J. M. BROOKS.

ELECTRIC SIGN.

APPLICATION FILED AUG. 5, 1916.

1,251,471.

Patented Jan. 1, 1918.

3 SHEETS—SHEET 1.

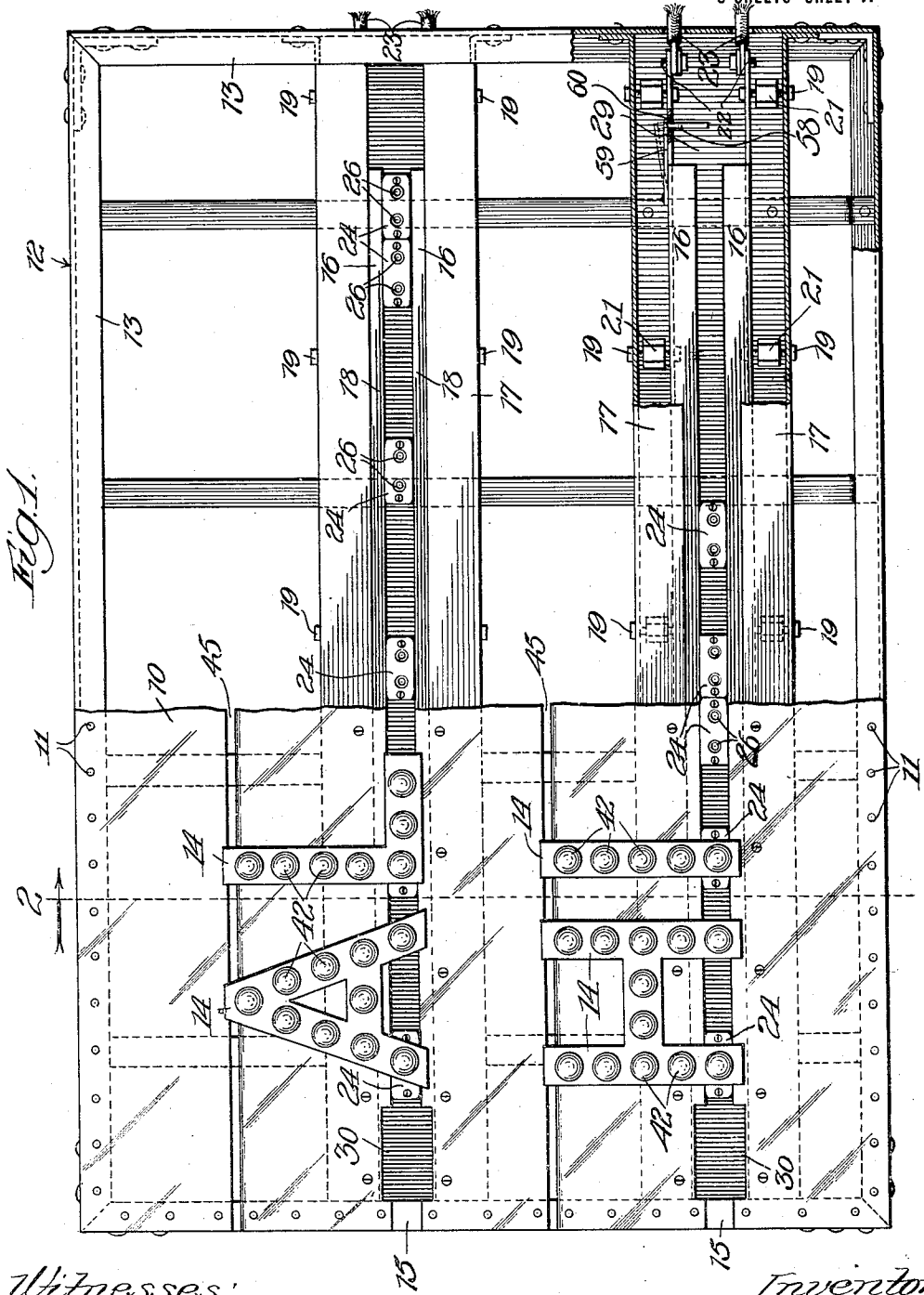


Fig. 1.

Witnesses:
E. S. Taylor.
Irwin C. Bowman.

