Oct. 21, 1941. W. H. BRYSON 2,259,610

REMOVABLE AND REPLACEABLE TRAFFIC MARKER

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Fig.1.

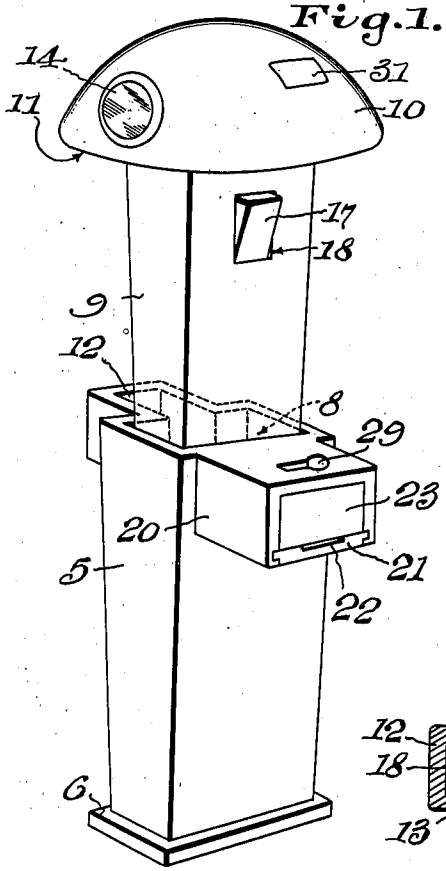


Fig.2.

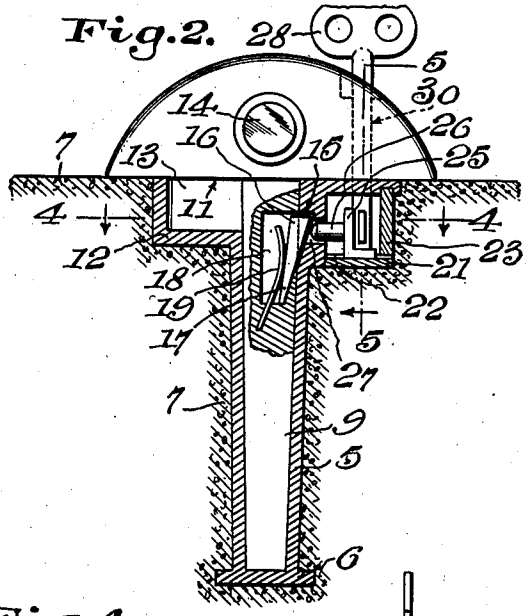


Fig.4.

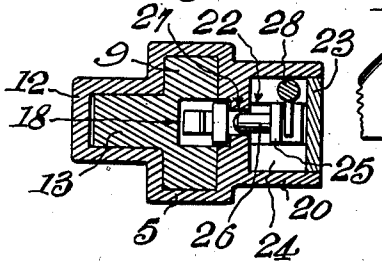
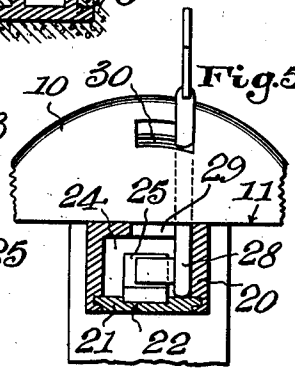


Fig.5.



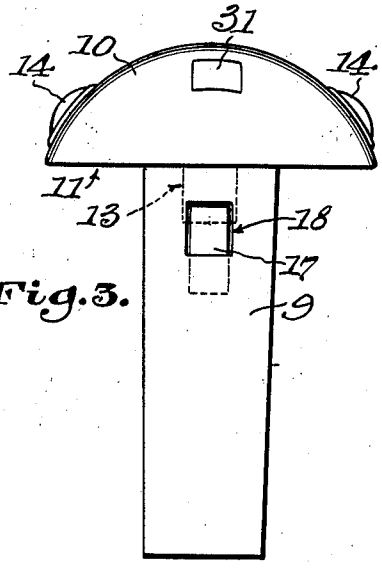


Fig.3.

Fig.8.

