March 21, 1944. S. S. GUYRAL 2,344,815

NEON SIGN

Filed Sept. 27, 1940 2 Sheets-Sheet 1

Fig. 1.

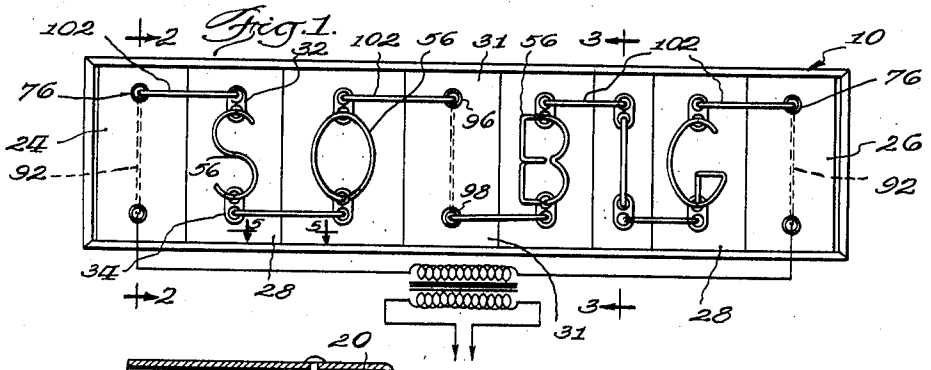


Fig. 2.

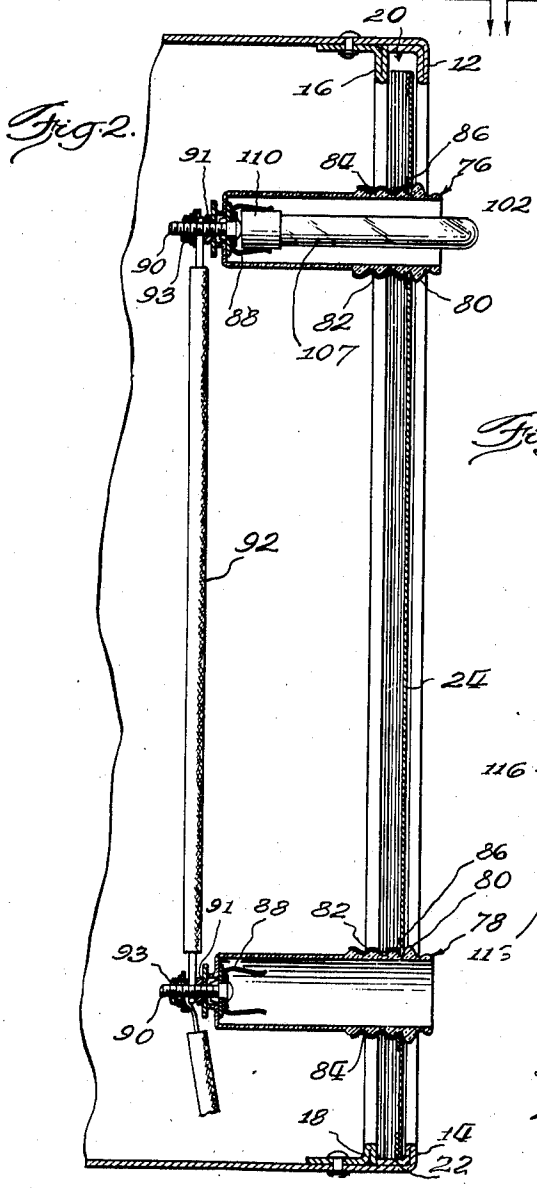


Fig. 4.

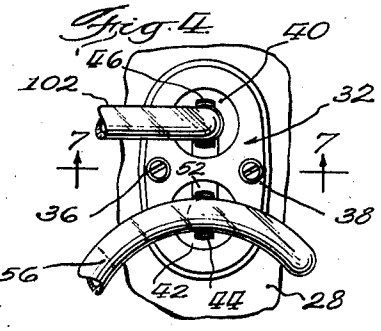


Fig. 5.

