C. A. McNEAL.

ILLUMINATED SIGN.

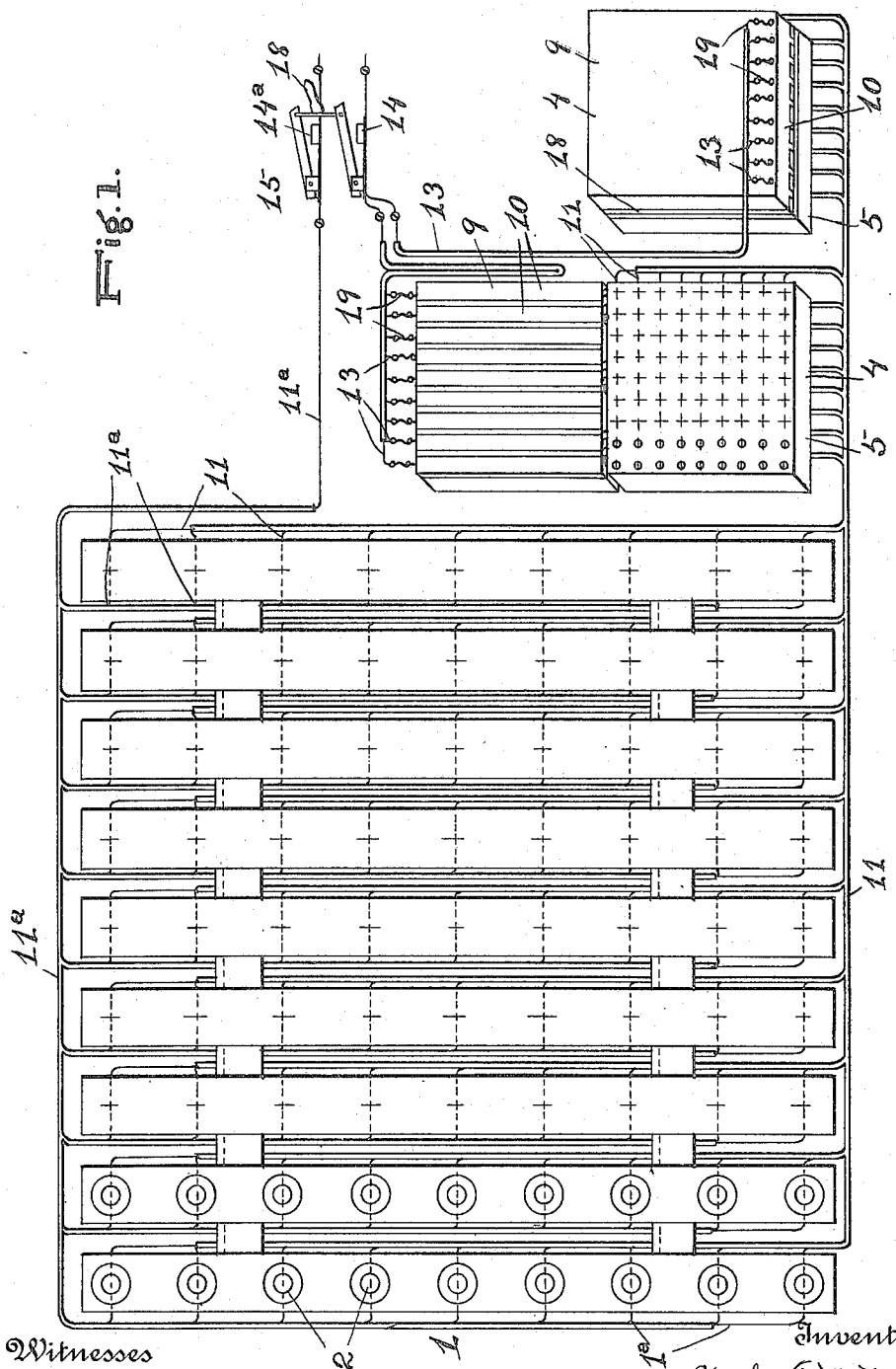
APPLICATION FILED MAY 17, 1911.

1,135,308.

Patented Apr. 13, 1915.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

Stuart Hilder.

Frances M. Anderson.