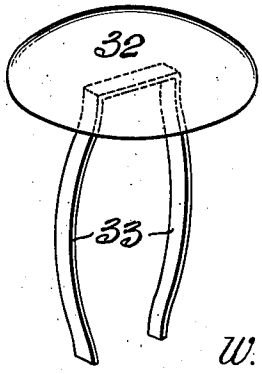


Fig.6.

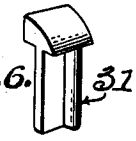
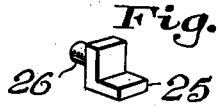


Fig.7.



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Fig. 9.

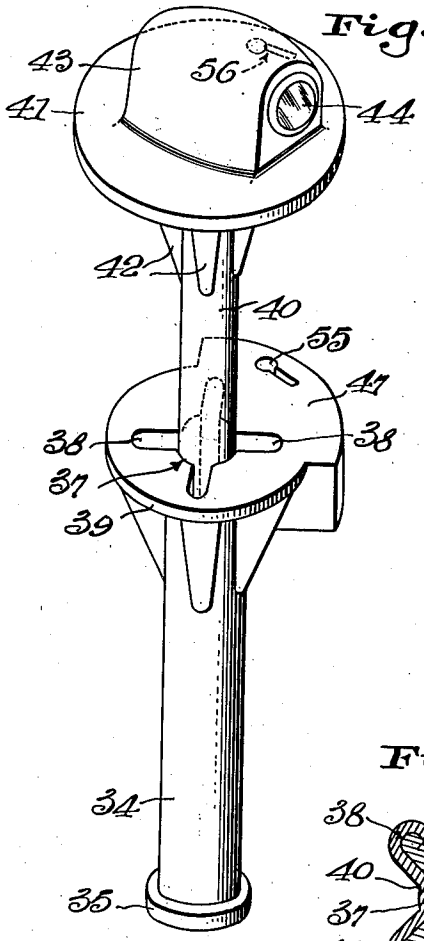


Fig. 10.

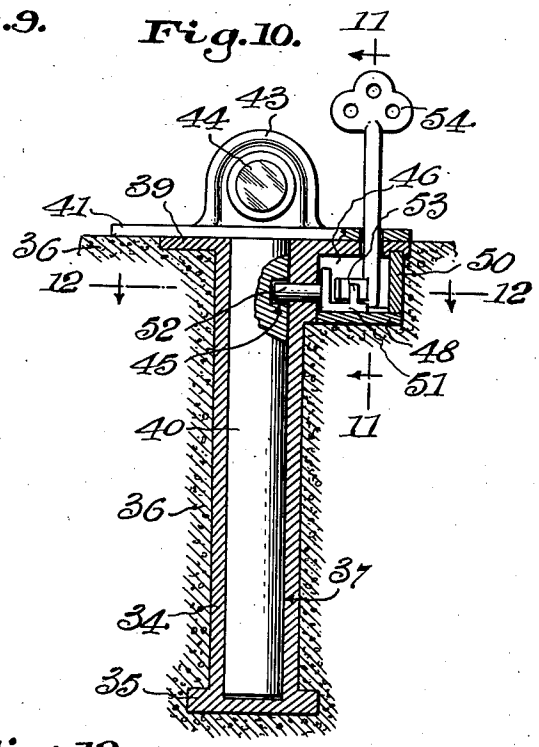


Fig. 12.

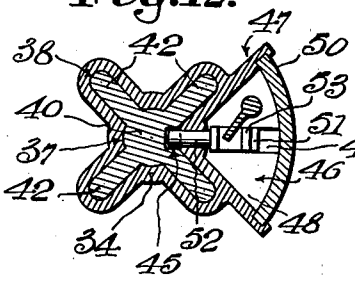


Fig. 11.

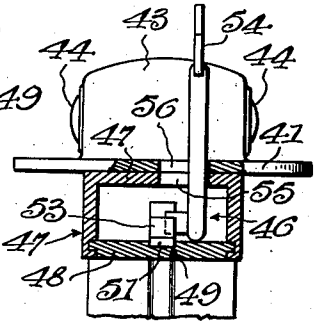


Fig. 14.



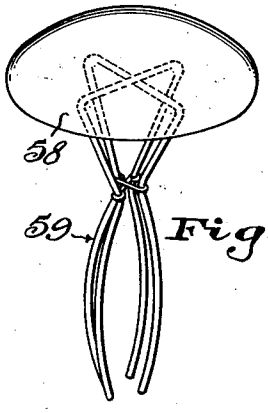
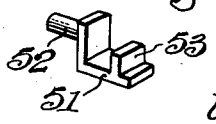


Fig. 15.