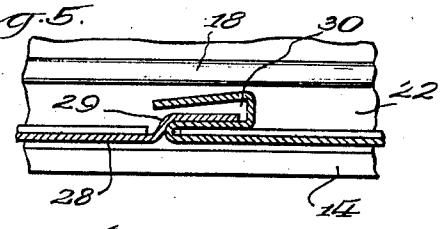
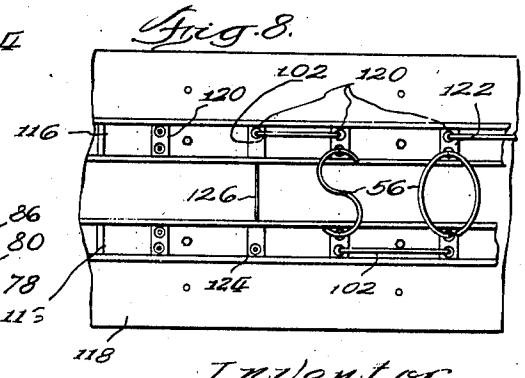


Fig. 8.



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Fig. 3.

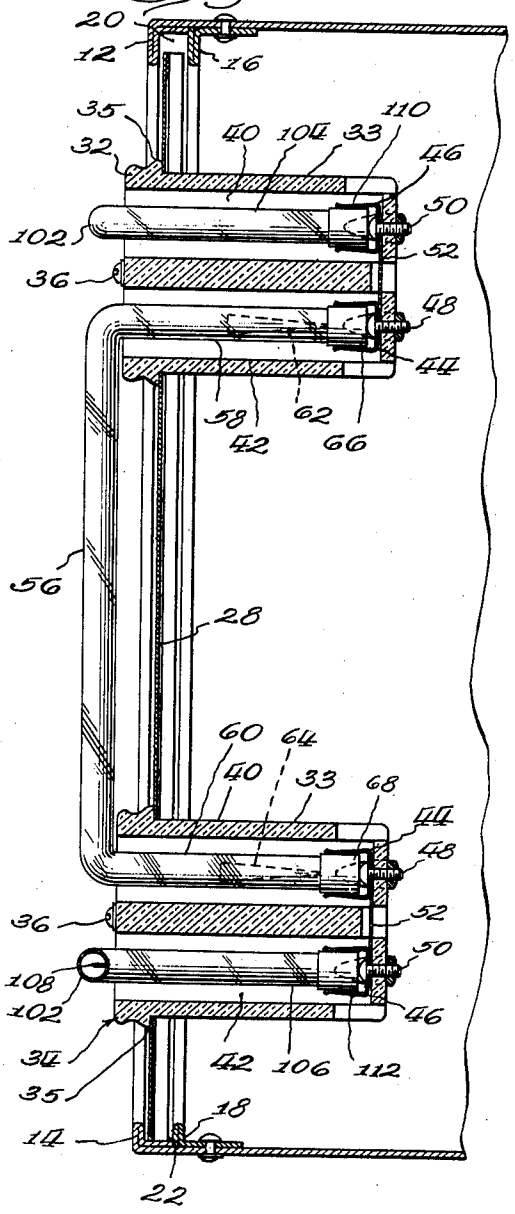


Fig. 6.

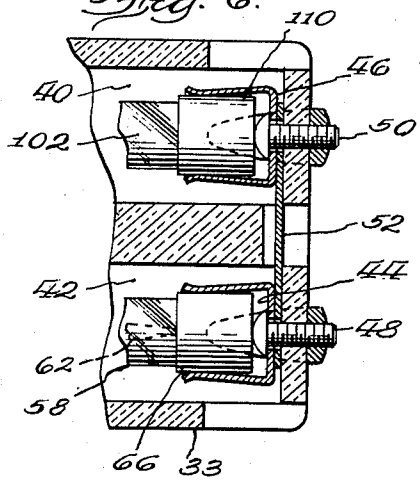


Fig. 7.

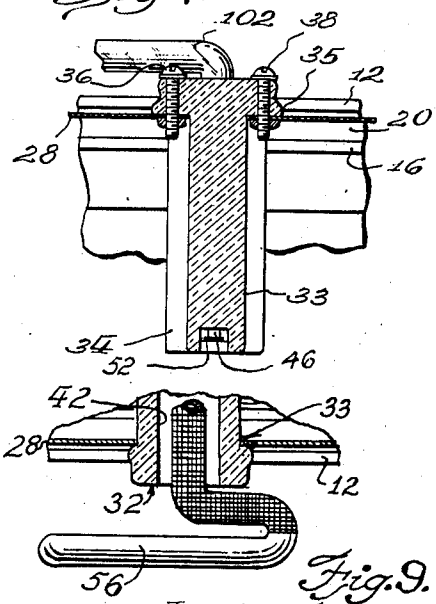


Fig. 9.

