Aug. 20, 1929. H. J. BAREHAM 1,725,244

TRAFFIC SIGNAL

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Fig. 1

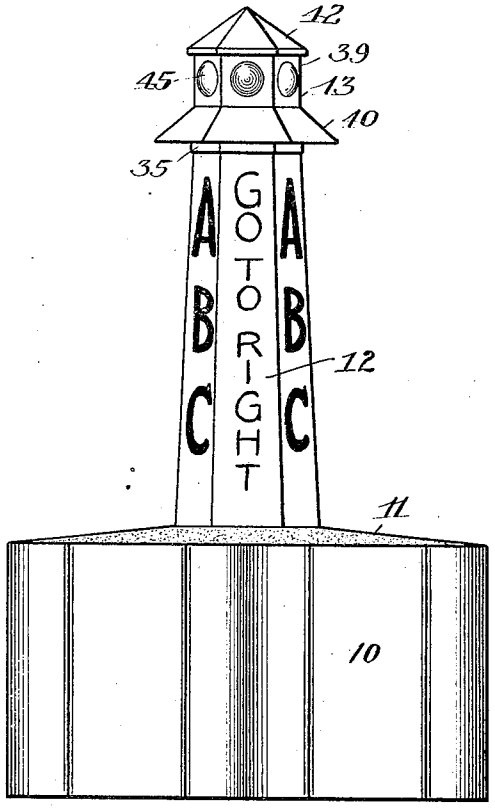


Fig. 2

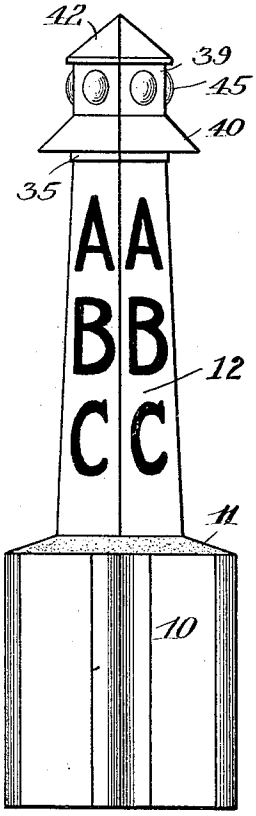
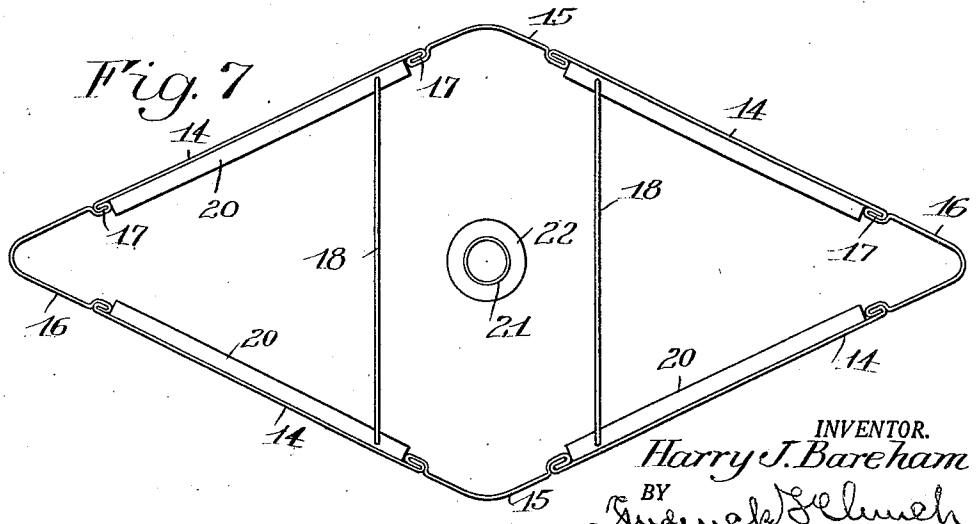