Fig. 13.



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UNITED STATES PATENT OFFICE

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REMOVABLE AND REPLACEABLE TRAFFIC MARKER

Will H. Bryson, Columbus, Ohio, assignor of fifty-five per cent to Leland S. Dougan, Columbus, Ohio

Application January 31, 1940, Serial No. 316,675

6 Claims. (Cl. 94—1.5)

The invention relates generally to traffic markers of the type adapted to be embedded in the highway to be marked thereby and which project only slightly above the highway surface so as to mark but not obstruct traffic, and it primarily seeks to provide a novel form of marker capable of being mounted with facility and thereafter subject to removal from and replacement to its mounting at the will of authorized attendants.

The practice generally followed in the placement of traffic markers of the character stated is to permanently embed the markers in the concrete or other material of which the highway is formed, and much effort has been expended in attempting to design secure mountings of this nature. However, when markers of the now very popular and widely demanded light reflecting types are employed, they must project a considerable distance above the highway surface in order to properly house and position the reflecting lenses, and such markers are seriously damaged by the steel blades of snow plows during the winter months.

Therefore, the invention has for an object the provision of a novel traffic marker comprising a socket adapted to be permanently embedded in the highway, a marker unit readily mountable in and removable from the socket, and means for securing the marker in the socket against unauthorized removal.

Another object of the invention is to provide an improved traffic marker of the character stated in which means is included for releasably locking the marker in its socket so that it can be removed from the socket only by an authorized attendant entrusted with the proper key.

Another object of the invention is to provide an improved traffic marker of the character stated in which the removable marker and its receiving socket include parts which are interengageable in a peculiar manner for assuring proper registry of the locking or securing devices.

Another object of the invention is to provide an improved traffic marker of the character stated in which is included a spring set locking detent engageable in a receiving recess for automatically effecting a locked mounting upon insertion of the marker in its socket, and key-actuated means for effecting a removal of the detent from the recess so as to permit removal of the marker from its socket.

Another object of the invention is to provide novel substitute marker elements removably mountable in the receiving sockets as temporary replacements for markers removed for repair or to prevent obstructing free passage of snow plows.

With these and other objects in view which will more fully appear, the nature of the invention will be more clearly understood by following the description, the appended claims, and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a perspective view illustrating the parts of one form of traffic marker in partially separated relation.

Figure 2 is a vertical cross section of the traffic marker of Figure 1, parts being shown in elevation and other parts being broken away and in section.

Figure 3 is a side elevation of the removable marker member.

Figure 4 is a horizontal section taken on the line 4—4 on Figure 2.

Figure 5 is a vertical cross section taken on the line 5—5 on Figure 2.

Figure 6 is a detail perspective view illustrating a keyhole plug.

Figure 7 is a detail perspective view illustrating the unlocking bolt.

Figure 8 is a detail perspective view illustrating one form of temporary substitute marker member.

Figure 9 is a perspective view similar to Figure 1 and illustrates another form of traffic marker embodying the invention.

Figure 10 is a vertical sectional view similar to Figure 2 illustrating the form of marker disclosed in Figure 9.

Figure 11 is a vertical cross section taken on the line 11—11 on Figure 10.

Figure 12 is a horizontal section taken on the line 12—12 on Figure 10.

Figure 13 is a detail perspective view illustrating the locking bolt.

Figure 14 is a detail perspective view illustrating a keyhole plug.

Figure 15 is a detail perspective view illustrating another form of temporary substitute marker member.

In the form of the invention illustrated in Figsures 1 through 8 of the drawings, there is included a socket body 5 which is non-circular or generally rectangular in horizontal cross section and includes a base flange 6 which aids in securely anchoring the socket member in its intended position embedded in the highway material 7 in the manner illustrated in Figure 2 of the drawings.

The socket body includes the socket 8 having

flared defining wall portions and which are adapted to removably receive the tapered shank 9 depending from the crown or dome shaped marker head 10. The marker head is of a diameter for extending a considerable distance beyond the mounting shank 9 in all directions, and its flat under surface 11 is opposed to and adapted to snugly engage the upper surface of the highway 7 in which the marker structure is mounted.