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UNITED STATES PATENT OFFICE

2,344,815

NEON SIGN

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Application September 27, 1940, Serial No. 358,603

12 Claims. (Cl. 40—130)

This invention relates to signs of the type which are illuminated by electrically energized bright colored gases, such as neon gas, and more particularly to a sign of this type which is made with separate interchangeable letters so that the copy on the sign may be changed by removing the letters from the sign and replacing them in a different order.

The copy on a neon sign which is to be used by a store, restaurant, or the like establishment, to display its name and general character, is rarely changed, and can be more or less permanently mounted. Such permanent signs may comprise a single gas-filled tube forming the entire wording of the sign, or, in the larger permanent signs, a limited number of separate tubes or units may be used to form the complete sign. Signs of this type must be assembled at the factory because they must be carefuly insulated, and the wording of the sign can be changed only by the reconstruction of the sign at the factory. Careful insulation of conductors in the sign is required because signs of this type operate only on a current of voltage much higher than the voltage in the ordinary line, and for this reason, a step up transformer is also required for each sign, or where the sign consists of several units for each unit in the sign. The cost of transformers necessary in the operation of the present multi-unit neon signs and the cost of making the units raises the price of such signs to such an extent that very few can be sold.

In certain places, such as theatre and night club marquees, neon signs can be used to great advantage because of their brilliance, readability from a distance, and superior power of attracting attention, but frequent changes in the programs at such places necessitate frequent changes in the display signs and because the neon signs now on the market cannot be changed readily, they are not adaptable to use at places of this character. The present invention contemplates an electrically energized gaseous sign having letters which are readily interchangeable so that the copy of the sign may be changed as frequently as desired without great trouble.

An object of the invention is the provision of a neon sign in which the letters of the sign are readily removable and may be used interchangeably.

Another object of the invention is the provision of a neon sign in which each letter of the sign comprises a separate unit which is removably mounted in a letter-carrying panel.

A further object of the invention is the provision of a neon sign in which each letter in the copy on the sign is carried by a separate panel which forms the background for the letter and which is capable of interchangeable use with the other letter carrying panels of the sign.

A further object of the invention is the provision in a neon sign of removable insulated conductors which electrically connect the various separate letters of the sign to form an electrical circuit therethrough when the letters are assembled to form copy on a sign.

A further object of the invention is the provision of spacer panels in a neon sign for properly spacing words in the sign and also for conducting current between separate words in conjunction with removable connecting conductors.

A further object of the invention is the provision of a neon sign having removable letters carried by interchangeable letter panels, the letter panels also being interchangeable with spacer panels and adaptable for use in conjunction with the spacer panels to form copy on the sign which may be changed as frequently as desired without dismantling the sign.

A further object of the invention is the provision of a neon sign made up of numerous units adaptable for interconnection to form an electrical circuit through the sign so that only one step up transformer is required to supply current of the required voltage to the sign.

These being among the objects of the invention, other and further objects will become apparent from the drawings herein, the description relating thereto, and the appended claims.

Referring now to the drawings:

Fig. 1 is an elevational view of a sign embodying the principles of the invention;

Fig. 2 is a sectional view through an end plate taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a plan view showing the details of the socket in which letters and jumpers are mounted;

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 1 showing the manner in which the edges of adjoining letter panels fit together.

Fig. 6 is an enlarged sectional view of the lower end of a letter carrying socket;

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 4;

Fig. 8 is an elevational view of a modified form of my invention; and,

Fig. 9 is a view partly in section through the inner section of the socket shown in Fig. 4,

showing the manner in which the ends of the letters are molded.

An assembled sign embodying the invention is shown in Fig. 1 and comprises a supporting structure 10 in the form of a hollow elongated sheet metal boxlike casing having one side open. On the open side, the metal forming the sides of the casing is bent inwardly through an angle of 90° to form retaining flanges 12 and 14, the upper retaining flange 12 being about double the height of the lower retaining flange 14. Angle strips 16 and 18 of sheet metal are secured on the inside surface of the top and bottom of the casing parallel with the retaining flanges of the casing and form channels 20 and 22 with the retaining flanges of the casing. End panels 24 and 26 and a plurality of letter panels 28 and spacer panels 31 are slidably mounted in the channels 20 and 22 formed by the angle strips and the retaining flanges of the casing.