Inventor:
Jesse M. Brooks,
By Poole & Waters Attys.

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3 SHEETS—SHEET 2.

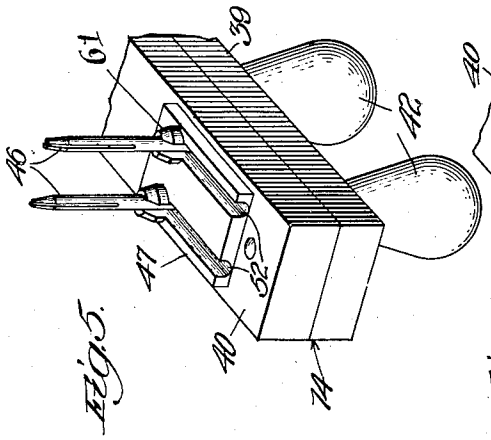


Fig. 5.

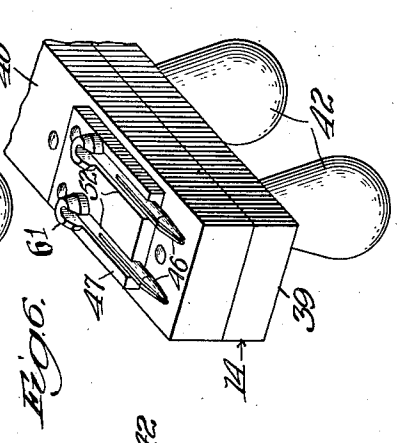


Fig. 6.

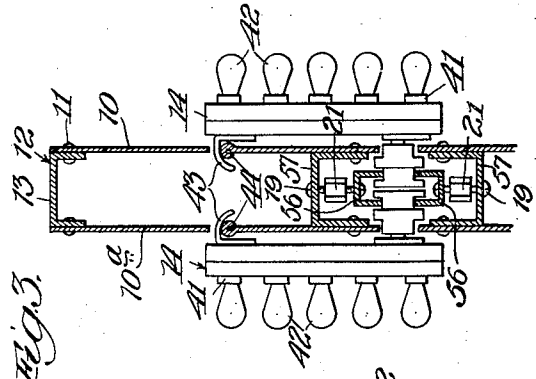


Fig. 3.

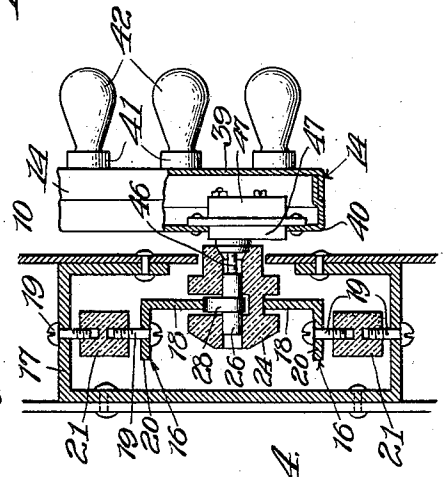


Fig. 4.

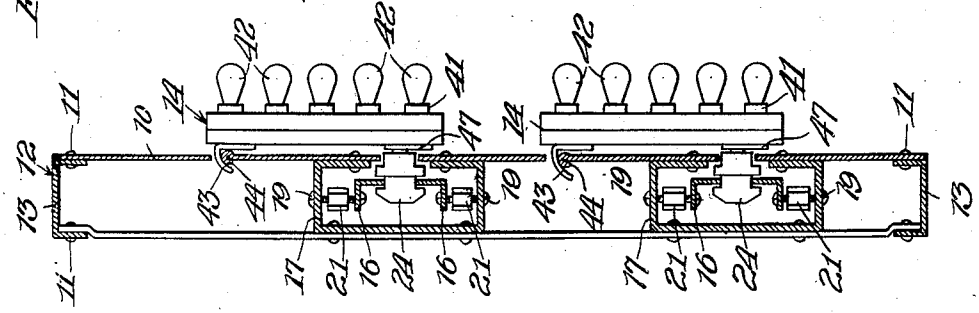


Fig. 2.

Witnesses:

E. E. Gaylord.

Irwin C. Bowman.

Inventor:

Jesse M. Brooks,

By Poole Warren & Phillips

Attys.