Inventor

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2 SHEETS—SHEET 2.

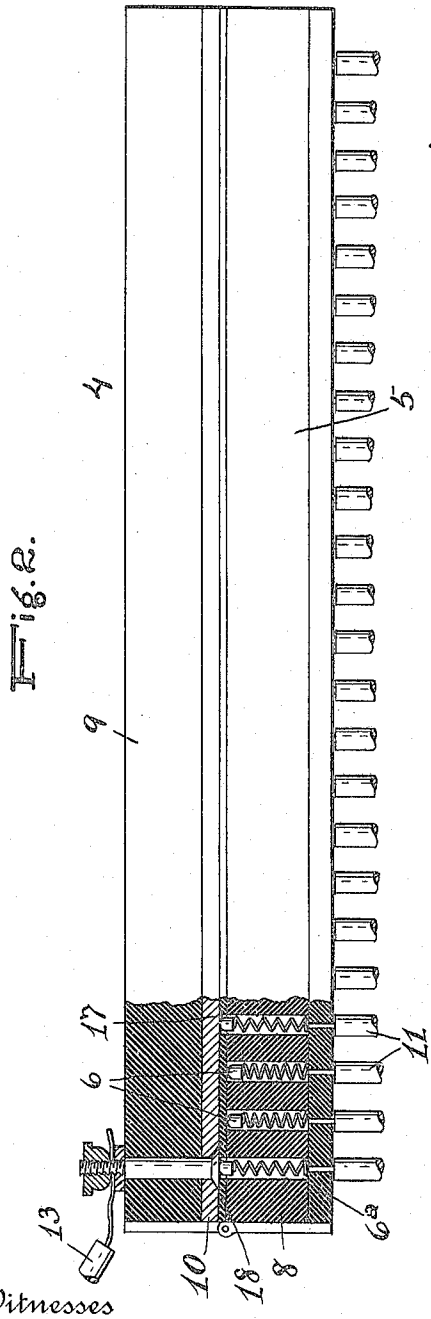


Fig. 2.

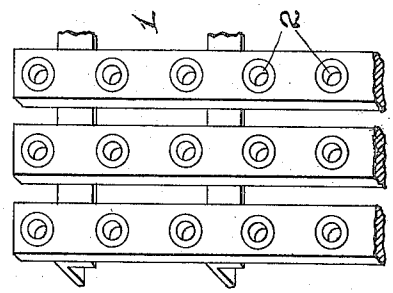


Fig. 4.

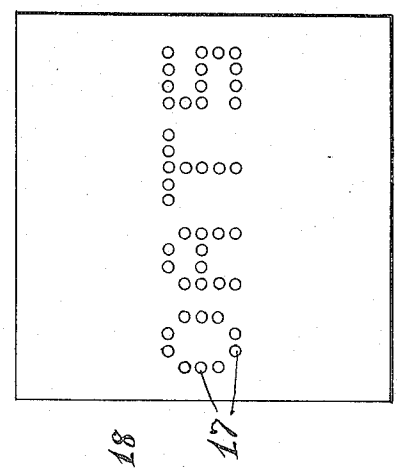


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES A. McNEAL, OF COLUMBUS, OHIO.

ILLUMINATED SIGN.

1,135,308. Specification of Letters Patent. Patented Apr. 13, 1915.

Application filed May 17, 1911. Serial No. 627,829.

To all whom it may concern:

Be it known that I, CHARLES A. McNEAL, a citizen of the United States, resident of Columbus, in the county of Franklin and State of Ohio, have made a certain new and useful Invention in Illuminated Signs; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a front view of the sign, partly in diagram, showing the controller in duplicate with one controller open and the other closed. Fig. 2 is a side view of the controller partly in section. Fig. 3 is a front view of a pattern sheet. Fig. 4 is a fragmentary perspective view of the framework of the sign.