Each letter panel 28 is of rectangular shaped sheet metal of a height slightly less than the height of the casing and has a double bend in one of its longer edges, causing that edge to be slightly recessed from the plane of the face of the panel as at 29 in Fig. 5. The opposite edge of the panel is folded to form a U-shaped channel 30 along the backside of the panel. A pair of double sockets 32 and 34, which are similar in construction, are mounted in spaced relation on the vertical center line of the panel. Each socket is made of insulating material moulded into an elongated body 33 and has an enlarged outer end which forms a projecting edge 35 on the body. The letter panels have two openings therein which receive the elongated part of the socket, with the projecting edge 35 abutting against the face of the panel. The sockets are held in place by bolts 36 and 38, which pass through the projecting edge and the panel and are secured by nuts threaded on the ends of the bolts and bearing against the backside of the panel.

Two bores 40 and 42 extend into the elongated body of the sockets 32 and 34. In the lower end of the bores, pronged spring clips 44 and 46 are secured by bolts 48 and 50 which pass through the end of the socket and are held in place by nuts threaded on the outer ends of the bolts.

Electric current is carried between the bolts in each socket by a conductor 52 which passes through the web of insulating material separating the two bores of the socket and has its ends secured on the bolts. The head of each bolt 48 and 50 forms an electrical contact at the bottom of the bores in each socket.

Each letter panel 28 carries a letter 56 of moulded glass tubing. Tubular arms 58 and 60 moulded on each letter project outwardly at right angles thereto and are spaced at such a distance from each other that they may be inserted in the inner bores of the two double sockets on any letter panel 28 and bridge the gap therebetween. The arms house electrodes 62 and 64 which are sealed in the outer ends of the arms and are electrically connected to caps 66 and 68 pressed over the ends of the arms. The ends of the arms are pressed into the pronged spring clips 44 in the bottom of the bores until the caps 66 and 68 contact the heads of the bolts 48. The spring clips 44 are made of sufficient rigidity to hold the letter securely in place on the letter panel. The interior of the tubes forming the letters contains a gas, such as neon, which conducts current from the electrode in one arm of the letter to the electrode in the other arm of the letter. The current in passing through the gas, energizes it and causes it to glow brilliantly and in colors which vary with the different kinds of gases.

To illuminate every portion of a letter, current must pass throughout the length of the letter in traveling from the electrode in one supporting arm to the electrode in the second supporting arm of the letter. This may make it necessary to form the letter in a special way if the supporting arms on all letters are to be identically spaced. For example, the curved upper end of the letter S, part of which is shown in Fig. 4, extends beyond the point at which the arm for supporting the letter in the socket 32 must be located. It therefore is necessary in forming the letter S to bend the glass tubing at the end of the upper curve back upon itself and extend it backwardly to a point at the top of the curve in the S at which point it is bent outwardly to form a supporting arm for the letter, as shown in Fig. 9. The same procedure is followed in making the lower part of the S. In forming certain of the letters, such, for example, as the letter G, shown in Fig. 1, it may be simpler to run the tube from the end of the letter directly to the point at which the supporting arm must be located. The outer surface of this connecting portion of the tube is then covered with any substance which will black it out and prevent light from showing through it. The connecting tube in the letter G of Fig. 1 is shown extending vertically from the inner end of the horizontal portion of the letter to the bore in the lower socket in the panel upon which the letter is mounted. This portion of the neon tube unit is blacked out in the finished unit. In the portion of the letter S shown in Fig. 9, the blacked out part of the letter is indicated by the square cross sectioning.

Letter panels may be made of several widths to accommodate the various widths of letters so that they will support the various letters in the alphabet in proper spaced relation to form an artistic looking sign. When the letter panels are in assembled relation on the sign, the recessed edge 29 of one letter panel fits into the U-shaped channel 30 of the adjacent letter panel, as shown by Fig. 5, so that the faces of the panels present a smooth surface, broken only by the vertical lines where the edges of the panels meet and form a background for the letters carried on the panel.

