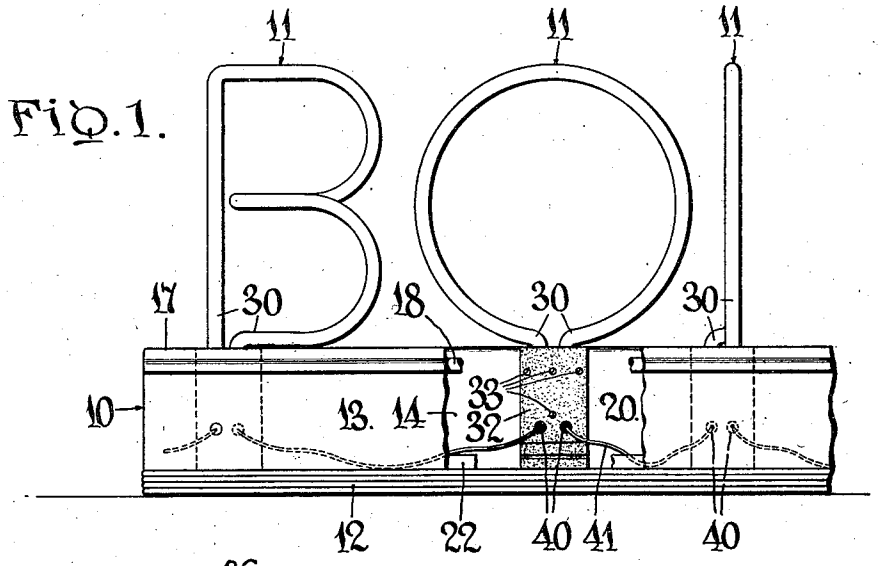
May 26, 1942. L. R. TSCHOPP 2,284,309

ILLUMINATED SIGN

Filed April 8, 1941

Fig. 1.



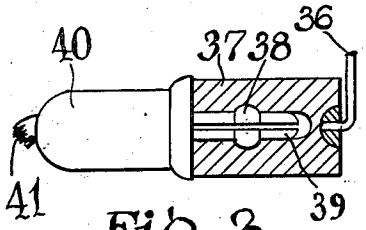


Fig. 3.

Fig. 2.

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ILLUMINATED SIGN

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8 Claims. (Cl. 40—130)

This invention relates to sign structures and particularly to such structures as contemplate an assembly comprising individual shiftable elements in the form of letters of the alphabet or other symbols.

The present invention relates especially to the field of what are generally called luminous tube signs. Various means have been suggested in the prior art which have as their object the provision of sign structures having a number of letters, each provided with means for its illumination. Such devices have thus far been of an impractical nature and have failed of general acceptance because of various inconveniences attendant upon their use.

I have devised a sign construction which possesses attributes which make the production and use of a sign of this general nature a practical and feasible commercial piece of apparatus. The new sign of my invention is durable and structurally strong and simple and safe in construction and operation. It is adapted for mounting and use either interiorly or exteriorly without danger to or uncertainty of proper electrical communication. The individual letters of the sign are readily insertable and removable as well as being readily shiftable to any position in the holder portion of the sign. The shifting of the individual symbol elements is not limited to predetermined positions but permits disposition in absolutely any desired position without interference with proper electrical connection and rigid support of the element. Further, the new sign of my invention is sufficiently simple and easy of manufacture to permit production of the several elements comprising a complete sign apparatus possible at a cost which will be well within practical limits.

A specific example of a sign embodying the principles of my invention and which achieves the foregoing objects is illustrated in the accompanying drawing in which:

Fig. 1 is a fragmentary elevational view of a holder or support having several sign symbols assembled therewith, with portions of the holder broken away for clearness of illustration;

Fig. 2 is a transverse cross-sectional view, on an enlarged scale, through the holder and the lower portion of a symbol element; and

Fig. 3 is a fragmentary cross-sectional view of the connecting jack details viewed as in Fig. 2 but on an enlarged scale.

Throughout the several figures of the drawing like characters of reference denote like parts and the numeral 10 designates generally a holder or symbol supporting structure while the numeral 11 designates generally any of a variety of sign symbols. The holder 10, in the illustrated form, comprises a base portion 12 and an upwardly extending wall 13 which may be formed integrally therewith but which in the form illustrated in Fig. 2 comprises a relatively thin panel extending obliquely upwardly to provide a compartment 14, the purpose of which will presently appear. The panel 13 is preferably provided with end walls 15 which extend downwardly to the base 12 to complete the chamber 14.

