

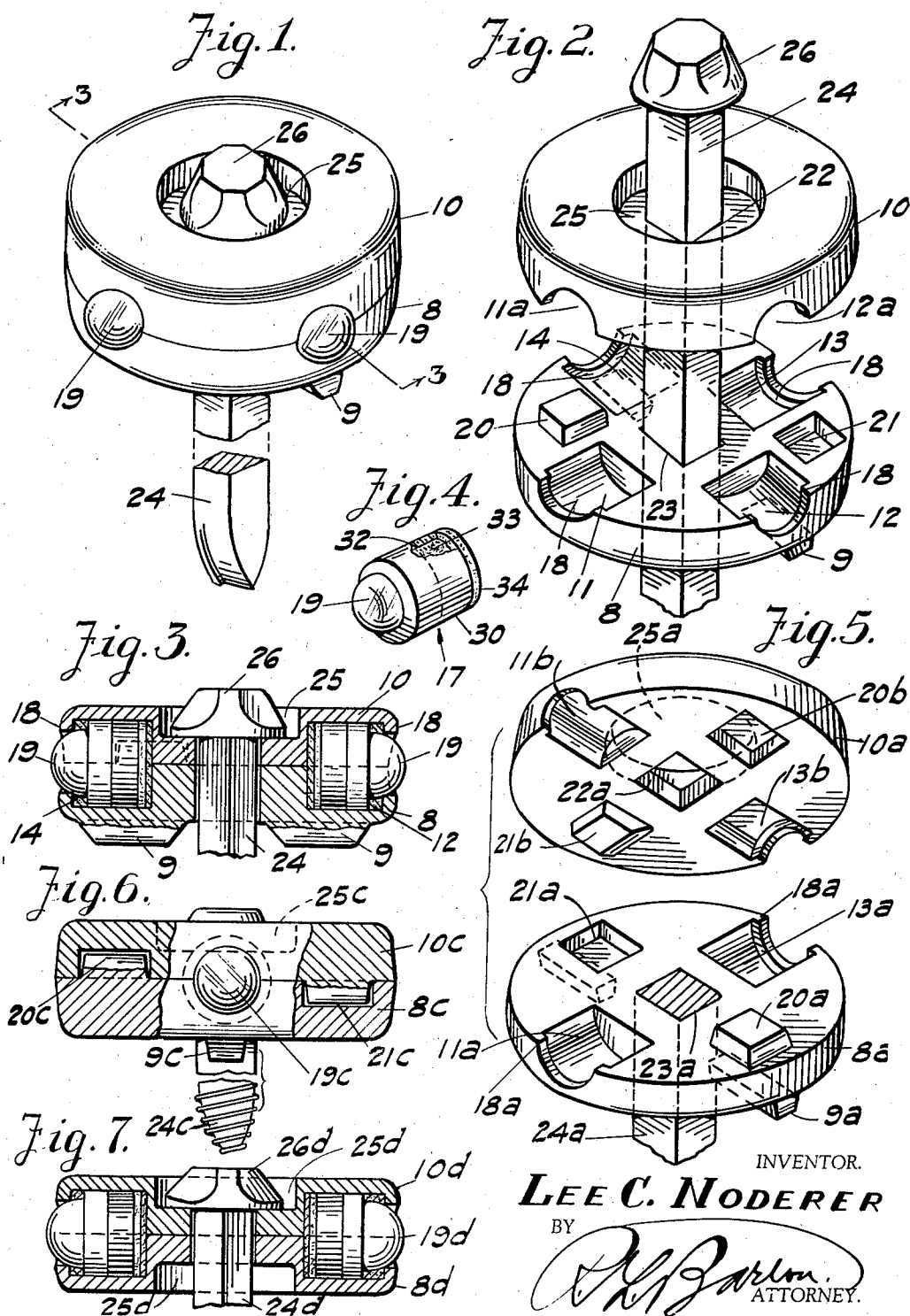
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HIGHWAY PILOT

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HIGHWAY PILOT

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The present invention relates to improvements in highway markers for indicating traffic lanes.

When applied to modern highway travel, the terms visibility and safety are almost synonymous. In recognition of this principle, engineers spare no expense in providing signs, signals, white lines, lights, white guard rails and many other devices for visibility and safety.