J. M. BROOKS.

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1,251,471.

Patented Jan. 1, 1918.

3 SHEETS—SHEET 3.

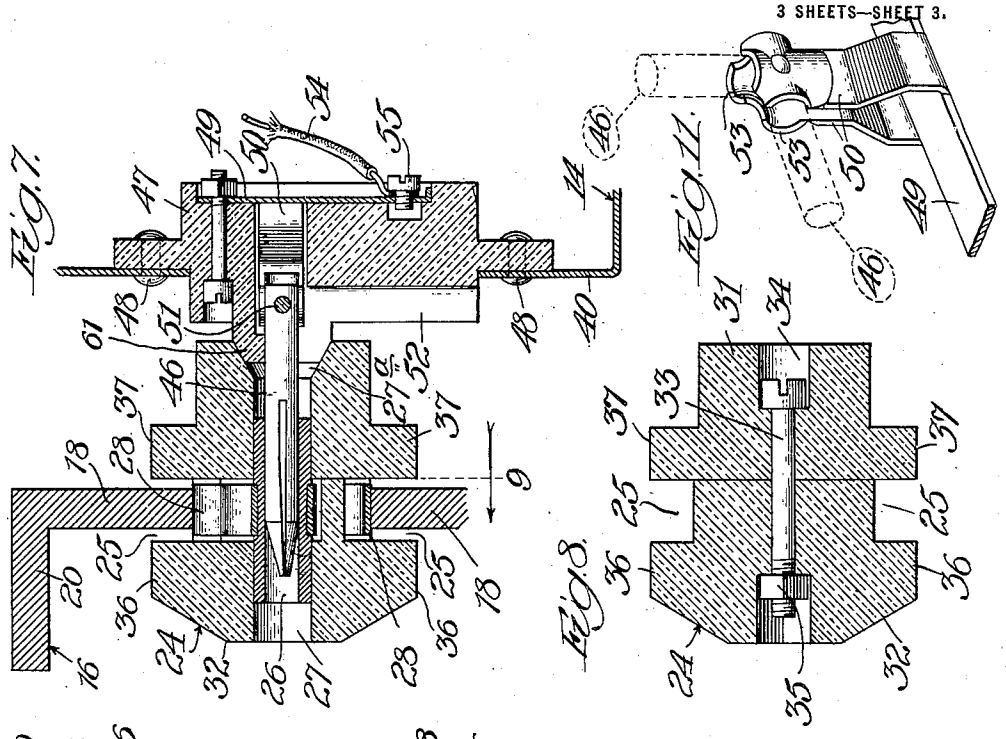


Fig. 7.

Fig. 8.

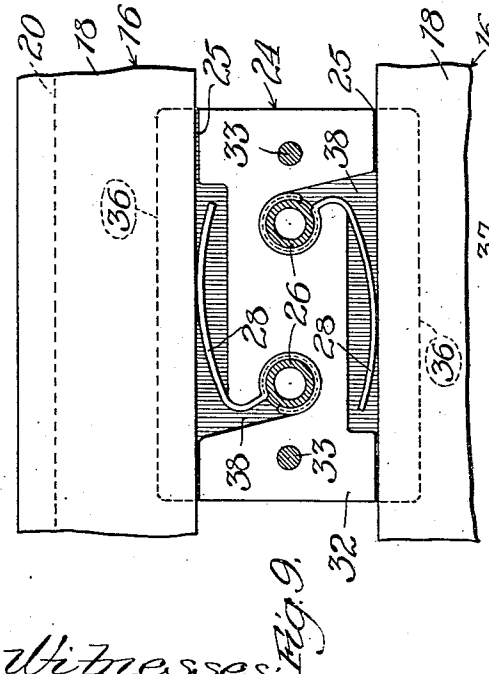


Fig. 9.

