June 14, 1938. R. L. PERRY 2,120,259

ELECTRIC SIGN

Filed Jan. 16, 1937 2 Sheets-Sheet 1

Fig. 1

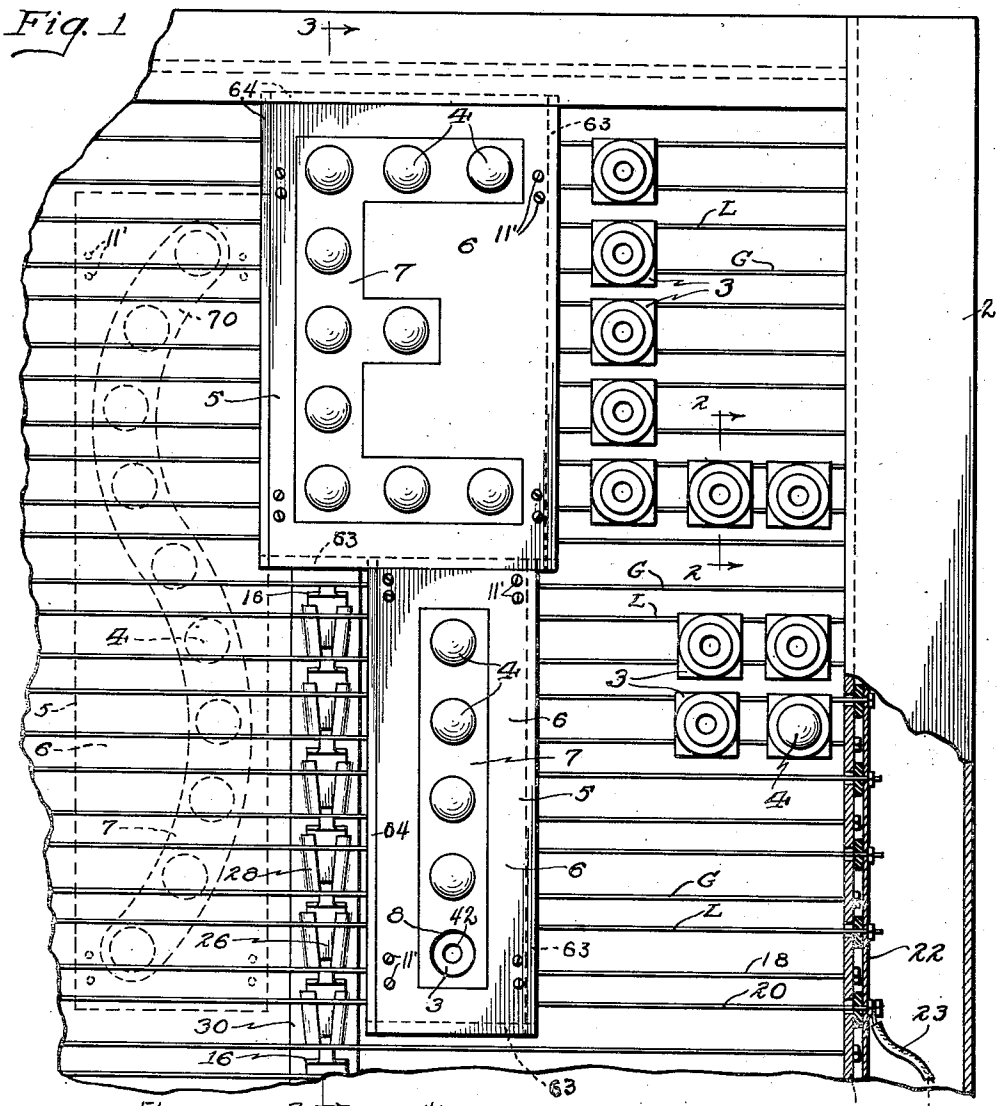
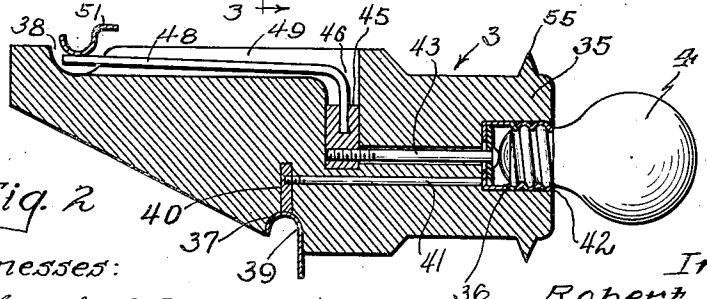