Fig. 7



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TRAFFIC SIGNAL

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Fig. 3

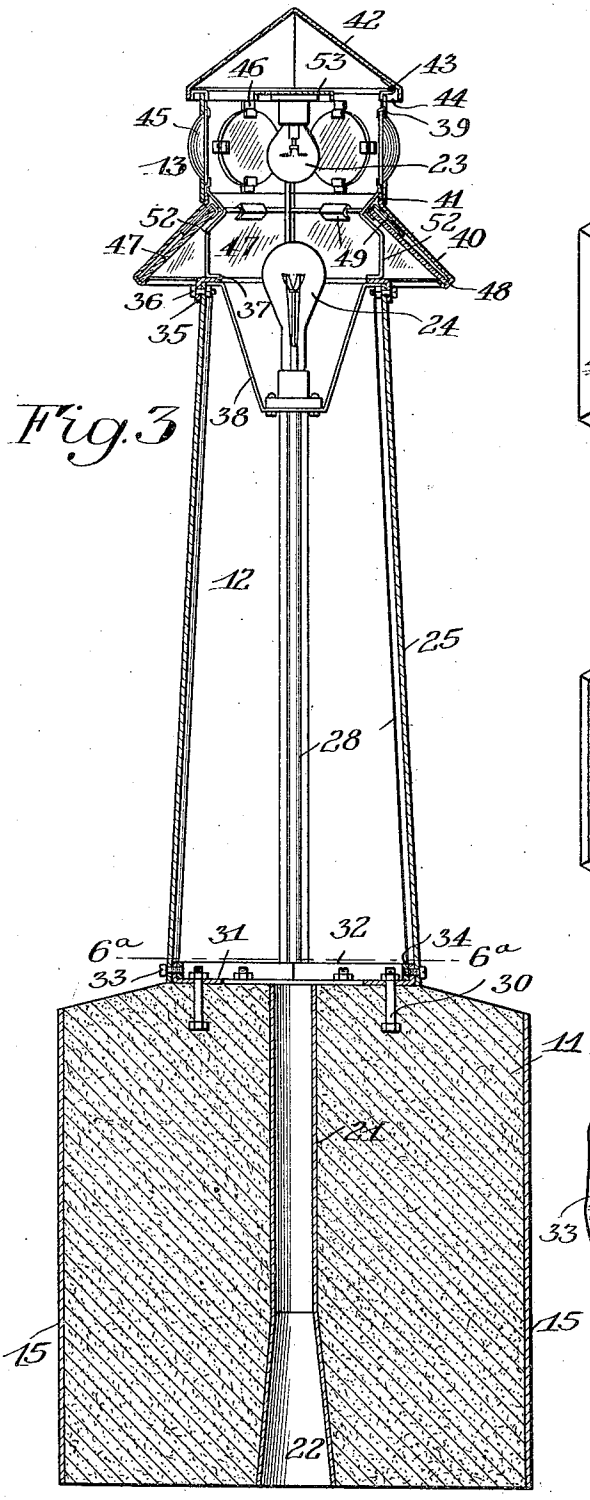


Fig. 4

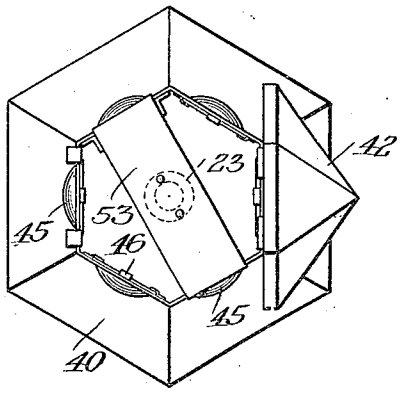


Fig. 5

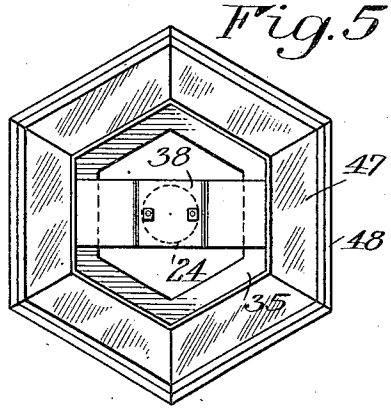
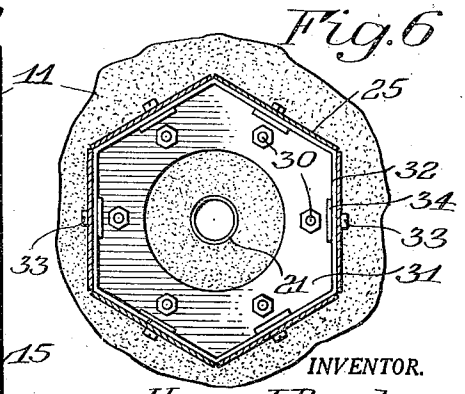


Fig. 6



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TRAFFIC SIGNAL

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Fig. 8