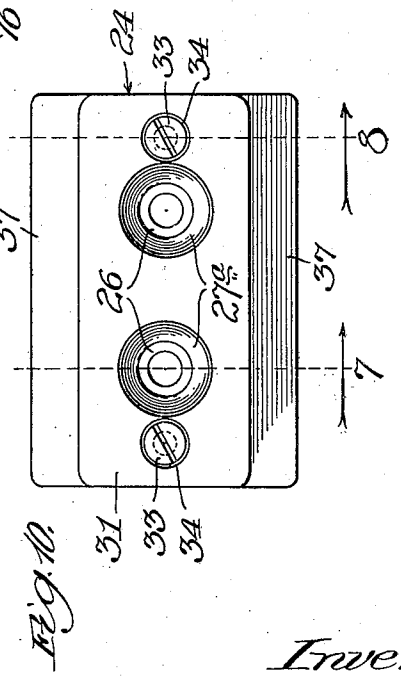


Fig. 10.

Fig. 11.

Witnesses:
E. C. Gaylord.
Irwin C. Bowman.

Inventor:
Jesse M. Brooks,
By Robert Wann
Attys.

UNITED STATES PATENT OFFICE.

JESSE M. BROOKS, OF CHICAGO, ILLINOIS.

ELECTRIC SIGN.

1,251,471. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed August 5, 1916. Serial No. 113,246.

To all whom it may concern:

Be it known that I, JESSE M. BROOKS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Electric Signs, of which the following is a specification.

This invention relates to an electric sign and more particularly to that type of such sign provided with a plurality of illuminated letters or characters adapted to be removably and variously arranged on the face of the sign for changing the subject-matter displayed thereby as desired.

Among the objects of my invention is to improve and simplify the construction of a sign of the kind referred to in the several particulars as hereinafter more fully appear, and to provide in particular a block for each letter or character displayed by the sign, such block establishing the electrical connection between the letter and the source of current supply, thereby requiring the use of no more blocks than the total number of letters that are displayed on the sign at any given time, and thus reducing the constructive cost of the sign as a whole as well as the weight thereof. A further object of my invention is to removably mount the blocks on the sign so that the blocks may be removed for repair as well as be applied to the sign only when required for service with a letter or character to be displayed. A still further object of my invention is to slidably mount the blocks between bars, so that the blocks may be moved across the face of the sign for the purpose of properly spacing the letters apart, and also to permit the blocks to be removed without dismantling the sign board or disturbing any of the electrical connections thereof.

It is also an object of my invention to provide each sign letter or character with two contact plugs pivotally connected therewith, so that the plugs may be readily collapsed against the same when removed from the sign and thereby be out of the way and prevented from being injured during the handling or storage of the letters.

The invention consists further in the matters hereinafter described and more particularly pointed out in the appended claims.

In the accompanying drawings,—

Figure 1 is a front elevational view, with parts broken away and in section, of a sign embodying the features of my invention;

Fig. 2 is a vertical sectional view taken on line 2 of Fig. 1;

Fig. 3 is a fragmentary vertical sectional view of a double faced sign constructed in accordance with my invention;

Fig. 4 is an enlarged vertical sectional view taken through two bus bars of the sign shown in Fig. 1;

Fig. 5 is a perspective view of one of the sign letters or characters and having the hinged contact plugs thereof extending in operative positions or outward therefrom;

Fig. 6 is a similar view of the parts shown in Fig. 5, with the exception that said contact plugs are shown in their inoperative or collapsed positions;

Fig. 7 is a vertical sectional view taken on line 7 of Fig. 10, and showing one of the contact plugs inserted into a contact socket of a block to be hereinafter referred to;

Fig. 8 is a sectional view taken on line 8 of Fig. 10;

Fig. 9 is a similar view taken on line 9 of Fig. 7, the contact plugs and connected parts being omitted for the sake of clearness of illustration;

Fig. 10 is a front elevational view of the block heretofore referred to; and

Fig. 11 is a perspective view of one of the parts employed for pivotally connecting a contact plug with a sign letter or character.