The upper portion of the wall 13 extends vertically to provide an abutment 16. If desired, the upper portion of the wall 14 may further be provided with a cowl or shade portion 17 which may house a lamp 18, preferably in the form of an elongate luminous tube. By reason of this illumination of the outer surface of the wall 13 such wall may be conveniently employed to receive indicia. This indicia is, however, merely secondary to the principal sign which forms the subject matter of the present invention.

A sign element container, generally indicated at 19, is disposed, when the parts are in assembled position, upon the base 12 adjacent the wall 13 as appears from Fig. 2. This container includes an outside upstanding wall 20, a bottom wall 21 and a relatively short upstanding inner wall 22 which preferably terminates in an enlarged longitudinal lip portion 23 which may be formed by curling the edge of the material forming the receptacle, or otherwise. It will be noted that the inner upstanding wall 22 is in substantially the same vertical plane as the abutment wall portion 16.

The container 19 is adapted to be hingedly secured to the base 12 substantially at the lower edge of the outer wall 20. A pair of hinge plates for this purpose are designated 24 and 25 and are pivotally attached by a hinge pin 26. It will be noted that the hinge portions 24 and 25 are shaped to form a central opening 27 which permits passage therethrough of a coil spring 28. The coil spring 28 is secured at its opposite ends to extensions of the hinge elements 24 and 25 and it will be noted from Fig. 2 that the disposition of the spring 28 is such that it has an over-center action.

When the parts are in the position shown in full lines in Fig. 2 the spring 28 will urge the container 19 in a counter-clockwise direction about the hinge pin 26. When the container 19 is moved to the open position, indicated fragmentarily in dot and dash lines in Fig. 2, the

spring 28 passes through a dead center position with respect to the hinge pins 26 and thereafter further opening movement is under the urge of the spring 28, or at least not against its resistance. This arrangement is availed of so that the container 19 may lie freely in the position indicated by the dot and dash lines, while assembly and arrangement of the sign characters is being effected.

The individual symbol elements, which obviously may define the letters of the alphabet, numerals, or other indicia, each have an indicating portion and a mounting or securing portion. As shown in the drawing each symbol element comprises a transparent tubular indicia portion 30 and a mounting portion which may conveniently comprise a pair of blocks of insulating material designated 31 and 32 and normally held together by screws 33. Each of the blocks of insulating material has, in the face abutting the other block, a pair of half round grooves 34 for receiving and holding the opposite terminal portions of the tubular indicia portion 30. The ends of the indicia portions 30 are sealed and provided with electrical conductors 36 which lead from conventional electrodes within the indicia portions 30 and which may be conveniently connected to an external current source. The tubular indicia portions 30 are intended to contain a gas, such as neon, argon, or such other gases as are conventionally used in luminous discharge tube lighting.

The conductors 36 extend from conventional electrodes within the ends of the tubular indicia portions 30 and may be electrically secured to conductor thimbles 37 of electrically conductive material rigidly disposed in suitable openings provided in one of the insulating blocks 32 comprising the mounting portion for the tubular indicia portion 30. Securement of the conductor 36 may be effected by disposing its exposed end in an opening in the thimble 37 and soldering the joint so formed, see Fig. 3. The thimble elements 37 are preferably provided with openings having re-entrant portions for engaging detents 38 formed on resilient jacks 39 of conducting material. Obviously the jacks may be inserted in and removed from such openings against the resistance of the detents 38 of the resilient jacks 39. The jacks 39 are secured to and arranged to extend from body elements 40 of insulating material, wherein the jacks 39 are connected permanently to the conducting wire of insulated conductors 41 in any convenient manner. The plugs 40 with associated jacks 39 may be interchangeably inserted in any of the thimbles 37.

For connecting a group of symbol elements electrically in series a plurality of conductors 41 is provided, each having at its opposite ends an insulating body portion 40 and a connecting jack 39.