Even with modern safety engineered highways, three problems, due to lack of good visibility, confront the automobile driver.

First. How to remedy the blinding effects caused by the lights of approaching cars,

Second. To provide a cure for inability to see the road due to darkness, dust, fog, inclement weather or smoke,

Third. To remedy inability to see the road ahead of the normal effective range of the headlights and consequent uncertainty as to possible curves, dips or crests which may conceal danger.

It is the purpose and paramount object of this invention to contribute in an improved way to the further alleviation of the three above mentioned problems, as follows:

First. To so mark the highway or traffic lanes that they will be more clearly visible above the glare of approaching lights,

Second. In darkness, dust, inclement weather, fog and smoke, to more effectively extend visibility by means of an improved illuminating means,

Third. To more effectively indicate by use of an improved marker or illuminator, curves, dips or crests, beyond the normal range of headlights, which may obscure approaching vehicles or other hazards.

It is an important object of the present invention to provide an article of the character described which is simple to construct, cheap to manufacture and easy to install.

It is a further object of the invention to provide improved means for holding the indicating member in place; to provide improved aligning means engageable with the expansion joints of the pavement to prevent dislodgment of the marking or illuminating means; and an improved locking arrangement for holding all the parts of said means, when assembled, against misalignment.

Still further objects of an ancillary character are—

(a) To make markers smaller, occupying less space, thereby offering less impact to tires; (b)

To hold glass reflector buttons in position more

effectively; and (c) To secure reflector buttons against damage.

Other objects and advantages will hereinafter appear.

In the accompanying drawing, showing preferred and alternate embodiments of the invention as now reduced to practice,

Fig. 1 is an assembled perspective showing of a highway pilot embodying my invention, the attaching means being broken in order to shorten the view.

Fig. 2 is a perspective view of the device provided by this invention showing various parts in a spaced relation to each other.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the reflector per se.

Fig. 5 is a perspective view illustrating a modified form of my invention and showing the parts in a spaced relation.

Fig. 6 is a side elevation, partly in section and broken to shorten the view, of the highway pilot with a lag screw shown extending thru the assembled parts and showing a further modification of the invention.

Fig. 7 is a section taken thru the assembled parts illustrating a still further modification; one in which the internal locking parts and external ground cleats are omitted.

Broadly speaking the invention consists of a highway pilot comprising a pair of interlockable overlapping disks provided with matchable half sockets for housing reflector buttons and with dual means for preventing misalignment, one of said dual means consisting of cleats integral with one of said disks, and the other of said dual means, consisting of a pin engageable with both the disks and the roadbed. The device is designed for installation at intervals and in alignment on the highway and parallel to its edges in such a manner as to present to the motorist the appearance of a row of lights as he looks ahead.

Referring in detail to the several views, and first limiting consideration more particularly to Figs. 1, 2, and 3, the numeral 8 indicates a ground disk having cleats 9 embeddable within the expansion joints of the pavement. 10 is a superimposed mating disk which cooperates with the ground disk to form the main body of the visible portion of the pilot. In disk 8 are formed a plurality of radially extending half sockets 11, 12, 13, and 14, and in disk 10 are formed a like number of half sockets two of which are indicated by numerals 11a and 12a and are matchable with half sockets 11 and 12 respectively to

form whole sockets for the reception of the reflecting element 17, perspective shown, per se, in Fig. 4. Each of said half sockets is provided with an externally contracted hemispherical wall 18 which cooperates with its fellow in order that when the disks are mated a circular opening will be formed in the periphery of the marker thru which the globular part 19 of the reflector visibly extends. Said part 19, when contacted with rays of light from an automobile lamp, reflects the rays thereby defining the location of the pilot's position in the roadway whereby the driver is enabled properly to steer his car.

The ground disk 8 is provided with a locking lug 20 and a locking lug socket 21, and the cooperating disk 10 is provided with a socket to engage the lug 20 and a lug to engage within the locking lug socket 21. Each of said locking lugs, when brought into cooperating engagement by mating with the respective sockets provided for them, properly aligns the half sockets in registry with each other. The nature of the socket and lug in the disk 10 may be comprehended with ease by glancing at the top part thereof shown in Fig. 5.