As shown in the drawings, a sign embodying the features of my invention, comprises a base-board 10, preferably made of sheet metal and of a length and width for the sign. Said base-board 10 is secured by rivets 11, 11, or otherwise, to a supporting frame 12 preferably made of connected channel bars 13, 13 applied against the back of the base-board and extending around the same, as shown in Figs. 1 and 2. The sign when installed for use, is customarily suspended or erected in front or on top of a building or other support with its base-board 10 and frame 12 arranged upright. As shown in Figs. 1 and 2, said base-board 10 is made of a height or width to display two horizontal rows of illuminated letters or characters 14, 14, there being a plurality of such characters in each horizontal row. In case a sign of the size to display but a single row or one of more than two rows

be required, the base-board will be made of a height or width accordingly. As illustrated, said base-board 10 is provided with two horizontally disposed slots 15, 15, one for each row of letters 14, 14. Said slots extend across the base-board 10 and open endwise through the side edges thereof. In other words, said base-board is made of a plurality of longitudinal sheet metal sections with the slots 15, 15 formed between the separated edges of said sections. Located back of the base-board 10 at each slot 15 are two oppositely disposed conductors or bus bars 16, 16, extending substantially across the sign and spaced apart throughout their length to provide an open ended slide-way therebetween, such slide-way being in registration with said slot 15. The bus bars 16, 16 at each slot are inclosed in a housing or casing 17 secured to the base-board 10. Each housing 17 is open along its side in contact with the base-board so as to permit the slot 15 to open thereinto. Each housing 17 forms a weather-proof shield and protects the inclosed bus bars from injury. As shown in the drawings, said bus bars 16, 16 are L-shaped in cross-section and are arranged with their vertical flanges 18, 18 in alinement. Said bus bars are secured to the top and bottom walls, respectively, of the housing 17 by fastening screws 19, 19 inserted through said walls and the horizontal flanges 20, 20 of said bus bars. The latter are insulated from the housing by insulating washers 21 encircling said screws and interposed between said walls and flanges. As shown in Fig. 1, each bus bar 16 is provided at one end with a binding terminal 22, one of the lead wires 23 of the sign being attached thereto.

Slidably mounted between each two bus bars 16, 16 is a block 24 made of insulating material and provided with grooved edges 25, 25 to receive the vertical flanges of said bars, as best shown in Figs. 4 and 7. Said block is provided with two contact members in the form of metal tubes 26, 26 open at each end and extending transversely through the block in holes 27, 27, provided for that purpose. Said tubes 26, 26 form sockets and receive contact plugs on the sign character or letter 14. Said block is also provided with two curved and flat spring contact strips 28, 28, one connected with each tube and projecting alternately into said grooves 25, 25, through the bottom walls thereof, as shown in Figs. 4, 7 and 9. Said contact strips 28, 28 bear against the edges of the vertical flanges of the bus bars, and electrically connect the same with said tubes, so that when the contact plugs of a letter 14 are inserted in said tubes the letter is electrically connected with said bus bars. Said contact strips 28, 28 bear yieldingly against said bus bars and hold the block 24 from being accidentally moved or shifted endwise thereof. To permit the block 24 to be readily inserted into the slide-way between the bus bars and then to be subsequently removed therefrom, the vertical flanges 18, 18 of said bars are cut away or terminate short of the ends of said bars to provide an enlarged space or opening 29 at the ends of said slide-way, as shown at the right in Fig. 1. Each slot 15 is provided adjacent each end with an enlarged opening 30 which registers with said opening 29, as shown at the left in said Fig. 1. Consequently, when a block 24 is slid from the slide-way into said opening 29, the block may be readily removed from the sign by withdrawing the same outward through the associated opening 30. Reversely, by passing a block 24 through one opening 30 into the registering opening 29, said block may be moved into the slide-way through its open end as is apparent.

To facilitate the construction of the block 24, the same is made in two parts 31, 32, clamped together by clamp bolts 33, 33 inserted through said parts in bolt holes 34, 34 provided for that purpose. The head of each bolt 33 is counter-sunk in an enlarged recess at one end of the bolt hole 34, and the clamp nut 35 on the opposite end of the bolt is likewise counter-sunk in an enlarged rectangular recess at the corresponding end of said bolt hole, said last named recess preventing the nut 35 from rotation when the bolt is turned. Said parts 31, 32 are provided with ribs or flanges 36, 37 between which said grooves 25, 25 are formed, as best shown in Fig. 8. As illustrated in Fig. 9, one of the parts of the block, and preferably the part 32, is provided (in that face thereof which contacts with the other part 31) with two chambers 38, 38, opening alternately into the grooves 25, 25 through the bottom walls thereof. Said chambers 38, 38 receive the spring contact strips 28, 28 as shown in Fig. 9. The tubes 26, 26 extend through said chambers and the inner ends of said strips are bent around the same. Each tube is provided intermediate its ends with an annular recess to receive the bent ends of said strips. When the parts 31, 32 are clamped together, one part covers the open sides of said chambers 38, 38 and thereby presents the tubes and spring strips from being withdrawn therefrom. In case either one or both of said tubes or strips become damaged or broken access may be readily had thereto for repair or otherwise by unclamping and separating the parts of the block.

