

982,352.

A. V. DIEHL,
ELECTRIC SIGN.
APPLICATION FILED DEC. 31, 1909.

Patented Jan. 24, 1911.

2 SHEETS-SHEET 1.

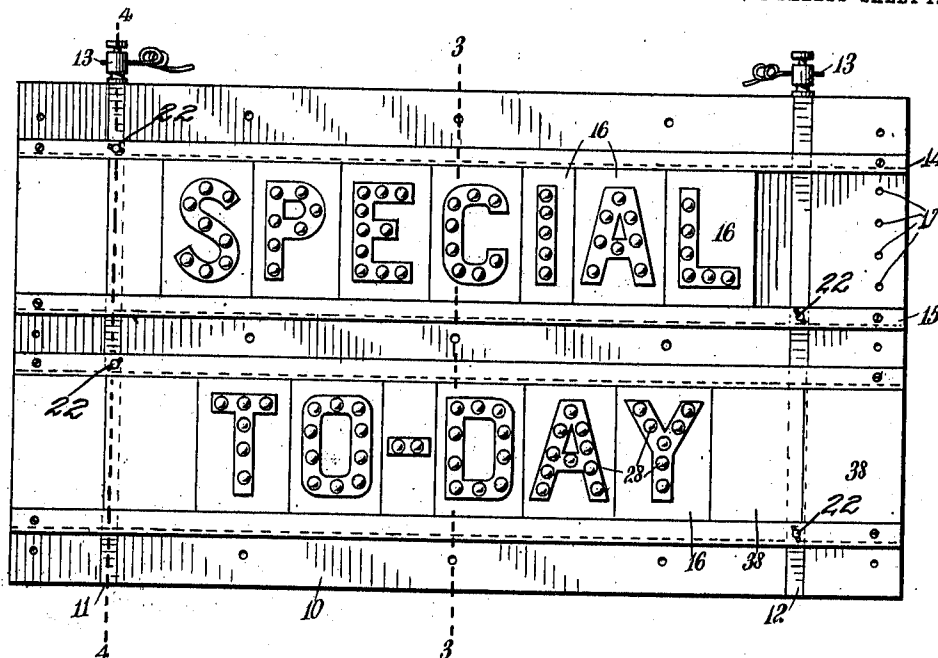


Fig. 1.

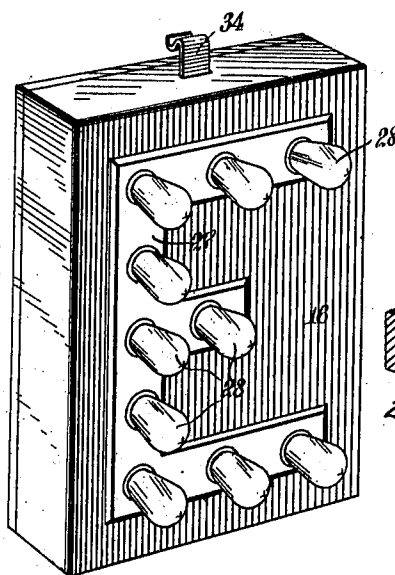


Fig. 2.

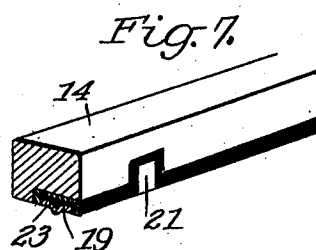


Fig. 7.

WITNESSES:

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C. W. Furber

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2 SHEETS-SHEET 2.

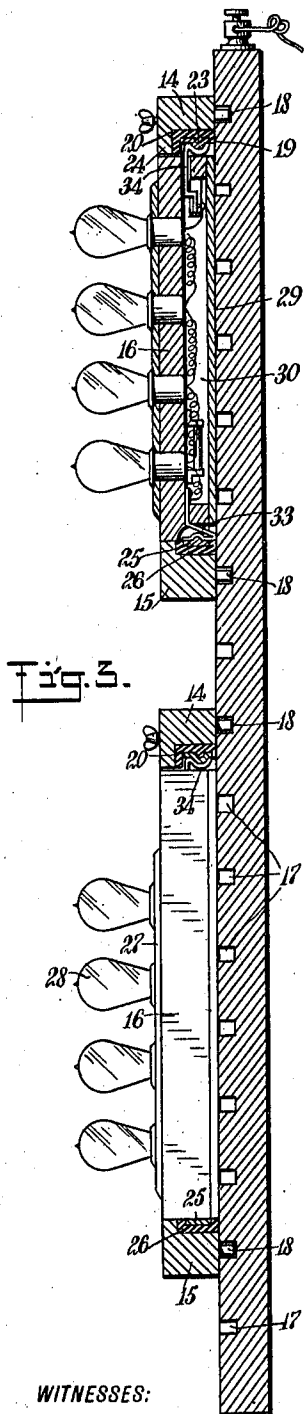


Fig. 3.