The socket member 5 includes a lateral socket extension 12 adapted to receive a lug 13 projecting laterally from the shank 9 and downwardly from the head 10, and the extension and lug provide complementary marker and socket member parts effective in a manner later to be described for assuring a single definite relation between the marker and socket members. The crown head 10 of the marker member carries the usual reflector lenses 14, and it should be obvious that the particular shape of this head and the number and position of the lenses carried thereby can be variously changed to suit the conditions of use.

The wall of the socket member opposed to the lateral socket extension 12 is provided with a locking recess 15 adapted to receive a locking detent 16 swingably mounted as at 17 in a recess 18 formed in the marker member shank 9. The detent is spring-pressed outwardly by a spring member 19 mounted in the shank recess 18, and this detent automatically engages in the locking recess when the shank 9 is inserted into the socket 8 and thereby serves to lock the marker member in its mounting socket against unauthorized removal.

In order to provide for the removal of the marker by properly authorized attendants, the socket member is equipped with a housing extension 20 which may have a removable bottom wall 21 equipped with a slide groove 22, and a removable outer wall 23, said wall structures serving to enclose a lock chamber 24 within the housing extension. An unlocking bolt slide 25 is slidable in the grooveway 22 and carries a cylindrical bolt extension 26 projectible through a wall bore 27 into engagement with the locking detent 16. Whenever the bolt is projected through said bore it will serve to displace the spring-pressed detent and permit withdrawal of the marker member shank 9 from the mounting socket 8.

Movement of the slide and bolt unit 25, 26 necessary to effect the detent displacement just above described is effected by manipulation of a key 28 which is operable through a keyhole 29 formed in the housing extension 20 and a registering keyhole 30 formed in the head 10. It will be obvious that when the proper key 28 is inserted and engaged with the slide 25 in a proper direction for forcing the bolt 26 against the detent 16, the desired displacement of said detent will be effected. Whenever the releasing key is not being used, entrance of foreign particles into the chamber 24 through the keyhole equipments is prevented by the mounting of a removable plug 31.

It will be obvious that should it be found desirable to remove the marker members 9, 10 for adjustment or repair purposes, or for preventing damaging contact thereof by the steel blades of snow plows or the like, this removal can be readily effected following releasing of the locking detent in the manner just above described. Under such conditions it will be found desirable to close the socket against accumulation of debris therein. This may be accomplished by use of a simple, very flat, temporary replacement marker 32 having depending spring fingers 33 engageable in the socket 8 for removably securing the member 32 in place. The member 32 will serve not only as a suitable traffic marker but will also effectively close the mounting socket. The members 32 being very thin or flat, and terminating peripherally in relatively sharp edge portions, can be used without interference with proper road clearance by snow plows.

The marker members preferably are formed of white metal, and the socket members and the temporary marker replacements preferably are formed of brass so as to avoid the problems presented by accumulation of rust and corrosion.

In Figures 9 through 15 of the drawings, there is illustrated another form of traffic marker embodying the invention. This form of marker includes a socket body 34 having a base flange or projection 35 for facilitating the permanent anchoring of the socket body in the concrete or other highway surfacing material 36. The body 34 is equipped with a cylindrical marker member mounting socket 37, and at the upper end of the body radially disposed socket extensions 38 merge into the socket 37 and extend upwardly through the body flange or enlargement 39.

The socket 37 is designed to receive the shank extension 40 depending from the marker head which includes the flat flange enlargement 41, a plurality of radially disposed ribs 42 being projected from the shank and the flange within the peripheral confines of the flange and adapted to have positioning engagement in the socket extensions 38. The crown portion 43 of the marker member carries the reflector units 44, and, as previously stated, the nature and position of these units, and the shape of the marker head, can be varied to suit various conditions of use.

A locking bore 45 is formed in the mounting shank 40 between two adjacent radial ribs 42 and in position for registering with a slide bore communicating with a locking chamber 46 formed in a housing extension 47 carried by the socket member. The housing extension may include a removable bottom 48 having a slide groove 49 therein, and a removable outer wall 50.