The disks 8 and 10 are provided with centrally located openings 22 and 23 of a square character though not necessarily limited to such square opening, as will be fully hereinafter explained, thru which extends the spike 24 for securing the assembled parts to the highway.

Cleat 9, when embedded in the expansion joint of the highway, maintains proper rotary position of the reflector. Lug 20, when engaged within its cooperative socket, maintains proper registry of the half sockets. It also prevents a twisting dislodgment of the disk 10 from disk 8 when the former is impacted by a tire. Spike 24, in addition to securing the disks to the roadway, also tends to aid in maintaining alignment of the reflectors as well as guarding against rotary dislodgment of the disks. Cleat 9 also strengthens the wall of the disk adjacent the half sockets when an expansion joint parallels the reflecting elements. Disk 10 is also provided with a receptacle 25 into which the tapered head 26 of the spike is seated when it is driven home as shown in Fig. 1. This construction produces less wear on tires when impacted thereby.

The alternate form shown in Fig. 5 differs from the form just disclosed only in the location of the cleat 9a and the number of half sockets employed and the location of the locking lugs. The remaining structures are identical, the description of the form shown in Figs. 1, 2, and 3 being directable also to the form shown in Fig. 5. No further description will be added except to say lug 21b and lug socket 20b are definitely located in the figure and the half sockets 11b and 13b are fully shown. The similarity of parts may be distinguished as they are designated with the same numerical indicia with alphabetical letters affixed thereto. The type of pilot last described is particularly adapted for installation on highways where the expansion joint runs athwart the roadbed.

The species shown in Fig. 6 differs from that disclosed in Figs. 1, 2, and 3 only in the number of half sockets shown, the location of the locking lugs and the employment of a lag screw 24c instead of a square spike. Here again distinguishing sub-characters are assigned to all the parts described, in this instance the sub-letter c being used. In this modification, the cleat 9c secures and aligns the part 8c with the roadway. The

lugs and cooperative sockets, maintain registry of parts. The alignment and dislodgment having been taken care of, it is obvious a lag screw may be employed when the roadbed warrants.

The species shown in Fig. 7 differs from the others in that all cleats and locking lugs are eliminated, the parts 10d and 8d are identical and only the square spike is relied upon to maintain alignment of the pilot with the highway as well as to obtain the registry of one disk with the other. This type of pilot is particularly well adapted for use on highways where there are no longitudinal or transverse seams or joints. In this view the sub-character d is employed in connection with the basic numeral to further distinguish the parts.

In the several species the common reflector unit 17 is employed for reflecting light to pilot the automobile driver. These reflectors are adapted to reflect about seventy per cent of the light reaching them and are designed to resist breakage. They seldom if ever have to be changed because they are sealed between the two disks with a special cement. They provide a choice of colors whereby particular highway traffic lanes and traffic zones may be coded and standardized for day travel as well as night travel, the advantages of which will be obvious.

The reflector unit 17, shown separately in Fig. 4, comprises a cylindrical body portion 30 having at its front end a rounded forwardly projecting part 19 located axially thereof, and desirably integral therewith. The base portion of said part 19 is surrounded by a circular shoulder which cooperates with the annular flange 18 afforded by the mounting means. The body portion 30 is housed in the sockets completed by pairing the half sockets in each disk and the annular flange 18 provides a diametrically reduced circular opening thru which the convex lens portion or rounded part 19 extends and against which said shoulder abuts. When the reflector is properly cemented in its socket the cement in addition to holding the reflector in place provides a cushion for the glass. The cement is designed to be water and acid proof, heat and cold proof under service conditions. It is quick setting, easy to apply and may be procured at a low cost.

The reflector is provided with a cavity 32 to provide a receptacle for housing the reflecting substance 33, and the receptacle is capped with a cork tip 34 to seal the rear end of the cylindrical body.

It should be understood that, although the present disclosure is based on preferred modifications, it is for the purpose of illustration only and that this invention includes all other modifications and equivalents which fall within the scope of the subject matter claimed.