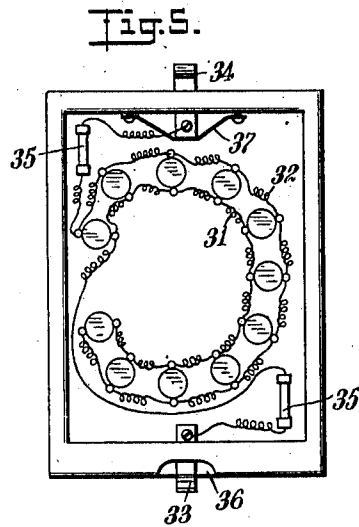


Fig. 5.

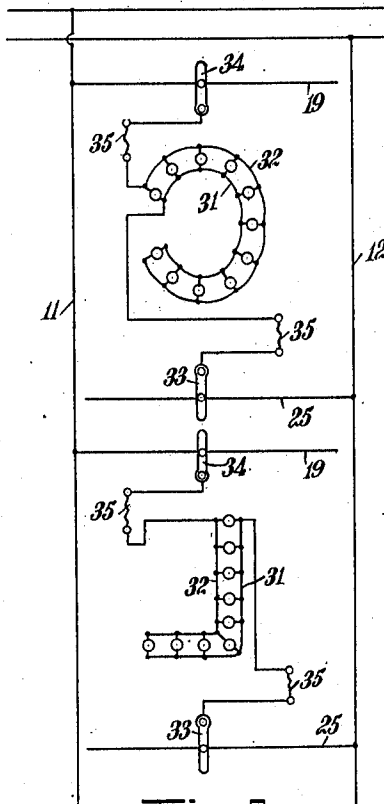


Fig. 6.

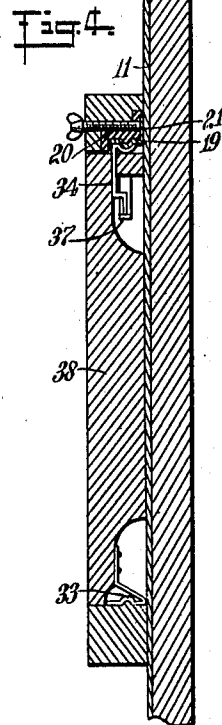


Fig. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ARTHUR V. DIEHL, OF ENGLEWOOD, NEW JERSEY.

ELECTRIC SIGN.

982,352.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed December 31, 1909. Serial No. 535,762.

To all whom it may concern:

Be it known that I, ARTHUR V. DIEHL, a subject of the King of Great Britain, and a resident of Englewood, in the county of Bergen and State of New Jersey, have invented a new and Improved Electric Sign, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in electric advertising or announcing signs, and more particularly to that type of sign in which each letter or character is formed on a separate block or backing adapted to be detachably secured to a frame or support. Each letter is formed of a plurality of incandescent electric lights, and the letter blocks and frame or support are so formed that when the letter blocks are placed in position, the electric connections to the lights are automatically completed.

The main object of my invention is to simplify the construction of the letter blocks and frames, so that the letter blocks will be more firmly held and more easily removed. In my improved construction access may be readily gained to the wiring from the front side of the sign, so that said sign may be permanently secured against a wall or the like. The placing of the letters in position, protects and conceals the contact strips, so that the latter are not injuriously affected by the action of the elements. The lamps may be formed of such small voltage that they require a current of very low potential, and thus expensive insulation need not be employed as a protection against fire.

The invention consists in the combination and arrangement of parts hereinafter defined in the claims, and one form of which is set forth more in detail hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a front elevation of a sign constructed in accordance with my invention; Fig. 2 is a perspective view of one of the letter blocks removed from the sign; Fig. 3 is a vertical section through the sign and taken approximately on the line 3—3 of Fig. 1; Fig. 4 is a vertical section through the sign taken approximately on the line 4—4 of Fig. 1; Fig. 5 is a rear view of one of the letter blocks; Fig. 6 is a wiring diagram showing a portion of the sign with two

letter blocks in position and Fig. 7 is a perspective view of a portion of one of the letter-supporting strips removed from the base or frame.