It will be noted that the insulating blocks 31 of the mounting portions are provided with longitudinally extending grooves for receiving the marginal beads 23 of the container 19. By virtue of this construction the individually assembled mounting blocks may be resiliently inserted in and removed from the container 19 when the latter is in the open position indicated in dot and dash lines in Fig. 2.

With the container 19 in this position sign elements or symbols 11 may be conveniently shifted about in the elongate container 19 to form any desired sequence of symbols, spaced as desired, and the several sign elements may be connected electrically in series, as indicated in Fig. 1, by employing any desired number of conductors 41. It is contemplated that a sufficient number and variety of lengths of conductors will be included in a complement of apparatus for practicing my invention; such complement of apparatus comprising the support means, a variety of sign characters, and the conductors. End conductor members may lead either to the terminals of a transformer or to another sign character holder for connection in series therewith.

While a single detailed embodiment of the principles of my invention is shown in the drawing and described in the foregoing specification it is to be understood that I do not consider my invention as limited thereto or otherwise, except as defined by the appended claims.

What is claimed is:

1. In an electrically illuminated sign, a holder comprising an elongate base portion and an upwardly extending wall rigidly disposed adjacent a longitudinal edge thereof, said wall having a longitudinal overhanging portion disposed above and spaced from said base portion to provide an abutment and a compartment beneath said overhanging portion, a panel hinged to the opposite longitudinal edge of said base portion and arranged to extend normally upwardly and spaced laterally from said abutment whereby to provide a longitudinally extending opening therebetween, said panel being movable pivotally away from said abutment to give access to said compartment, sign elements comprising supporting blocks and tubular, transparent symbol portions extending therefrom, said tubes containing a gaseous medium rendered luminous by the passage of high potential alternating current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, flexible conductors in said compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series, and resilient means normally urging said panel toward said abutment whereby to grip and clamp the upper portions of the supporting blocks of a longitudinal row of sign elements.

2. In an electrically illuminated sign, a holder comprising an elongate base portion and an upwardly extending wall rigidly disposed adjacent a longitudinal edge thereof, said wall having a longitudinal overhanging portion disposed above and spaced from said base portion to provide an upper abutment and a compartment beneath said overhanging portion, a panel hinged to the opposite longitudinal edge of said base portion and arranged to extend normally upwardly and spaced laterally from said abutment whereby to provide a longitudinally extending opening therebetween, said panel being pivotally movable away from said abutment to give access to said compartment, sign elements comprising supporting blocks and transparent tubes extending therefrom to form symbols, said tubes containing a gaseous medium rendered luminous by the passage of high potential alternating current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, and flexible conductors in said

compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series.

3. In an electrically illuminated sign, a holder comprising an elongate base portion and a pair of spaced upwardly extending walls disposed adjacent the longitudinal edges thereof, one of said walls having a longitudinally extending overhanging portion disposed above and spaced from said base portion to provide an upper abutment and a compartment beneath said overhanging portion, said abutment being laterally spaced from the other of said walls to provide a longitudinally extending opening therebetween, one of said pair of walls being pivotally secured to said base portion about a longitudinal axis whereby to be moved away from the other wall to give access to said compartment, sign elements comprising supporting blocks and transparent tubes extending therefrom to form symbols, said tubes containing a gaseous medium rendered luminous by the passage of high potential electric current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, and flexible conductors in said compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series.

4. In an electrically illuminated sign, a holder comprising an elongate base portion and an upwardly extending wall rigidly disposed adjacent a longitudinal edge thereof, said wall having a longitudinal overhanging portion disposed above and spaced from said base portion to provide an abutment and a compartment beneath said overhanging portion, a panel hinged to the opposite longitudinal edge of said base portion and arranged to extend normally upwardly and spaced laterally from said abutment whereby to provide a longitudinally extending opening therebetween, said panel being movable pivotally away from said abutment to give access to said compartment, sign elements comprising supporting blocks and tubular, transparent symbol portions extending therefrom, said tubes containing a gaseous medium rendered luminous by the passage of high potential alternating current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, flexible conductors in said compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series, and overhanging resilient means adapted to urge said panel pivotally toward said abutment when the panel is in a substantially vertical position and to retain said panel away from said abutment when the panel is in a substantially horizontal open position.