I claim:

1. In a highway marker, two disks of substantially identical size and shape, each of said disks having a plurality of peripherally spaced radial semi-cylindrical half sockets with contracted outer end portions in one face thereof, the greatest width of each socket being at the face of the disk, means securing said disks together in such a manner that each half socket of one disk combines with a corresponding half socket of the other to form a whole socket having a contracted mouth which opens out radially thru the peripheral portion of the combined disks, a reflector fitted within each whole socket thus formed, said reflector having a cylindrical body portion from the outer end of which axially

projects a convex lens portion, the base of said lens portion being of materially less diameter than the cylindrical portion of said reflector, thus forming an annular shoulder around the base of the lens, said lens portion fitting within and projecting outwardly from said mouth, and a filling occupying the space around said lens portion between said shoulder and the inner side of said mouth.

2. A highway marker, comprising a pair of matchable disks, mated half sockets formed in the abutting faces of said disks and opening through the periphery of the marker, means non-circular in cross section extending thru said disks cooperatively fastening them together and securing the combination to a highway whereby said mated half sockets form whole sockets and said disks are restrained from becoming mis-matched when contacted by automobile tires in their rotary movement thereover, and reflecting means housed in the whole sockets thus formed by the mating of said half sockets, said reflecting means being positioned to intercept and reflect light entering the combined disks through said whole sockets, the reflected light emerging thru said whole sockets.

3. A highway marker comprising a pair of circular plates, each of said plates having a face with a recess therein opening through the periphery thereof, the peripheral portion of said recess being contracted, means securing said plates together face to face in such relative positions that the said recess of one plate cooperates with that of the other to jointly form between them a socket which has a contracted mouth that opens out through the periphery of the marker, said securing means being adapted to secure the marker to a roadbed, and a reflector within said socket positioned to reflect light through said mouth, said reflector having an annular shoulder therearound, there being an internal annular shoulder in said mouth to cooperate with the shoulder of said reflector to hold said reflector in its operative position.

4. A highway marker including two disks each having a half socket which opens out thru its periphery, a spike passing centrally thru said disks and uniting them in such an abutting manner that said half sockets are alined and are combined to form a whole socket opening out peripherally from the united disks, and light reflecting means within said whole socket and adapted to reflect light radially away from said disks.

5. In a highway marker, two cooperating plates, means securing said plates horizontally together and to a roadbed in a superimposed

relation with regard to their faces and peripheries, each of said plates having a peripheral recess in the face thereof opening through the periphery of the marker, which is directed towards the recess in the other plate, and cooperates therewith to form a socket, and an exposed reflector housed within the socket thus formed, said reflector being positioned to reflect light entering said socket out therethrough, towards vehicles approaching the marker over the roadbed to which it is attached.

6. The highway marker defined in claim 5, in which a part of said reflector projects beyond the mouth of said socket, said projecting part being sheltered from direct contact with vehicle tires by a peripheral angular shoulder of the plate thereabove.

7. A highway marker comprising a pair of disks, means common to said disks for fastening them together, and the disks thus combined to a highway, means interlocking said disks against relative rotative displacement, cleats on the bottom disk adapted to engage the expansion joint of a highway to prevent rotative displacement of said bottom disk, recesses formed in the adjacent faces of said disks and opening through the periphery of the marker adapted to be brought into registry when said disks are properly matched, and reflecting means housed in the sockets formed by said registering recesses, said reflecting means being positioned to receive and reflect light through said sockets.

8. As an article of manufacture, a reflector unit comprising a cylindrical solid body, made of light transmitting material, having a cavity in one end thereof, and a lens integral with said body at its other end, reflecting material filling said cavity, and a cap sealing said reflecting material within said body.

9. A highway marker including two disks each having a half socket which consists of a radial semi-cylindrical concavity which extends into the face of the disk and an end portion of which opens out through the periphery of the disk, a spike passing centrally through said disks and uniting them in such an abutting manner that said half sockets are alined and are combined to form a whole socket opening out peripherally from the united disks, and light reflecting means within said whole socket and adapted to reflect light radially away from said disks.

10. The highway marker defined in claim 9, in which said united disks have interlocking portions adapted to keep them from relative rotational displacement.

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