End panels 24 and 26 are provided for each sign which are similar in construction to the letter panels and comprise a rectangular shaped plate of sheet metal having one of its longer edges recessed from the face of the panel and the opposite edge folded to form a U-shaped channel on the backside of the panel. A pair of single sockets 76 and 78 are secured in each end panel with their centers spaced a distance equal to the distance between the centers of the two outer bores of the double sockets in a letter panel. The single sockets have an elongated tubular shaped body of insulating material and have an annular ridge 80 near the outer end and threads 82 moulded on the exterior surface of the tubular body portion and extending from the annular ridge toward the inner end of the body. The sockets are received in two openings provided in the panel and are held in position by a sleeve 84 which is formed

with a flange 86 and threads which engage with the threads 82 on the body of the socket. When the sleeve is threaded on the socket, the flange 86 bears against the backside of the panel, thereby drawing the elongated body through the opening in the panel until the annular ridge 80 abuts firmly against the face of the panel.

A pronged spring clip 88 is secured in the bottom of each single socket by a bolt 90 which passes through the end of the socket and is held in place by a nut 91 threaded on the outer end of the bolt. The head of each bolt 90 forms an electrical contact in the bottom of the socket and the bolts in the two sockets in each end panel are electrically connected by an insulated conductor 92, the ends of which are secured to the bolts 90 between the nuts 91 and nuts 93 threaded on the end of the bolt.

Spacer panels 31 are provided for separating words in the copy of a sign, and are similar in construction to the end panels 24 and 26. Mounted in the spacer panels are a pair of single sockets 96 and 98 which have contact points in their lower ends electrically connected by means of an insulated conductor. When the copy on a sign does not fill the space between the end panels of a sign, spacer panels may be used to fill the space at each end of the copy and to position the copy in the center of the supporting structure.

The various panels in an assembled sign are electrically interconnected by means of a plurality of jumpers 102, constructed of glass tubing similar to that of which the letters are constructed, and with the ends thereof bent at right angles to form arms 104 and 106. The tube and arms form an insulating body for an electrical conductor 108 made of copper wire or other suitable conducting material which runs through the tube and has its ends secured to caps 110 and 112 which are pressed over the ends of the arms. The length of the tubing between the two arms 104 and 106 is made sufficient to bridge the space between the outer bores in the double sockets of two adjacent letter panels, and the arms 104 and 106 are made sufficiently long to reach to the bottom of the bores when they are inserted therein, the ends being firmly held by the prongs of the spring clips 46 with the caps 110 and 112 on the ends of the arms in contact with the heads of bolts 50 in the bottom of the bores. By means of one jumper 102, a letter panel is electrically connected to the letter panel, spacer panel, or end panel which precedes it, and by means of a second jumper inserted in the outer bore of the other socket of the letter panel, it is connected to the letter panel, spacer panel, or end panel, which follows it, and there is established an unbroken electrcal circuit from one end of the sign to the other through the separate letter units, sockets, and jumpers by which they are connected.

The terminal in one socket of each end plate 24 is connected to one terminal of the output of a step up transformer 114 which raises the voltage in the line sufficiently to energize the gas in the tubes of the letter units. The other socket of each end plate is connected by a jumper to a socket in the adjacent letter panel.

In the sign illustrated, each letter panel 28 carries one letter 56. Not all letters of the alphabet are of the same width; therefore, if the letters are to be properly spaced to make an artistic looking sign when assembled, some of the letter panels must be of less width than others, but only three or four different sizes of panels will be necessary. It is also necessary to have jumpers of three or four different lengths for use in connecting letter panels of different widths.

If it is desired to change the wording on the sign, the letters 56 and jumpers 102 may be removed, and the letter panels 28 and spacer panels 31 may be rearranged so that when letters are inserted in the letter panels, the desired wording will be properly spelled out and properly spaced. The particular construction illustrated makes the removal of letter panels a simple operation. As shown in Figs. 2 and 3, the panels are not as high as the height of the interior of the supporting structure 10, and the upper retaining flange 12 is double the height of the lower retaining flange 14. When it is desired to remove a panel, all that is necessary is to remove the jumpers, raise the panel until its lower edge clears the lower retaining flange 14, whereupon, it may be pulled out. When it is desired to insert a panel, the upper edge is first inserted in the channel 20 and the lower edge is moved inwardly past the retaining flange 14 into position above channel 22, and the panel may then be allowed to drop into position in the channel 22.