The invention has relation to electrically illuminated signs, and it consists in the novel construction and combinations of parts, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the numeral 1 designates a display or sign board, carrying a plurality of electric lamps 2, 2, arranged in rows, a predetermined number of lamps in each row or in certain rows being designed to be illuminated by the means hereinafter described to display a certain selected design or letter. Of this means the controller 4 is an important element, and is composed of two sections, the one section 5 being provided with a number of depressible contact pins 6, 6, arranged in exactly the same order as the lamps upon the display board, but on a much smaller scale, said pins being carried by coiled springs 6^a located within and separated from each other by insulating material 8. The other and opposing section 9 of the controller is provided with a plurality of metallic contact bars 10, 10, each of which is arranged opposite to and capable of contact with one or more of the members of a row of the pins 6, 6, corresponding to each row of lamps of the sign. Each of the contact pins 6 has a separate wiring connection 11 with the lamp upon the display board to which it individually relates, said lamp having a wiring connection 11^a with a contact 14^a of a switch 15, and each contact bar has a separate wiring connection 13 with the opposite contact 14 of said switch, one wiring connection 13 only being required between each contact bar and the switch contact.

The electric service or source of the electrical current required to illuminate the lamps has wiring connections (not shown) with the two switch contacts 14 and 14^a.

18 designates a pattern sheet composed of insulating material capable of being interposed between the two sections of the controller, said sheet having a plurality of perforations 17, 17, arranged to form a certain selected letter or design, and corresponding in arrangement precisely with the lamps upon the display board which are to be illuminated to reproduce this letter or design. This pattern sheet being placed in opposition to the section 5 of the controller carrying the contact pins and adjusted so that the perforations of the sheet are in register with the proper contact pins, and the other section 9 of the controller being brought in opposition or contact with the other side of the pattern sheet, the contact pins in line with the perforations of said sheet will be caused by their carrying springs to project through such perforations into electrical contact with the bars 10, 10, there being one contact bar for each row of pins and row of lamps, and all of the projecting contact pins of each row making contact with the same bar, to illuminate the lamps of the display board and reproduce thereupon the perforated letter or design of the pattern card, once the switch lever 18 is thrown to make connection between the two switch contacts.

The lamps upon the sign or display board being arranged in rows and the lamps in each row having separate electrical or wiring connection with a single contact bar of the controller, one fuse only is required for all of the lamps of each row, said fuse being located preferably at 19 in the connection 13 of the contact bar with the switch. That is to say each row of lamps with the contact bar corresponding thereto and the wiring connections of each lamp of the row with its contact pin and with the switch contact and of said contact bar with the other switch contact, forms a separate electrical circuit having its individual fuse.

There may be as many as fifty thousand more or less of lamps upon the display or sign board, and the invention is designed to

reduce to a minimum the wiring connections in a changeable electric sign between the controller and the switch, and the number of fuses required for the lamps.

By using a sufficient number of lamps almost any design perforated in the pattern sheet can be reproduced in lighted lamps upon the display board with minimum complication of wiring connections.

In practice, the lamps of the sign or display board are arranged preferably in vertical rows, each row of lamps forming a part of a separate electrical circuit, as before stated, and all of the wiring connections of each circuit being preferably inclosed in an individual conduit. The rows of lamps are so arranged as to leave as much air space as possible between the rows, which will reduce the resistance to the winds, facilitate the location of any defect in the wiring and the removal of any defective part and its substitution by a perfect one.

If desired the perforations of the pattern sheets may be filled in with a substance which is a good electrical conductor (not shown).

It is preferred to provide the controller in duplicate as shown, in order that the change of sign may be made without delay.

Having thus described my invention, what I claim as new and desire to obtain by Letters Patent is:—

In a sign adapted for electrical illumination, a controller member having a series of parallel circuit bars, a display board having a similar series of parallel frame bars corresponding respectively to said parallel circuit bars, a second member having a plurality of contact points arranged in rows opposite said circuit bars and capable of contact therewith, a similar plurality of lamps upon said display board arranged in rows along said frame bars and having respectively position thereon corresponding to said contact points, wiring connections between each of said contact points and a similarly located lamp, wiring connections for establishing a separate electric circuit through the lamps of each frame bar and through the corresponding circuit bar, a fuse in each such circuit adjacent to and in connection with its respective circuit bar, and a removable perforated sheet between the controller members adapted to allow certain selected points only to contact.

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

CHARLES A. McNEAL.

Witnesses:
JOHN UTREVIS,
J. L. BACHMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."