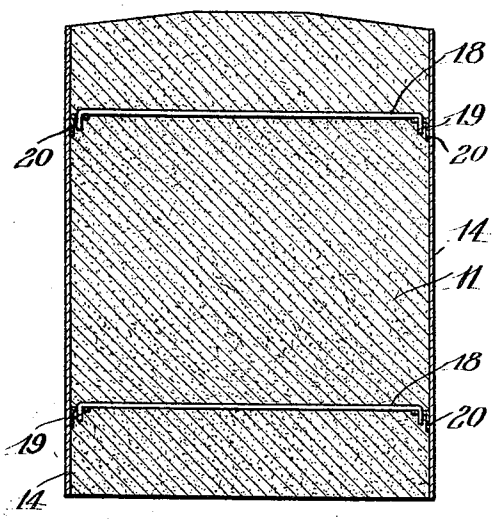
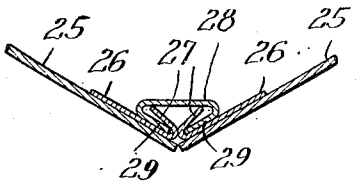


Fig. 9



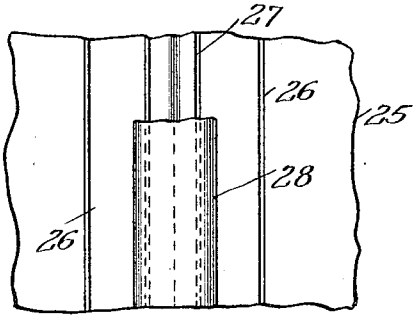
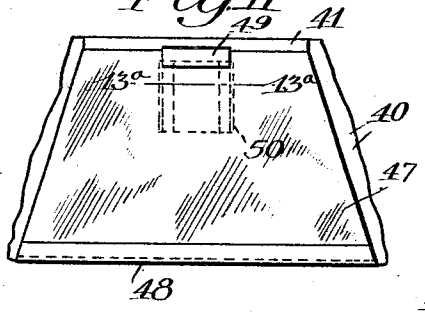


Fig. 10

Fig. 11



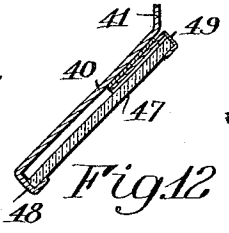


Fig. 12

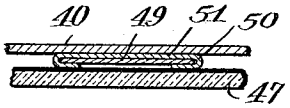
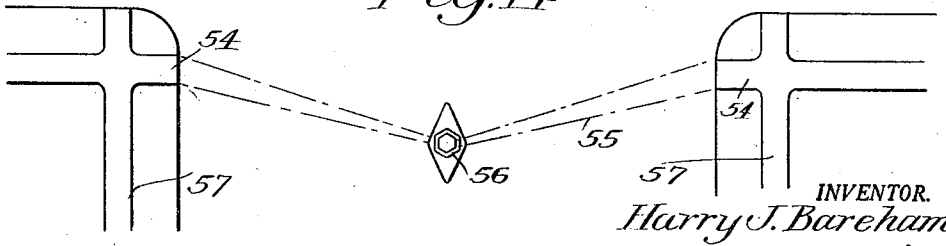


Fig. 13

Fig. 14



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UNITED STATES PATENT OFFICE.