In the drawings is shown a sign having one line of copy. It is obvious that a supporting structure may be so constructed that it will support two or more lines of copy, one above the other, and the lines may be connected with each other by jumpers inserted in the sockets of the end panels and running from one line to the next.

In the modification of my invention shown in Fig. 8, a pair of longitudinally extending channeled supporting members 116, similar in construction to the supporting structure 10 but of less height, are mounted parallel with each other on a background 118. Double sockets 120, similar in all respects to the double sockets 32 but having a rectangular shaped head 122 which forms projecting edges on the sockets, are retained in the supporting members 116 with their upper and lower projecting edges slidingly supported in the channels of the supporting members 116 so that the position of the sockets may readily be changed as desired.

Letters 56 are supported by a pair of integrally formed arms projecting from the letters at right angles thereto, the arm on the upper end of the letter fitting into the inner bore of a double socket 120 in the upper supporting member 116 and the arm near the bottom of the letter fitting into the inner bore of a double socket 120 sliding in the lower supporting member. Jumpers 102 of the same construction as those previously described, are used to connect the letters and spacers to form an electrical circuit therethrough and are inserted in the outer bores of the adjacent letter carrying sockets.

A spacing unit for the letters consists of a single socket 124 slidingly supported in the upper channeled supporting member and a similarly constructed single socket slidingly supported in the lower supporting member. The single sockets have rectangular shaped heads with projecting edges which fit in the channels of the supporting member and are connected by a suitable conductor 126. One arm of a jumper 102 may be inserted in the socket and the other arm of the jumper in the outer bore of the adjacent letter carrying socket, thus providing an electrical connection between the spacing units and the letters.

The sign is also supplied with end units similar in construction to the spacing units but having

one of the sockets of the unit connected to the terminal of a step up transformer.

Copy on a sign of this construction may be rapidly changed since it is not necessary to remove the sockets 120 from the supporting members 116. All that is necessary is that the letters making up the new copy be substituted for the letters on the sign and that spacing units be rearranged to provide the proper spacing. The sign also may be readily adopted for letters of different heights by merely detaching one of the supporting members 116 from the background 118 and securing it above or below its former position so that the sockets therein will receive the arms of the letters to be used.

From the foregoing description, numerous novel features and advantages of the invention become apparent. It is simple in construction, and lends itself readily to standardization in size and construction, thereby reducing the cost of manufacturing the sign and the cost of replacement or repair parts.

Neon signs now in use generally consist of one or a small number of separate units, each unit very likely comprising one or more words. Moulding a glass tube into a word or several words, as must be done with the present signs, is an expensive process and greatly increases the cost of neon signs. In a sign made according to the present invention each letter is a unit. It is much less expensive to mold the letters of a word or group of words separately than it is to mold a complete work or group of words out of one piece of glass tubing. Where more than one unit is used in a sign as at present constructed, it is necessary to have a step-up transformer for each unit, thus increasing the cost of the sign. With the applicant's sign, only one transformer is necessary.

The letters of applicant's sign are easily removed or inserted and are electrically connected or disconnected by inserting or removing a jumper, no other electrical connections being altered, therefore, skilled labor is not required, and the cost of maintenance of the sign is reduced. Another advantage is in ease with which the copy on the sign may be changed, thereby extending the use of neon signs to such places as theatres and night clubs, where frequent changes in programs necessitate frequent changes in the signs on the marquees, and where heretofore, because of the difficulty in changing the working of neon signs, such signs have not been used.

While I have shown and described a preferred embodiment of my invention, I do not wish to be limited thereto, since the invention as defined in the appended claims can be embodied in a plurality of forms. It is to be particularly noted that the expression "neon sign" and "neon tubes" is used in the specification and claims generically to cover gas discharge tubes having therein neon, helium, or other gases or mixtures of these and other gases, or vapors and other similar tubes which produce a brilliant glow when electrically energized.

