24 is provided, having a handle 25 and provided on its under side with a plurality of small snap buttons 26. A plurality of pegs 26' having snap sockets 27 can be attached to these buttons at the proper places to make up any desired character or design. The pegs are spaced apart at just the same distances as the push buttons in the keyboard, so that when the plate is applied to the keyboard, and guided by its flange 22 into proper alinement, the right buttons will be depressed by the weight of the plate or by the pressure given by the operator to close the circuits of the right lamps to display the design.

In accordance with the provisions of the patent statutes, we have described the best embodiment of our invention, but we wish it understood that the disclosure is merely illustrative of the invention and that other modes of carrying it into effect will fall within its spirit and scope.

Having thus described our invention what we claim is:—

1. An electric sign comprising a plurality of electric lamps grouped closely together, a keyboard having a plurality of switches similarly grouped and each connected with its corresponding lamp, a removable form for depressing the necessary switches to cause the lamps to display a predetermined character, and a flange along one edge of said form to accurately aline the same.

2. An electric sign comprising rows of electric lamps grouped closely together, a keyboard having rows of push buttons grouped closely together and projecting above said keyboard, contacts controlled by each push button in each row, said contacts being electrically connected with the corresponding lamp in the corresponding row, removable forms of flat material to depress the necessary push buttons to cause the lamps to reproduce a predetermined character, and a flange along one edge of each form to enter between two rows of push buttons and accurately aline said form.

3. An electric sign comprising a plurality

of electric lamps grouped closely together, a keyboard having a plurality of switches similarly grouped and each connected with its corresponding lamp, a removable form for depressing the necessary switches to cause the lamps to display a predetermined character, a plurality of studs on said form grouped similarly to said switches, and pegs adapted to be detachably secured to said studs in any desired arrangement, and each adapted to close a given switch when said form is applied to said keyboard.

4. The combination with a keyboard having a bank of push buttons, of a sub-base, contacts on said sub-base coöperating with said push buttons, a bank of electric lamps arranged in a manner similar to the push buttons, each lamp being electrically connected with the contacts which coöperate with a predetermined push button, means for raising and lowering said sub-base, and means whereby, when said sub-base is in its raised position, said contacts can engage with and lock any push button which is depressed, all of the so-locked buttons being released when said sub-base is lowered.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LENORA H. JONES.
LEROY MICHENER JONES.

Witnesses:
J. IRVING PARKER,
BENJ. W. TRUESDELL.