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TRAFFIC SIGNAL.

Application filed October 28, 1924. Serial No. 746,399.

My present invention relates to devices for warning and controlling vehicular traffic on streets and highways and it has for its object to provide a simple, inexpensive and practical sign or signal of this character that can be conveniently shipped and easily installed and which will be particularly, though not exclusively adapted for use at street or road intersections to direct traffic and pedestrians by day and by night for the mutual benefit and safety of all concerned. My improvements are further directed in part toward rendering the signal sufficiently imposing to claim the respect of persons otherwise careless of collisions but without impairing its simplicity of construction or the facility with which it may be cleaned, repaired or inspected. To these and other ends the invention resides in certain improvements and combinations of parts all as will be hereinafter described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side elevation of a traffic signal embodying one form of the invention;

Figure 2 is an end elevation of the same;

Figure 3 is a transverse sectional elevation through the signal drawn to an enlarged scale;

Figure 4 is a top plan view of the lamp housing with the hinged cover shown in open position;

Figure 5 is a bottom plan view of the housing shown removed from the lamp post;

Figure 6 is a fragmentary sectional plan taken on line 6^a—6^a of Figure 3;

Figure 7 is an enlarged plan of a casing for the cement base shown in Figure 1;

Figure 8 is a transverse sectional elevation through the base showing the manner of connecting the sides thereof;

Figure 9 is a fragmentary sectional plan on an enlarged scale showing the manner of connecting the side plates forming the lamp post;

Figure 10 is an interior fragmentary view showing in elevation the parts of the lamp post indicated in Figure 9;

Figure 11 is a view in elevation looking at the inner face of one of the reflectors shown in Figure 5;

Figure 12 is a sectional elevation through the center of the same;

Figure 13 is an enlarged sectional plan taken on line 13^a—13^a of Figure 11 disclosing the construction of the retaining means for the mirror shown in Figures 11 and 12 and

Figure 14 is a diagrammatic plan illustrating the position of the signal in the middle of a street or highway with rays of light directed upon the cross walks of an intersecting street.

Similar reference numerals throughout the several views indicate the same parts.

In a general way, a preferred embodiment of my invention includes a tower like structure adapted to be erected at a street intersection or in the center of a street or road. At the top are beacon or danger lights of high visibility while the sides are utilized for the display of instructional signs. The lighting arrangements are such that the various lamps are well protected yet the signs mentioned are flooded with light. The tower though itself lightly built, rests on a heavy base well calculated to resist ordinary impacts from colliding wheels. As supplied by the manufacturer the base is in the form of a knock down sheet metal shell. This is placed in the desired position and then filled with concrete to give it the desired form, weight and stability, all of which may be accomplished by relatively unskilled persons.

In the present embodiment of my improved traffic signal I employ a base 10 including a casing containing a filler of cement 11 which forms a relatively heavy support for the lamp post 12, and the signal box or housing thereon indicated generally at 13 in Figures 1 and 2. The base is preferably diamond shaped and is disposed in the middle of the street or highway, as indicated in Figure 14, and is of sufficient weight to prevent it from being overturned and wrecked should it be accidentally struck by a passing vehicle.

The casing is first deposited at the point desired for the location of the signal and is then filled with cement, which is preferably built up in the center to a point slightly higher than the sides of the casing to form a flat portion for the reception of the lamp post from which portion the cement is tapered off as indicated in Figure 3. The casing forms a permanent wall around the cement and may be painted any desired color. It permits of the use of relatively cheap

cement or concrete material, since only a small portion of the cement is exposed to view, this portion being of a higher grade material if desired.

The construction of the casing is best shown in Figure 7 and preferably embodies a knock down type of casing which comprises four main similarly shaped sections 14 connected by two central sections 15 and two end sections 16, all being preferably constructed of sheet metal and having flanged edges adapted to interlock as indicated at 17, in a manner to form a smooth exterior surface for all parts of the casing. The opposite sections 14 are tied together by means of removable cross rods 18 having downwardly bent ends 19 engaging in suitable openings provided in the angle bars 20, which are preferably secured to the sheet metal sections by spot welding. This construction may be very quickly assembled without the use of special tools, merely by sliding one section upon the other.