Fig. 2



Witnesses:
Adolph T. Berg
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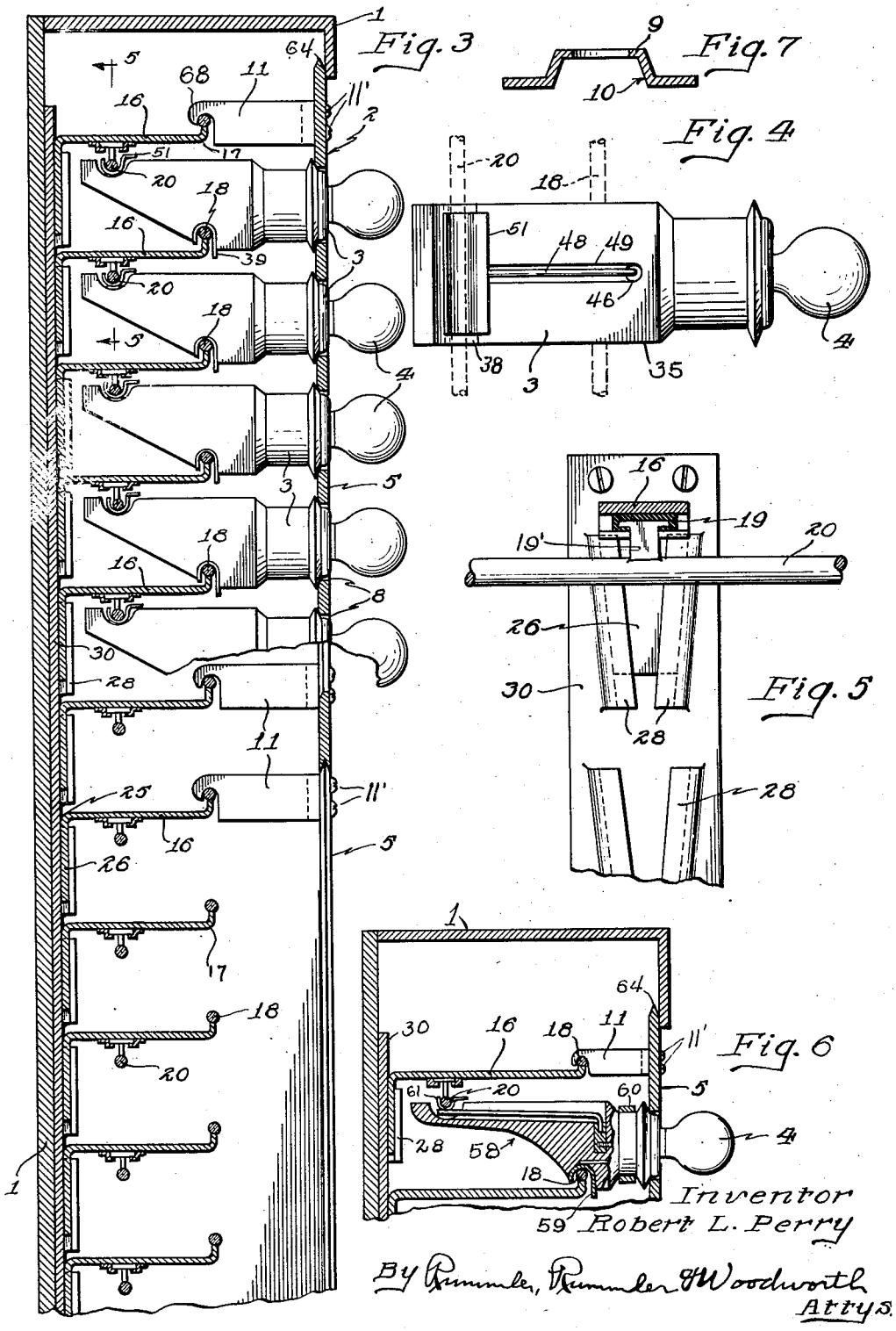
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2,120,259

ELECTRIC SIGN

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Application January 16, 1937, Serial No. 120,864

10 Claims. (Cl. 40—130)

This invention relates to illuminated signs of the changeable variety, such as for theater front advertising and the like, and mainly to signs of the filament lamp type as distinct from those of the luminous gas or "neon" type; but it is to be understood that for some purposes gas tube units of appropriate design may be used.

Heretofore changeable signs of the general kind here referred to have been confined to certain structural limitations from which I seek to escape.