5. In an electrically illuminated sign, a holder comprising an elongate base portion and a pair of spaced upwardly extending walls disposed adjacent the longitudinal edges thereof, one of said walls having a longitudinally extending overhanging portion disposed above and spaced from said base portion to provide an upper abutment and a compartment beneath said overhanging portion, said abutment being laterally spaced from the other of said walls to provide a longitudinally extending opening therebetween, one of said pair of walls being pivotally secured to said base portion about a longitudinal axis whereby to be moved away from the other wall to give access to said compartment, sign elements comprising supporting blocks and transparent tubes extending therefrom to form symbols, said tubes containing a gaseous medium rendered luminous by the passage of high potential electric current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, flexible conductors in said compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series, and overcenter resilient means engaging said pivoted wall and adapted to urge the same yieldably toward said abutment when the pivoted wall is in substantially vertical position, said resilient means being rendered inoperative upon pivotal movement of said wall a predetermined distance away from its normal substantially vertical position.

6. In an electrically illuminated sign, an elongate holder for a row of interchangeable sign elements each having a symbol portion and a base portion, said holder comprising a flat, elongate base portion and an upwardly extending wall rigidly disposed adjacent a longitudinal edge thereof, said wall having a longitudinal overhanging portion disposed above and spaced from said base portion to provide an upper abutment and a compartment beneath said overhanging portion for the reception of electrical conduit means, a panel hinged to the opposite longitudinal edge of said base portion and arranged to extend normally upwardly and spaced laterally from said abutment whereby to provide a longitudinally extending opening therebetween, said panel being pivotally movable away from said abutment to increase the size of said opening and give access to said housing, resilient means normally urging said panel toward said abutment whereby the upper portions of the base portions of a plurality of sign elements may be engaged therebetween, and a receptacle fixed to said hinged panel and disposed beneath said longitudinal opening, said receptacle comprising a horizontally extending base flange normally disposed directly beneath said longitudinal opening, said base flange terminating in an upstanding flange for cooperation with the hinged panel proper to receive the lower ends of said sign elements to locate the same in accurate longitudinal alignment.

7. In an electrically illuminated sign, a holder comprising an elongate base portion and a pair of spaced upwardly extending walls disposed adjacent the longitudinal edges thereof, one of said walls having a longitudinally extending overhanging portion disposed above and spaced from said base portion to provide an upper abutment and a compartment beneath said overhanging portion, said abutment being laterally spaced from the other of said walls to provide a longitudinally extending opening therebetween, a longitudinal vertically extending flange adjacent said base portion, rigidly associated with said other wall and disposed beneath said abutment, said flange cooperating with said other wall to receive and preliminarily position interchangeable sign elements, one of said pair of walls being pivotally secured to said base portion about a longitudinal axis whereby to be moved away from the other wall to give access to said compartment, sign elements comprising supporting blocks and transparent tubes extending there-

from to form symbols, said tubes containing a gaseous medium rendered luminous by the passage of high potential electric current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, and flexible conductors in said compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series.

8. In an electrically illuminated sign, a holder comprising an elongate base portion and a pair of spaced upwardly extending walls disposed adjacent the longitudinal edges thereof, one of said walls having a longitudinally extending overhanging portion disposed above and spaced from said base portion to provide an upper abutment and a compartment beneath said overhanging portion, said abutment being laterally spaced from the other of said walls to provide a longitudinally extending opening therebetween, a longitudinal vertically extending flange adjacent said base portion, rigidly associated with said other wall and disposed beneath said abutment, said flange cooperating with said other wall to receive and preliminarily position interchangeable sign elements, one of said pair of walls being pivotally secured to said base portion about a longitudinal axis whereby to be moved away from the other wall to give access to said compartment, sign elements comprising supporting blocks and transparent tubes extending therefrom to form symbols, said tubes containing a gaseous medium rendered luminous by the passage of high potential electric current, energizing electrodes in said tubes and conductors leading therefrom through said blocks to a pair of contact elements on said block and accessible from the exterior thereof at the compartment side of said holder, flexible conductors in said compartment for interchangeable connection with said contacts to connect a plurality of sign elements electrically in series, and overcenter resilient means engaging said pivoted wall and adapted to urge the same yieldably toward said abutment when the pivoted wall is in substantially vertical position, said resilient means being rendered inoperative upon pivotal movement of said wall a predetermined distance away from its normal substantially vertical position.

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