The knock down metal casing affords a very considerable saving in the cost of producing the present signals, by reason of the fact that it avoids the expense of the usual temporary forms required in cement structures of this kind, such forms being necessarily a big item in the cost of production, particularly where the work is carried on at a number of different points scattered over relatively wide areas, as in the present case.

A tube 21, preferably provided with an enlarged base 22 is disposed at the center of the casing before the cement is poured therein and forms an opening for the passage of the electric wires, not shown, which are adapted to be carried upwardly from the underground conduits of the street to the upper and lower lamps 23 and 24 respectively. The upper lamp is preferably arranged to be connected with the electric light wires which are adapted to supply current for lighting stores and residences while the larger lamp 24 is adapted for connection with a separate circuit, preferably of a greater voltage, such as a power supplying circuit or a street lamp circuit. By having separate lamps for illuminating the signals, connected with separate sources of current, one lamp or set of lamps can be depended upon to illuminate the signals should the current for the other lamp be interrupted.

The lamp post 12 is preferably hexagonal in cross section with the side plates 25 thereof tapering slightly toward the top to afford an attractive design as indicated in Figures 1 and 2. The means for connecting the side plates is best shown in Figure 9 and comprises similarly shaped metal strips 26 preferably spot welded to the inner faces of the side plates at opposite sides of their meeting edges, and provided with adjacently disposed bent flanges 27. A retaining strip 28 has its edges 29 bent inwardly to engage behind the flanges 27 in a manner to firmly connect the several plates 25 one with the other. The side plates may be quickly assembled or disconnected by a sliding movement of the retaining strip 28 into or out of position as desired, said strips being preferably extended substantially the full length of the sides as indicated in Figure 3. This knock down construction facilitates storing and shipping of the parts and also renders it inexpensive to assemble and disconnect when desired.

The post is secured to the cement base by means of bolts 30 anchored in the latter and extending upwardly through the horizontal flange of a base plate 31 having a vertically disposed flange 32 shaped to conform to the interior surface of the post and connected therewith by screws or bolts 33 as shown in Figure 3. The screws are preferably extended through the flange 32 and each threaded into a reinforcing plate 34 as indicated in Figures 3 and 6, the reinforcing plates being preferably spot welded upon the flange 32.

The upper ends of the side plates 25 are connected by a ring shaped member 35 secured to the side plates by bolts 36 and having an inwardly turned flange 37, to the underside of which are preferably spot welded the ends of a depending bracket or yoke 38 for supporting the lamp 24 as shown in Figure 3.

The housing or lamp box indicated generally at 13 comprises preferably a main body portion 39 and a lower flared or skirt portion 40, the latter having an upstanding flange 41 disposed inwardly of the portion 39 and secured thereto in any desired manner. The body and skirt portions of the housing are both preferably made hexagonal in shape to conform to the shape of the lamp post. The body portion is provided with a suitable cover 42 hinged thereon at 43, the cover being hexagonal at its base and tapering to a point at its top as shown in Figures 3 and 4. The base of the cover is slightly larger than the housing 39 to afford a ventilating space between the two, as indicated at 44.

The sides of the housing 39 are provided with openings, in each of which is disposed a lens 45 secured by suitable clips 46 as shown in Figure 3. The lenses may be of any desired shape and color and are adapted to be illuminated by the lamp 23 but will also be illuminated by the lamp 24 should the light 23 become extinguished.

The flared or skirt portion 40 of the housing is provided with a plurality of mirrors or other suitable reflectors as indicated at 47 in Figures 3 and 5, which are adapted to reflect light from the lamp 24 downwardly

along the sides of the lamp post to illuminate the same in order to display by night such traffic signals or "legends" as may be deemed advisable to paint or otherwise dispose upon the post for the guidance, control, or direction of the vehicular traffic and the pedestrians passing the signal from time to time.