For instance, where illuminated letter units are used interchangeably as in many signs, the lettering stock is bulky and the units are sometimes too heavy for ready manual handling; and great care must be taken in their use.

Another instance over which I attain advantage is the kind of sign in which face plates of letter form or other design are arranged consistently over corresponding groups of lamps set in permanently mounted sockets selected according to location corresponding with currently desired lettering designs. In such an instance a large part of the sockets must always be idle; and besides, each lamp or many of them must be removed and then screwed manually into its proper socket whenever the lettering is changed.

Furthermore, under present systems there is always a considerable loss in lamp breakage incident to screwing, unscrewing and handling the great quantities of lamps required in organizing and changing sign texts and designs. Wherever preformed lamp-containing letters are used there is necessarily always a considerable investment in idle stock, especially lamps.

Most present-day signs contain a considerable amount of wiring, and due insulation is an important factor in design.

Some of the main objects of my present invention are to provide for simplifying sign structures of the kind referred to and to lessen the labor and expense of general maintenance and current changes, and especially to facilitate selective composition, both as to text and as to style and size of lettering or other subject matter.

Other objects are to so organize the sign as to minimize the handling of sign parts; to eliminate substantially the changing of lamps relative to their sockets except for renewals; to alter signs mainly by mere substitution of appropriate face plates over prearranged lamps slidably mounted on the housing frame; and to provide both for simplifying the necessary electrical connections and making safe against shocks and short circuits.

Further objects are to so position the "live" conductors remotely from the front as to guard against accidental contacts, human or otherwise; to so design the socket elements and their supports as to facilitate ready insertion and removal of sockets by self guidance and the sense of touch mainly; and to provide for sliding entire letters or other set-ups horizontally for refinements in adjustment or in recomposing a sign layout.

Another object is to so harmonize the frame, the lamp-and-socket units and the face plates as to enable ready application and removal of these plates by a simple manual lift and swing movement, accommodated by socket tilting, as will be more fully explained.

A special object is to eliminate fire hazards by using only heat-proof and incombustible materials in the sign structure.

This invention is illustrated by the accompanying drawings, in which:

Fig. 1 is mainly a fragmentary front elevation of an electric sign with selected compositional elements applied and with parts broken away to show structural details otherwise hidden.

Fig. 2 shows a shiftable lamp and socket unit mainly in vertical section through its main axis on line 2—2 of Fig. 1 and in enlarged relation to Fig. 1.

Fig. 3, on a medium scale, shows mainly a vertical section about as on the line 3—3 of Fig. 1, with the lamp and socket units in side elevation.

Fig. 4 is a plan of the lamp and socket unit of Fig. 2, on a smaller scale, and with its supports shown in dotted outline.

Fig. 5 is mainly an enlarged front elevation of the upper part of one of the casing wall brackets for the conductor bars, part being in section on the line 5—5 of Fig. 3.

Fig. 6 is a section, taken substantially as Fig. 3, to show a modified form of design wherein the front support for the lighting units is nearer the front than in Fig. 3.

Fig. 7 is a cross section of an embossed style of face plate, as for instance through the letter I.

Referring more in detail to the drawings, the sign as a whole comprises a housing 1 of flattish box-like character with an illuminated display front 2, as shown by Fig. 3 bearing the desired features or designs such as illustrated on Fig. 1.

Here the display letters E and I are shown as they might appear on a finished sign. The letter L is here represented merely by a set of five slide sockets 3. Four more sockets are shown below the "L", one of which is shown as provided with a lamp 4 such as project in front of the face plates 5.

These unit plates 5 vary in size and shape ac-

cording to the sign text and display desired. Each plate has a plain dark face part 6 and a light-reflecting display part 7, the latter being perforated as at 8 to receive the forward ends of the sockets 3 and to accommodate passage of the lamps 4 therethrough in mounting the plate. These units may be flat like plate 5 or they may be embossed as in Fig. 7, so as to raise the display part 9 of the modified plate 10. Each face plate has a set of rearward supporting arms 11 preferably one at or near each corner, to serve as shown by Fig. 3. Each arm is attached to its plate by a pair of screws 11'.

The housing box 1, at or adjacent to each end, is provided with a vertical series of brackets 15 having arms 16 extending horizontally forward from the back, to serve as supports, as will appear.