In the specific form of sign illustrated in the accompanying drawings, I provide a base or frame 10, of such size as to support the desired number of letters going to make up the words which it is desired to display. This base or frame may be constructed in any suitable manner and of any suitable insulating material, and may be provided with means for securing it in position against a wall or against any other suitable support. This base is provided with two substantially parallel grooves extending across the upper or outer face of the base, and within the two grooves are two contact strips or conductors 11 and 12, which may be formed of copper or other suitable conducting material and which completely fill the groove, so that their outer surfaces lie flush with the outer surface of the base. These two contact members 11 and 12 may be adjacent opposite ends or adjacent the same end of the sign, but are out of electrical contact with each other. Each strip is provided with means whereby an electric feed wire may be attached thereto, and in the specific form illustrated, the upper ends of the two strips are bent to lie across the upper edge of the sign, and binding posts 13 are secured through these ends to additionally secure the contact strips in position.

Extending transversely of the front side or face of the base, are a plurality of strips, which serve not only to support the letter blocks, but also to conduct the current thereto. These strips are arranged in pairs and there may be provided as many pairs as it is desired to support lines of display matter. The two strips or bars 14 and 15 of each pair, are adapted to support between them a plurality of letter blocks 16, the details of the preferred form of which will be set forth more fully hereinafter.

In order to support letter blocks of different heights, the strips 14 and 15 are detachably secured in place, so that they may be adjusted toward or from each other at will. As shown, the base 10 is provided with a series of rows of openings, sockets or recesses 17, extending substantially parallel to the contact strips 11 and 12, and the openings of each row are spaced apart a distance not greater than the difference in height of dif-

ferent sets of letter blocks which may be provided. Each of the strips 14 and 15 is provided with dowel pins or plugs 18, which are adapted to fit within the recesses 17, so as to hold said strips in engagement with the base. The pins or plugs may fit friction tight, or they may be held within the recesses in any other suitable manner. Each strip is provided with a plurality of pins or plugs along its length, and is spaced apart a distance corresponding to the distances between the rows of openings 17, so that when the strip is placed in position substantially at right angles to the several rows of openings 17, each dowel pin or plug will enter the corresponding opening and hold the strip against any lateral bending or warping between its ends. The strip may be readily removed from the base, and moved toward or from its opposed strip and secured in position by inserting the dowel pins or plugs into other openings in the base.

Each strip 14, in the face thereof toward its corresponding strip 15, is provided with a groove or channel within which there is mounted a contact strip 19. This strip 19 may be of metal or of any other suitable conducting material, and in order to prevent any short-circuiting or loss of current, it is preferably insulated from the body of the strip 14 by a layer of insulating material 20. The contact member 19 is cut away at its inner edge, so that it does not engage with the surface of the base (see Fig. 3). At one point along the length of the contact member 19, it is provided with a laterally-extending lug 21, which is so positioned that it will engage with the contact member 11 of the base, irrespective of the position of the strip 14 along said contact member. For insuring the contact of the lug 21 with the contact member 11, the strip may be provided with a set screw 22, which may be operated from the outer end and which engages with the lug to press it downwardly. The contact member 19 may be of any suitable form in cross section, but is illustrated in the form of a bar having a corrugation or ridge 23, extending lengthwise thereof and intermediate its side edges.

Preferably, the outer surface of the contact member 19 is below the surface of the strip 14, so that there will be a groove or channel beneath an overhanging flange 24 on said strip. The strip 15 may be constructed somewhat similar to the strip 14, and may have its contact strip 25 and its insulation 26. The contact strip 25, instead of having a lug for engagement with the contact member 11, has a lug for engagement with the contact member 12, so that the two contact members 19 and 25 of the two strips 14 and 15 will be electrically connected to the two separate binding posts. Preferably, the outer surface of the contact

member 25 is flush with the surface of the strip 15, so that there is no overhanging flange or ledge corresponding to the flange 24 above referred to. For use in connection with these strips, I employ a plurality of the letter blocks 16, which are of a thickness substantially equal to the thickness of the strips 14 and 15, and are of such height that when the strips 14 and 15 are properly adjusted the blocks will fit snugly therebetween. The body of each block may be formed in any suitable manner, and may have any letter, numeral, character, or designation thereon.