Each letter or character 14 to be displayed by the sign comprises a hollow casing made in the shape of such letter or character. Said casing has an outer wall 39 and a rear wall or base member 40.

Fitted in said outer wall is a plurality of sockets 41, 41 adapted to receive incandescent electric lamp bulbs 42. Secured to the rear wall 40 adjacent its upper edge is a hook 43 (Figs. 2, 3 and 4) designed to engage over a flange or rod 44 on the base-board 10 above one of the slots 15. Said hook 43 removably supports the letter casing 14 on the face of the base-board 10 as shown. In the drawings, said rod 44 is formed by the lower edge of a slot 45 provided in the base board and extending across the same. Each letter 14 is provided on its rear wall 40 with two split contact plugs 46, 46 adapted to be inserted into the contact tubes 26, 26 of a block 24. Said contact plugs 46, 46 are pivotally connected with said rear wall 40 so as to be swung or collapsed against the same when disengaged from said contact tubes and the letter removed from the sign. Such pivotal connection is made as follows: A block 47 of insulating material is applied against the rear wall 40 and secured thereto by fastening members 48, 48. Secured to said block 47 are two conductor plates 49, 49, each being provided with two outwardly projecting arms 50, 50, laterally spaced apart and between which the inner end of a contact plug 46 is pivotally connected by a pivot pin 51. Said block 47 is provided in its outer face with two grooves 52, 52 adapted to receive said plugs when swung or collapsed thereinto, as shown in Fig. 6. When in positions to be inserted in the socket tubes 26, 26, the plugs 46, 46 project outward from the rear wall of the sign letter 14, as shown in Fig. 5. Whereas, when withdrawn from said sockets and removed from the sign-board 10, said plugs 46, 46 may be swung or collapsed into said grooves 52, 52 and be in effect against the rear wall of the letter, as shown in Fig. 5. In order to hold said plugs 46, 46 in their outward projecting positions or in their collapsed positions, that is, to prevent the plugs from being accidentally moved from either of said two positions, I provide a means for resiliently engaging the plugs while in such positions. Such means is preferably constructed as follows: As shown in Fig. 11, the arms 50, 50 are provided with outwardly bulged parts 53, 53 forming receiving sockets at right angles to each other, such sockets communicating through a restricted passage. When the plug 46 is swung into outwardly projecting position from collapsed position, the arms are spread apart until the plug enters one of the sockets between the parts 53, 53, whereupon such parts spring back and engage around the plug, thus resiliently holding the same in such position. The same action takes place when the plug is swung into its collapsed position. (See Fig. 11). An electrical connection is made between the plugs 46, 46 of each letter and its lamp sockets by conductor wires 54 attached to binding screws 55 on each of the plates 49, as shown in Fig. 7.

Now, referring to the manner in which the sign is used. Said sign is usually suspended or erected in front of theaters, such as vaudeville houses, moving picture places, amusement parlors and the like, for the purpose of displaying by the means of illuminated letters or characters the names of the plays or other attractions on exhibit at such places, the letters being changed from time to time so as to advertise the change of attractions or plays. If the subject-matter to be displayed by the sign comprises, say, ten letters 14, there being four in one horizontal row, and six in the other row, a like number of blocks 24 are slid in the slide-way between the bus bars 16, 16 of each row. The blocks 24 are customarily inserted between the bus bars at one end and one at a time. After the required number of blocks 24 are inserted between the bus bars, such blocks are shifted endwise of the bus bars until occupying positions required for properly spacing apart the letters to be hung on the base-board 10 and engaged with said blocks. It is, of course, understood that the contact plugs 46, 46 of the letters used, are swung into their outwardly projecting positions and inserted or pushed into the sockets 26, 26 when the letter is hung on the sign board. To change the subject-matter of the sign, the desired letters or characters 14 are placed on the base-board 10 and additional blocks 24 are added, if desired. But in no case, will any more blocks 24 be required than the total number of letters on display by the sign. If a sufficient number of blocks 24 are already between the bus bars, such blocks may be moved or shifted endwise of said bars so as to effect the proper spacing apart of the letters attached or "plugged" into the same.