Another set of such brackets may be inserted between the end sets if the sign is large enough to require intermediate supports. Each arm 16 is bent at 17 and points upwardly at its tip to which is secured a bar 18 adapted to serve both as a support for the sockets 3 and face plates 5 and as a ground bar for the electrical feeder circuit for the lamps 4. The bars 18 are comparatively near the front of the housing 1.

Secured by an insulator 19 and a lug 19' (see Fig. 5) to the underside of each arm 16 near its back end is a live feeder bar 20. These bars 20 are connected in common by a bar 22 and thence by a wire 23 to a source of current as indicated by the generator at 24 on Fig. 1.

Each arm 16 at its near end is secured to the back of the housing 1, and for this purpose it is bent downwardly at 25 and its tapered down-part 26 is set in the V-socket formed by the complementary wedging arms 28 struck up on the vertical back-bar 30.

Referring now to Figs. 2 and 3, each socket 3 is a portable unit, adapted for endwise insertion in the housing 1 between adjacent pairs of bars 18 and 20. Each socket comprises an oblong body or frame 35, square as viewed endwise in Fig. 1, and having an aperture 36 in its front end to receive a lamp 4. A downwardly facing groove 37 extends across its underside near the middle to receive a ground bar 18. Another groove 38 facing upwardly, extends across the rear end to receive the live bar 20. Groove 37 is lined with a sheet metal contact 39 connected by conductors 40 and 41 to the threaded socket lining 42 in socket 36.

A conductor screw 43 having a head 44 to contact with the lamp 4 lies axially in body 35, being insulated where it passes through the bottom of socket lining 42. The back end of screw 43 is set in a conductor head 45 fixed in aperture 46. Also fixed in head 45 is one end of a spring conductor 48 lying in groove 49 which intersects groove 38. Across the face end of spring 48 is an arcuate plate 51, corresponding with groove 38, to engage a live conductor 20. The spring 48 is tensionally adjusted to respond resiliently when the socket 3 is set in place on bar 18 with the rear end under bar 20 where spring 48 bears upwardly, as in Fig. 1. This serves to dampen vibrations such as might otherwise jar the contacts open at 39 and 51 and cause flickering of the sign.

An outstanding collar 55 near the front end of body 35 fits against the back side of a plate 5 next to a hole 8 when the sign is assembled, with the boss 56 fitting freely in the hole 8.

In the variant design shown by Fig. 6 the socket 58 has its lower bearing contact 59 much nearer the front end than appears on the socket 3 of Figs. 2 and 3, the purpose here being to shorten the plate lugs 11 and hence to bring the ground conductor bearing bars 18 farther front. Socket 58 may have a weight ring 60 on its front end to assure a positive upward bearing of the rear contact 61 on bar 20.

In order that the front of the sign may present a neat and unitary appearance, the face plates 5 are designed to overlap or interfit, and for this purpose they are formed each with a groove 63 on two adjacent edges and with a blade or tongue 64 on the other two edges.

Assemblage

In order to erect a sign of chosen form the housing 1 fitted with bars is set in place. Then the attendant inserts or "plugs" into position the sockets 3, between appropriate bars 18 and 20. These sockets are arranged by sidewise sliding so as to conform with the general shape of the face plate letters or other designs. The plates 5 are then set in place over the sockets. The lamps 4 may be applied at any time as may be preferred, as for instance, before the sockets 3 are "plugged in", or when the sockets are in place either before or after applying the plates 5.

In applying these plates it is preferable to begin at the bottom and work upward toward the top. When the sockets and lamps are properly arranged the lamps pass through the holes 8, and the cantilever tiltable mounting of the sockets permits sufficient lifting and subsequent lowering of the plate to accommodate the hooking of plate arms 11 at their tips 68 on the bars 18, and the nesting of the horizontal tongues 64 in the grooves 63. By horizontal adjustment of the plates the vertical tongues and grooves are caused to nest. It is to be noted that an entire assemblage of a plate and corresponding lamp and socket units may be slid horizontally for adjustment.

In Fig. 1 there is shown in dotted outline a fanciful curvilinear design 70 to illustrate gradient right and left setting of the lamps according to any need. This design 70 also shows the use of a much taller face plate than the others here shown. In fact such plates may be designed of any shape and size to meet current needs.

Whenever the composition of the sign is to be changed the old face-plates 5 are unhooked and removed. Then the socket-lamp units are slid to their appropriate new positions with additions or subtractions if need be, whereupon fit plates for the new design are then applied. Such plates may represent various kinds and sizes of symbols and may include pictorial, decorative and fanciful designs at will. Extra socket-lamp units may be kept in reserve stock, as also separate lamps and sockets, to meet current needs both for changes and for replacements, as of burnt-out lamps.