I claim:

1. In a neon sign comprising a supporting structure and a step up transformer for supplying current of high voltage to said sign, the combination of a plurality of letter panels carried by said supporting structure, insulated double chambered sockets mounted in said panels, contacts in said chambers electrically connected with each other, end panels carried by said supporting structure, electrically connected sockets in said end panels, one of said sockets of each end panel being connected to one terminal of said transformer, neon tubes shaped in the form of letters, arms on said tubes for supporting said tubes and providing electrical connection thereto, said arms being spaced to permit insertion in the corresponding chambers of the double sockets of said letter panels in electrical connection with the contacts therein, and a plurality of interchangeably usable jumpers removably received in the unoccupied chambers of corresponding double sockets in adjacent letter panels and adjacent end and letter panels in electrical connection with the contacts therein, said jumpers completing a series electrical connection between the letters on said panels and between the transformer and said letters.

2. In a neon tube sign comprising background members and a plurality of neon tubes removably mounted in front of said background members, a plurality of conductors connecting said tubes in series in an electric circuit, a tubular insulating housing for said conductors, arms formed integrally with the ends of said housing, a cap pressed on the ends of each of said arms, said conductor having its ends connected to said caps, and means carried by said background members for gripping said caps to hold said conductor housing in position and said caps in electrical connection with said neon tubes.

3. In a neon sign comprising a channeled supporting structure and a step up transformer for supplying current of high voltage to said sign, the combination of a plurality of double sockets slidably mounted in the channels of said supporting structure and normally oppositely disposed, a plurality of neon tubes shaped in the form of letters and having integral vertically spaced arms, said arms being removably held in a pair of said sockets for supporting said letters and providing electrical connection thereto, a pair of electrically connected single sockets positioned in said channels for spacing the letters on said sign, a pair of electrically connected single sockets mounted on each end of said supporting structure, one socket in each of said last pairs of sockets being connected to the terminals of said transformer, insulated jumpers removably held in the adjacent double sockets or in adjacent double sockets and single sockets, said jumpers connecting said sockets in series when the letters are in assembled relation.

4. In a neon sign having a source of current of high voltage and a supporting structure comprising a background member traversed by a plurality of parallel channels, the combination of a plurality of supports slidably mounted in the channels of said supporting structure, neon tubes shaped in the form of letters, means on said supports for supporting said neon tubes on said supporting structure in electrical connection with said means, said means being adapted to permit interchangeable use of said letters and said supports, and interchangeably usable jumpers removably supported on the means on adjacent supports for electrically connecting the letters on adjacent supports in series and connecting the first and last of said letters to the source of current, said jumpers also spacing said letters.

5. In a display sign comprising a channeled supporting structure and a step up transformer for supplying current of high voltage to said sign, the combination of a plurality of double sockets slidably mounted in the channels of said supporting structure, each socket having a pair of chambers and contacts in said chamber electrically

connected with each other, neon tubes shaped in the form of letters, a pair of supporting arms formed integrally with said letters, said arms being vertically spaced to permit insertion in the inner chambers of any pair of opposed sockets on said supporting structure, and providing electrical connection between the letters and the contacts in said sockets, and insulated jumpers removably supported in corresponding chambers of adjacent sockets in electrical connection with the contacts therein, said jumpers being interchangeably usable and electrically connecting said sockets and the letters thereon in series, said jumpers also spacing said letters.

6. A display sign comprising a channeled supporting structure, a plurality of letter units comprising double sockets slidably mounted in the channels of said supporting structure, said sockets having a pair of chambers and electrically connected contacts in said chambers, a plurality of neon tubes shaped in the form of letters and having integral supporting arms, said arms being vertically spaced to permit insertion in the inner chambers of any pair of opposed sockets on said supporting structure and providing electrical connection between the letters and the contacts in said sockets, spacer units carried by said supporting structure, end units carried on each end of said supporting structure, said end units being connected to a source of current of high voltage, and a plurality of insulated jumpers removably supported in corresponding chambers of adjacent double sockets or in adjacent letter units, spacer units or end units in electrical connection therewith, said jumpers being interchangeably usable and providing a series connection between the letters in said sign and the source of current, said jumpers also spacing said letters, and said letter and spacing units.