Should the lower light 24 become extinguished the upper light 23, on a separate circuit, will be sufficient to both illuminate the signals 45 and to provide the mirrors or reflectors 47 with sufficient light to afford the necessary illumination for the sides of the post.

The mirrors 47 are supported at their lower sides by the channel shaped portions 48 at the bottom edges of the apron 40 as shown in Figures 1 and 12, while at their upper sides they are detachably held by the slidably mounted hook shaped members 49, guided and supported by the inwardly turned flanges 50 of the plates 51 as shown in Figure 13, said plates being preferably connected with the apron 40 by spot welding. By partly withdrawing the members 49 the mirrors may be readily removed or replaced when desired.

The housing 39 and base 40 thereon are held in the desired position upon the lamp post by the upwardly extending arms or standards 52 having their lower ends resting upon and suitably connected with the flange 37 of the ring shaped member 35 as shown in Figure 3. The upper ends of the arms are suitably connected with the inner face of the housing 39 while the intermediate portions of the arms are offset inwardly to clear the upper ends of the mirrors as shown in Figure 3.

The lamp 23 is carried on a bracket 53 removably supported upon the upper edge of the housing 39, thus permitting access to the lower lamp 24.

In certain locations of the signal, particularly at street crossings which are poorly lighted, I provide a suitable lens at each of the two sides of the signal nearest the curb or edges of the road, which are so designed and positioned upon the housing as to direct rays of light from the source of light therein upon the cross walks 54, as indicated by the dot and dash lines 55, extending from a signal 56 constructed in accordance with the present invention and preferably disposed in the center of the highway or between the sidewalks 57 as shown in Figure 14. The present signal is therefore adapted to both serve as a beacon for vehicular traffic at night and to illuminate the side walks at the point of crossing as well as to constitute a directing signal by day.

In a signal constructed in accordance with my invention, the knock-down parts, before being set up, can be packed or assembled in a relatively small space and shipped or transferred to their destination at comparatively little expense.

I claim as my invention:

1. In a highway traffic signal, a base including a casing formed of a plurality of interlocking metal plates disposed upon the surface of the highway and having cross tie members therebetween with a cement filler therein, a hollow post extending upwardly from and connected with the cement, a plurality of signals carried by the post and a lamp within the post for illuminating the signal.

2. In a highway traffic signal, a base comprising a plurality of interlocking metal plates forming a casing disposed upon the surface of the highway and filled with cement, tie members extending through the cement and connecting the sides of the casing, a hollow post extending upwardly from and rigidly connected with the cement by a horizontally disposed plate member secured thereto, a vertically disposed tube extending through the cement and communicating with the post, a plurality of signals carried by the post and a lamp for illuminating the signals.

3. In a highway traffic signal, a base, a post extending upwardly therefrom, a housing mounted upon the post and including a plurality of converging sides having projecting members at one edge thereof and adjustable members adjacent the opposite edge, removable reflectors mounted within the housing and adapted to be detachably held by said projecting and adjustable members, said reflectors being adapted to project light downwardly upon the post, and a light source for the reflectors.

4. In a highway traffic signal, a sheet metal casing adapted to form a container for a cement base and comprising a plurality of interlocking sections slidably connected one with another and constructed to form a smooth exterior surface, and means extending between the sections adapted to connect the same.

5. In a traffic signal, a sheet metal lamp post including a plurality of angularly disposed side plates, oppositely spaced flanged members rigidly connected with the plates upon their inner faces adjacent their meeting edges, and connecting members for the plates adapted for sliding engagement with said flanged members.

6. In a highway traffic signal, a hollow lamp post comprising a plurality of plate sections, a flanged member connecting the sections at their upper ends, a lamp box disposed above the post and having a flared base portion overlying and projecting laterally from the post and a plurality of ver-

tically disposed members connected with said flanged member and having their upper ends connected with the lamp box between the top and bottom thereof.

7. In a highway traffic signal, the combination with a hollow sheet metal base shell composed of separate interlocking sections and adapted, when assembled, to be filled with concrete, of a tubular sheet metal post composed of separate interlocking sections, and provided with fittings adapting it to be secured to the base shell through the medium of the concrete.