Some of the advantages arising in the use of my invention will appear as follows: By providing a block for each letter or character there need be no more blocks 24 on the sign at any given time than required by the total number of letters displayed at such time. Consequently, the constructive cost of the sign is reduced to the lowest figure, because only that number of blocks 24 need be supplied with each sign as to accommodate for the maximum number of letters that may be displayed on the sign at a given time. Moreover, by the provision of bus bars, all of the blocks 24 therebetween are supplied with an electric current no matter what position such blocks occupy in the length of said bars. The blocks being removable from the bus bars, the blocks may be readily removed for repair or otherwise

without dismantling the sign board 10 or disturbing any of the electrical connections thereof. This is a decided advantage over signs of the type referred to and as heretofore constructed, as the latter contain a plurality of fixed contact sockets in each horizontal row, all of such sockets being wired in a more or less complex manner to the main leads, and requiring that the sign board be dismantled to a considerable extent when repairs are made to any one or all of the sockets. Then again the blocks 24 being slidably mounted between bus bars, said blocks may be readily and easily shifted endwise thereof for the purpose of spacing the letters. This feature makes it possible to employ but one block for each letter displayed, instead of an excess number of sockets as required in the signs as heretofore made. As an additional feature, my novel sign is much lighter in weight than the sign as heretofore made, because only that number of blocks 24 are required equal to the number of letters displayed at any given time, whereas in the sign as heretofore made a maximum number of sockets are required in the sign, whether all of such sockets are used or not. Other and further advantages arising out of the use of my invention will be apparent to those skilled in the art.

Then the fact that the contact plugs 46, 46 are pivoted on the letters makes it possible to place or swing such plugs into collapsed positions and thus be out of the way and prevented from being injured or damaged by striking or hitting against other objects in the handling of the letters, whether in transportation or storage. Moreover, when the plugs are collapsed the letters may be packed or stored away one against the other, and occupying no more space than required by the size and dimensions of the particular letter.

To apply my invention to a double-faced sign, that is, a sign wherein the letters or characters are displayed on opposite sides thereof, I provide a sign with two oppositely disposed base-boards 10, 10ª, the latter being arranged back to back as shown in Fig. 3, and with the bus bars 56, 56 located therebetween and adjacent oppositely disposed slots 15, 15, one provided in each base-board. In such a sign, the bus bars 56, 56 are preferably channel shaped, with the channels opening toward each other, and the two vertical flanges of each channel bar being in alinement, thus forming the slide-ways for the blocks 24, 24. Said bus bars 56, 56 are protected by channel shaped housings 57, 57 secured to the base-boards as shown in Fig. 3. The same type of block 24 as employed in the single faced sign shown in Figs. 1, 2 and 4 is used in the double-faced sign shown in Fig. 3. The letters 14 for the double-faced sign are engaged with the associated blocks 24 in the same manner and used in the same way as in the single-faced sign. Except for the few differences noted, the remaining parts of the construction of the double-faced sign are the same as in the single-faced sign and like parts are indicated by the same reference character.

To prevent the blocks 24, 24 from being moved out of the slide-way, I provide stop-members 58, 58 at the open ends thereof, there being a stop member on each bus bar 16, 16 as shown in Fig. 1. Said stop-members project partially across the open ends of the slide-way and are resiliently secured to the bus bars by flat spring strips 59, 59. Thus the stop-members 58, 58 may be moved out of the slide-way so as to permit a block or blocks to be slid thereinto or removed therefrom. Said stop-members project through holes or slots 60, 60 in the horizontal flanges of the bus bars.

As shown in Fig. 7, the block 47 is located in the hollow casing of the letter 14 and is secured against the inner face of the rear wall 40. Said block 47 is provided with an outwardly projecting portion extending through an opening in said rear wall.