7. In a neon sign comprising a supporting structure having longitudinal channels therein and a step up transformer for supplying current of high voltage to said sign, the combination of a plurality of letter panels removably mounted in the channels of said supporting structure, sockets mounted on said letter panels, said sockets having two chambers, electrical contacts in each of said chambers, said contacts being electrically connected, neon units shaped in the form of letters, a pair of vertically spaced arms extending from said neon units, one of said arms being removably held in the inner chamber in each of said sockets on said panel for supporting said unit, said arms and letter providing an electrical connection between the sockets on a letter panel, end panels mounted at each end of the supporting structure, said end panels being connected to the terminals of said transformer, electrically connected single sockets in said end panels, spacer panels removably mounted in the channels of said supporting structure, a pair of electrically interconnected single sockets mounted in said spacer panels, and interchangeably usable jumpers having terminals adapted to be removably held in the outer chamber of the corresponding sockets of adjacent letter panels, or adjacent letter and end panels or spacer panels, and forming an insulated conductor therebetween when said letter panels, end panels, and spacer panels are in assembled relation on said sign.

8. In a neon tube sign comprising a supporting structure and a step up transformer for supplying high voltage to said sign, the combination of a plurality of panels slidably mounted in said supporting structure, a pair of insulating sockets secured to said panels, a pair of electrically connected spring clip supporting means secured in each of said sockets, neon tube units shaped in the form of letters, said units being removably supported in said sockets by one of the spring clips in each pair of spring clips in electrical connection therewith, and interchangeably usable jumpers removably supported in the second spring clip of the sockets of adjacent letter panels, said jumpers connecting the neon tube units of adjacent panels in series.

9. In a neon sign comprising a supporting structure and a step up transformer for supplying current of high voltage to said sign, the combination of a plurality of panels removably mounted in said supporting structure, a pair of double chambered sockets mounted on said panels, said chambers being electrically interconnected, neon tubes shaped in the form of letters, arms on said tubes for removably supporting said letters in the first chamber in the sockets of a panel, each letter and its associated arms forming an electrical conductor between the sockets on a panel, end panels mounted in said supporting structure, a pair of electrically interconnected single sockets on said end panels, one of said sockets of each end panel being connected with a terminal of said transformer, interchangeably usable jumpers having their opposite ends removably supported in the second chamber in the sockets on adjacent panels, said jumpers forming an electrical conductor between adjacent panels and between the two end panels and the letter panels adjacent thereto.

10. In a neon tube sign having a supporting structure and a step up transformer for supplying a high voltage to said sign, the combination comprising a plurality of letter panels removably mounted in said supporting structure, neon tube units shaped in the form of letters of the alphabet, resilient supports on said panels for detachably supporting said neon tubes on the face of said panels, said neon tubes and supports having means facilitating the interchangeable use of said neon tubes and panels, interchangeably usable jumpers, opposed resilient supports on adjacent panels for detachably supporting opposite ends of said jumpers, said neon tubes and jumpers being in electrical connection with said supports and with each other through said supports, whereby the neon tubes on said panels are connected in series with each other and with the high voltage supplied by said transformer.

11. A neon sign comprising a supporting structure, a source of high voltage current, a plurality of panels carried by said supporting structure, insulated sockets mounted in said panels in identically vertically spaced relation, neon tube units shaped in the form of letters and having identically vertically spaced supporting arms integral therewith, jumpers for electrically interconnecting the sockets on adjacent panels, resilient supporting means in each of said sockets for detachably supporting one arm of a neon tube and one end of a jumper, and a conductor in said supporting means for electrically connecting the arm of a neon tube with the associated end of a jumper, said neon tubes and panels being interchangeably usable, and said jumper also being interchangebly usable to connect the neon tubes on adjacent panels in series with each other and with the source of current.

12. In a neon tube sign comprising a supporting structure and a source of current, a plurality of letter panels carried by said supporting structure, a pair of sockets mounted on each of said letter panels, a pair of electrically interconnected

contacts in each of said sockets, a plurality of neon tubes shaped in the form of letters, said tubes having arms for the detachable support thereof in said sockets in electrical connection with one of the contacts in each socket, said neon tubes being interchangeably usable with said letter panels, spacer panels carried by said supporting structure, end panels carried on each end of said supporting structure, a pair of electrically interconnected single sockets in each of said end and spacer panels, one of the sockets of each end panel being connected to the source of current, said letter panels, spacer panels and end panels in assembled relation forming a flat background for the letters on said sign and properly spacing the letters to form copy on said sign, and a plurality of insulated jumpers supported at opposite ends in the sockets of adjacent letter panels or of adjacent letter and end or spacer panels in electrical connection with the contacts therein, said jumpers having their ends spaced to permit interchangeable use thereof for electrically connecting said letter panels, spacer panels, and end panels in series with each other.

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