My present system enables the attendant readily to make all necessary changes and adjustments with a minimum of labor and hazard. Extra light units may be carried in a basket, which is easier and simpler than handling bulky made-up letter and design units. Face plates may also be handled more readily and they take less space for storage, much as matrices are more convenient than actual type in the printing art.

It is to be understood that some of the details set forth may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A changeable sign of the class described comprising a frame having mounted therein a series of horizontally disposed conductors arranged in pairs, one rearwardly of and above the other, alternate conductors being mutually connected for attachment to one side of an electric power source and the other conductors being mutually connected for attachment to the opposite side of such source, in combination with a plurality of interchangeable lamp sockets slidable sidewise on any of said pairs of conductors, each socket being formed and adapted for cantilever mounting and support on said conductors with downward bearing on the forward conductor and upward bearing on the rearward conductor and having electrical connections leading from the conductor bearing points thereof to the lamp-receiving contact parts of the socket, and face plates formed and arranged in accordance with a desired display design, said sockets and lamps being slidably adjustable to conform with and to illuminate said plates.

2. An electric sign structure comprising a plurality of lamp sockets and lamps therefor in combination with a face plate of predetermined sign character having perforations to admit said lamps from the rear so as to illuminate its front side; said plate having supporting lugs on its back side adapted to accommodate setting of the plate by a lifting and rearward swinging movement and said sockets being mounted for vertical tilting to accommodate such plate movement in mounting and dismounting the plate.

3. An electric sign structure comprising a supporting frame, a detachable face plate therefor of character and design adapted for display purpose, a pair of fixed conductors of opposite polarity disposed horizontally in parallel relation back of said plate, one forwardly of the other, a socket mounted tiltably on the forward conductor with its rear end bearing upwardly against the rearward conductor, the forward bearing being back of the center of gravity of the socket, a lamp in said socket, the latter having conductors leading from the lamp to the bearing points of the socket on said fixed conductors, said face plate being apertured to accommodate projection of said lamp therethrough, said plate being swingably mounted adjacent its upper edge and being liftable for attachment and disengagement, and said lamp and socket being vertically movable tiltably to accommodate plate lifting and swinging.

4. A sign of the class described comprising a pair of horizontal conductors disposed in spaced vertical planes one back of the other in combination with a tiltable lamp socket mounted thereon and carried thereby in a horizontally slidable relation; said socket having a substantially rigid electrical contact for one of said conductors and a yielding resilient contact for the other of said conductors and part of said socket forwardly overhanging the front conductor.

5. In a sign of the class described, a housing frame having horizontal bars adjacent to its front, face plates of appropriate sign purpose design hung slidably on said bars, the upper face part of said frame being formed to overlap the upper edge of the top plates, said plates being formed for tongue and groove edgewise interfitting and said plates being liftable and forwardly swingable adjacent their upper edges for mounting and dismounting.

6. A lamp-holding accessory for illuminated signs comprising an oblong frame having a lamp socket part at one end, a live contact part at its opposite end, a medially positioned ground contact part and connections leading from said contact parts to appropriate points in said socket part.

7. In a sign of the class described, a housing frame having a set of horizontal bars spaced one above another in front, and another set in the rear, lamp sockets slidably carried by said bars, and removable face display plates associated with said lamps and mounted slidably on the front bars, each of said plates and the corresponding sockets being movable conjunctively.

8. An electric sign accessory device of individual unit character adapted for tiltable mounting and comprising a housing body having a lamp receiving face part, a contact carrying rearward part and electrical connections leading from the contact carrying parts to said face part, said body being formed and having said contacts positioned rearwardly above and one medially below to accommodate sidewise sliding adjustment of said device according to desire in sign composition.

9. A safety electric sign comprising a housing frame in combination with a plurality of lamp carrying units wired for energizing the lamps each of said units having a forward bottom contact and a top rearward contact, said frame having guideways to detachably receive and support said units for horizontal sliding adjustment according to current desire in sign design, said guideways being arranged in a vertical series of pairs one forwardly of the other to receive the said unit contacts, the forward guideway of each pair being grounded and its rearward companion being mounted to serve as a live conductor.

10. A plug-like socket for sign lamps comprising an oblong body adapted for cantilever mounting, said body having a transverse medial bearing groove on its underside and a rear bearing on its upper side, the rear lower part being beveled to provide a slanting guide surface leading from the rear end to said groove.

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