8. A highway traffic signal embodying a hollow sheet metal knock-down base composed of separate interlocking sections and adapted, when assembled to be filled with concrete, reinforcing angle bars secured upon the inner faces of opposite sections and having inwardly extending flanges and tie rods having right angle ends inserted through openings in the flanges whereby the rods are adapted to connect opposite sides of the base shell to hold it in shape while receiving the concrete and acting to hold the shell to the latter.

9. In a highway traffic signal, the combination with a hollow post or tower having signal bearing outer side surfaces, of a bracket projecting within the post, a lamp socket carried by the bracket below the top of the post, a lamp carried by the socket and projecting upwardly within the post and a frame removably connected with the post independently of the bracket and having a reflector projecting laterally from the post at one end of the said side surfaces and adapted to reflect light from the lamp longitudinally along the latter.

10. In a highway traffic signal, the combination of a base adapted to extend upwardly from the surface of the highway and including a metal casing and a filler of concrete or the like projecting above the casing at its center and sloping to the edges thereof, a plate secured directly to the topmost surface of the concrete and having an upstanding portion, vertically disposed anchors connected with the plate and projecting into the concrete, a lamp post secured to said upstanding portions, a housing upon the upper end of the post, a signal carried by the housing and means within the housing for illuminating the signal.

11. In a highway traffic signal, a base, a hollow post projecting upwardly therefrom and having a plurality of converging sides adapted for display purposes, a flanged plate secured upon the upper end of the post, an inverted reflector detachably mounted upon the flange of said plate and arranged to reflect light downwardly upon the outer surfaces of the post to illuminate the same, a bracket depending within the post beneath said flange and a light source upon the bracket for supplying light to the reflector.

12. In a highway traffic signal, a lamp post, a housing provided with a reflector for directing light downwardly upon the post, arms extending upwardly from the post inwardly of the reflectors and adapted to support the housing, a plurality of lens elements mounted upon the housing and independent electric lights arranged for connection with different electric circuits to burn simultaneously and so positioned relative to the housing that each will illuminate both the lens elements and the reflectors should one fail to function.

13. In a highway traffic signal, a lamp post, a housing above the post having an upper body portion provided with a downwardly extending flared skirt-like portion, arms concealed within the housing and arranged to support the same upon the post, reflectors carried by the skirt-like portion in inclined relation to the axis of the post, lens elements each disposed opposite one of a series of openings formed in the walls of the housing above the reflectors and a lamp within the housing for illuminating the interior thereof to effect illumination both of the lens elements and the reflectors.

14. In a device of the class described, a housing for attachment to a lamp post or the like comprising a body open at its upper end and provided at its lower end with a flared skirt-like portion, a closure for the opening hinged upon the upper end of the body, a plurality of lens elements below the closure each disposed opposite one of a corresponding member of openings formed in the walls of the body, a reflector mounted inwardly of said flared portion, means connecting the reflector with said flared portion and a lamp supporting bracket extending transversely of said opening in position to render the lamp accessible through the opening.

15. In a device of the class described, a housing for attachment to a lamp post or the like, comprising a body provided with a flared skirt-like portion having an inwardly turned flange at its bottom, a reflector disposed inwardly of said skirt-like portion, with its lower edge engaging said flange, clips for attaching the upper edge of the reflector to said portion, a plurality of lens elements each disposed in registry with an opening formed in the wall of said body, a lamp supporting bracket extending transversely of the housing and a plurality of arms connected with the housing and arranged for connection with the post to support the housing thereon.

16. In a highway signal, a base, a hollow post projecting upwardly therefrom comprising a plurality of converging side plates having their lower ends connected with the

base, means connecting the upper ends of said plates, a housing overlying the upper end of the post, a reflector carried by the housing for each of said side plates and arranged to reflect light downwardly thereon, said housing having angularly disposed side walls, each of which overlies one of the reflectors, said walls having openings therein, lens elements serving to close said openings and arms within the housing having their upper ends secured thereto and their lower ends engaging the post behind the bottom portion of the housing.

HARRY J. BAREHAM.