Furthermore, each block 47 is provided at each plug 46 with an outwardly projecting boss 61 which extends into a tapered socket 27ª found at the entrance end of the contact tube 26. Said boss 61 tends to shield the plug 46 from the weather when inserted in the tube 26 and also tends to space the lower portion of the letter 14 out of contact with the face of the sign-board 10 so that such letter hangs perpendicular or straight and prevents a dust outline being formed about the letter on the face of the sign board.

Although I have shown and described herein in detail a sign embodying the features of my invention, yet it is to be understood that the details of construction and specific arrangement of the parts shown may be variously modified and changed without departing from the spirit and scope of my invention, and I do not wish to be limited or confined to the exact details of construction and arrangement of parts shown, except as set forth in the appended claims.

I claim as my invention:—

1. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block slidably mounted therebetween and provided with two contact members adapted to have electrical connection with said bus bars, and a sign member provided with at least one lamp socket, said sign member being provided with two contact members adapted to removably engage the contact members of said block.

2. A sign of the character described, comprising a pair of oppositely disposed bus

bars, a block slidably mounted therebetween and provided with two contact members adapted to have electrical connection with said bus bars, and a member provided with contact plugs pivotally secured thereto and adapted to removably engage the contact members of said block.

3. A sign member of the character described, comprising a base-board having a slot therein, a pair of oppositely disposed bus bars secured to said base-board on one side thereof, a block slidably mounted between said bus bars and provided with two contact members adapted to have electrical connection with said bus bars, and a sign member provided with at least one lamp socket, said sign member being provided with two contact plugs adapted to project through said slot and removably engage the contact members of said block.

4. A sign of the character described, comprising a base-board having a slot therein, a pair of oppositely disposed bus bars secured to said base-board on one side thereof, a block slidably mounted between said bus bars and provided with two contact members adapted to have electrical connection with said bus bars, and a member provided with contact plugs pivotally secured thereto and adapted to project through said slot and removably engage the contact members of said block.

5. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block slidably mounted therebetween, and a sign member provided with at least one lamp socket, said sign member and said block being provided with contact means, one in the form of sockets and the other in the form of plugs adapted to be inserted into said sockets.

6. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block slidably mounted therebetween, and a member, said member and said block being provided with contact means, one in the form of a socket and the other in the form of a plug pivoted to the member to which it is attached and adapted to be inserted into said socket.

7. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block slidably mounted therebetween and provided with contact members adapted to have electrical connection with said bus bars, means adjacent the ends of said bars for preventing the block from being moved endwise therefrom, and a member provided with contact plugs adapted to removably engage the contact members of said block.

8. A sign of the character described, comprising a pair of oppositely disposed bus bars spaced apart to provide an open ended slide-way therebetween, a block slidably mounted between said bus bars and provided with two contact members adapted to have electrical connection with said bus bars, and stop members flexibly connected with said bus bars and normally projecting across the open end of said slide-way.

9. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block provided with grooved edges to receive the adjacent edges of said bus bars, two contact tubes in said block, and resilient conductor strips, one connected with each of said tubes and bearing against said bus bars.

10. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block provided with grooved edges to receive the adjacent edges of said bus bars, two contact tubes in said block, and resilient conductor strips, one connected with each tube and extending into said grooves and bearing against said bus bars.

11. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block provided with grooved edges to receive the adjacent edges of said bus bars, said block being made in two parts, means for clamping said parts together, one of said parts being provided with two chambers opening alternately into said grooves, a pair of contact tubes in said block and extending through said chambers, and resilient conductor strips located in said chambers and extending through the open ends thereof into said grooves and bearing against said bus bars, said strips being engaged with said tubes.

12. A sign of the character described, comprising a pair of oppositely disposed bus bars, a block slidably mounted therebetween and provided with two contact tubes adapted to have electrical connection with said bus bars, a member provided with contact plugs pivotally connected therewith and adapted, when swung into positions projecting outward therefrom, to be inserted into the contact tubes of said block, and resilient means connected with said member and adapted to hold said plugs in either extended or collapsed positions.

In testimony that I claim the foregoing as my invention, I affix my signature in the presence of two witnesses, this 1st day of Aug., A. D. 1916.

JESSE M. BROOKS.

Witnesses:
EUGENE C. WANN,
CLARA L. PEOPLES.