It is evident that the specific character represented by the block is immaterial, as far as the construction of the block is concerned, and, therefore, by the term "letter block," I wish to include blocks with numerals, punctuation marks, geometrical figures, or any ornamental design or portions of designs formed by electric lights upon the blocks. The specific form of block illustrated is rectangular and has upon its outer face, a raised portion 27 forming the letter or other character. Along this raised portion are a plurality of sockets into which may be screwed or otherwise secured, small incandescent electric lights 28. The block is formed with a removable back 29, spaced from the front to leave an interior chamber or compartment. All of the electric lights have their sockets exposed within this compartment, and the lights of each block are all connected together in parallel by two parallel wires 31 and 32. One of these wires leads to a contact member 33, which is adapted to engage with the contact member 25, and the other wire is connected to a contact member 34, which is adapted to engage with the contact member 19. Within either or both of the wires, I may insert fuses 35 to prevent injury to the apparatus in case a current of too high amperage is delivered. The contact members 33 and 34, which are carried by the letter block and which are connected to the opposite ends of the wires, extend out through the upper and lower ends of the letter block, so as to engage with the contact members 19 and 25 when the letter block is in position. The contact member 33, which is at the lower end of the letter block, is preferably in the form of a piece of sheet metal and extends out from the inner chamber or recess within the block letter, to a recess 36 in the lower edge or bottom of the block. The strip of metal is bent back upon itself, so as to present a resilient terminal portion, and this terminal portion has a groove or recess therein adapted to receive the bead or corrugation on the contact member 25, and to spring or slip into and out of engagement with the latter, as the letter block is sprung into or out of position.

The contact member 34 is somewhat differently constituted, as the lower surface of the contact member 19 is not flush with the lower side of the strip 14. As shown, 5 the contact member 19 is slidable through an opening or passage in the upper edge of the block, and is supported at its inner end by a resilient band or strip 37 of rubber or other suitable non-conducting 10 material. The inner end of the contact member 34 is connected to the wire 32, and at its outer end is bent laterally and presents a groove or recess to receive the bead or corrugation 23 on the contact member 19. 15 In placing the block in position, the upper edge is first brought into contact with the strip 14, so that the member 34 may pass beneath the flange 24, and the lower end of the block is then pressed inwardly until 20 the contact member 33 comes into proper engagement with the contact member 25. Both of the members 33 and 34 have resilient contacting portions, so that when the block is in position, a firm connection will 25 be made from the contact member 19 through the lights on the letter block, to the contact member 25. The block may be very easily removed by pulling outwardly upon the lower end thereof, and after being 30 placed in position between the two strips, it may be moved lengthwise along the strips to any desired position, without in any way interrupting the circuit through the electric lights of the letter. The outer face of the 35 letter block being substantially in the same plane with the outer faces of the two strips, presents an ornamental appearance, and as the upper and lower edges of the letter block come closely adjacent the strip, there 40 is no gap or space within which dirt or other foreign material accumulates. The strips may be adjusted toward or from each other at will, to accommodate large or small letters, and the simple act of securing the 45 strip in position, will make the electric contact with the corresponding member 11 or 12.

I may, if desired, provide a series of blocks somewhat similar to the letter blocks but without any lights thereon and without 50 any circuit or chamber therein. These dummy blocks 38 may be used for spacing separate words or for filling in at the end of the line. This block may have the same contact members 33 and 34, but such contact 55 members will serve simply to hold the block in position.

It is of course evident that various changes may be made in the construction of the several parts and their relative arrangements, 60 without in any way departing from the spirit of my invention. The specific device

which I have described above and which is illustrated in the drawings, constitutes merely one form which the invention may 65 assume.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. An electric sign having a plurality of contact strips extending across the sign substantially vertically, a plurality of contact 70 strips extending across said sign substantially horizontally, co-acting pins and recesses for securing each of said second-mentioned strips in any one of a plurality of 75 positions and at varying distances from each other, each of said second-mentioned contact strips forming electric connections with one of said first-mentioned contact 80 strips, and a plurality of electrically-illuminated letters or sections adapted to be placed between said second-mentioned contact strips and having exposed contact 85 devices for closing an electric circuit through each letter by the act of putting said letter in place.

2. An electric sign having a base, two contact members extending across the same and countersunk to lie flush with the base of the sign, a series of recesses extending across 90 the base substantially parallel to said contact members, contact members extending across said base substantially at right angles to said first-mentioned contact members and having dowels for insertion between said 95 recesses to secure said second-mentioned contact members in position, and electrically-illuminated letters or sections adapted to be inserted between said second-mentioned contact members and supported 100 thereby and forming electrical connection therewith.

3. An electric sign having a base, two substantially parallel strips secured thereto and extending transversely of the base, each 105 having a portion of the face thereof toward the other strip presenting a contact member, and a letter block disposed between said strips and having a resilient contact member at one edge adapted for engagement with 110 one of said first-mentioned contact members and having a combined contact member and catch for resiliently engaging with the other of said first-mentioned contact members.

In testimony whereof I have signed my 115 name to this specification in the presence of two subscribing witnesses.

ARTHUR V. DIEHL.

Witnesses:

CLAIR W. FAIRBANK,
PHILIP D. ROLLHAUS.