A slide member 51 is slidable in the groove 49 and carries a lock bolt 52 which is projectible through the socket member bore into the registering bore 45 in the marker member shank 40. It will be obvious that whenever the bolt 52 is thus engaged in the bore 45 the marker member will be securely locked in the permanently embedded socket member against unauthorized removal.

In order to permit removal of the marker member by an authorized attendant, the slide member 51 is provided with a key lug 53 which can be engaged by a suitable key 54, through a keyhole 55 provided in the housing 47 and a registering keyhole 56 formed in the marker member flange 41, for the purpose of effecting a withdrawal of the locking bolt 52 and then the resultant releasing of the locked condition of the marker shank 40. Whenever the key 54 is not actually in use the keyholes are closed against ingress of the elements and foreign matter by a removable plug 57.

Whenever a key-actuated locking bolt has been withdrawn to release the locked condition of the marker member shank 40 and the marker member removed from its socket, the socket can be closed against ingress of debris in the manner hereinbefore described by use of a temporary re-

placement marker 58 having depending spring fingers 59 for removably retaining it in the socket 37.

It is of course to be understood that the details of structure and arrangement of parts may be variously changed and modified without departing from the spirit and scope of my invention.

I claim:

1. A traffic marker comprising a socket member adapted to be permanently embedded in a highway, a marker member having a crowned head for lying close to the highway surface and a depending shank removably mountable in said socket, and means for releasably locking the shank in the socket against unauthorized removal, said last named means including a locking recess formed in the socket member, a spring projected detent carried by the shank and engageable in the locking recess, and key-actuated means carried by the socket member and engageable with the detent for displacing the detent from the locking recess to permit withdrawal of the shank from the socket member.

2. A traffic marker comprising a socket member adapted to be permanently embedded in a highway, a marker member having a crowned head for lying close to the highway surface and a depending shank removably mountable in said socket, and means for releasably locking the shank in the socket against unauthorized removal, said last named means including a locking recess formed in the socket member, a spring projected detent carried by the shank and engageable in the locking recess, and key-actuated means carried by the socket member and engageable with the detent for displacing the detent from the locking recess to permit withdrawal of the shank from the socket member, said shank having a lateral shank positioning projection bearing a constant definite relation to the spring pressed detent, and said socket member having a shank positioning projection receiving recess therein bearing such constant definite relation to the locking recess as to be effective to receive the shank positioning projection only when the shank is inserted into the socket in proper position for having the detent properly register with the locking recess.

3. A traffic marker comprising a socket member adapted to be permanently embedded in a highway, a marker member having a crowned head for lying close to the highway surface and a depending shank removably mountable in said socket, and means for releasably locking the shank in the socket against unauthorized removal, said last named means including a locking recess formed in the socket member, a spring projected detent carried by the shank and engageable in the locking recess, key-actuated means carried by the socket member and accessible through a key hole opening through said crowned head and engageable with the detent for displacing the detent from the locking recess to permit withdrawal of the shank from the socket member, and a removable plug normally closing said key hole opening.

4. A traffic marker comprising a socket member adapted to be permanently embedded in a highway, a marker member having a crowned head for lying close to the highway surface and a depending shank removably mountable in said socket, and means for releasably locking the shank in the socket against unauthorized removal, said last named means including a locking recess formed in one of said members, a spring projected detent carried by the other of said members and engageable in the locking recess, and key-actuated means carried by the said one member and engageable with the detent for displacing the detent from the locking recess to permit withdrawal of the shank from the socket member.

5. A traffic marker comprising a socket member adapted to be permanently embedded in a highway, a marker member having a crowned head for lying close to the highway surface and a depending shank removably mountable in said socket, and means for releasably locking the shank in the socket against unauthorized removal, said last named means including a locking recess formed in one of said members, a spring projected detent carried by the other of said members and engageable in the locking recess, and key-actuated means carried by the said one member and engageable with the detent for displacing the detent from the locking recess to permit withdrawal of the shank from the socket member, said socket and said shank having mutually engaging wall portions bearing definite relation to said locking recess and detent so as to be mutually engageable only when the shank is so inserted into the socket as to position the detent for entry into said locking recess.

6. A traffic marker comprising a socket member adapted to be permanently embedded in a highway, a marker member having a crowned head for lying close to the highway surface and a depending shank removably mountable in said socket, said socket member and said shank having wall portions mutually engaged when the shank is mounted in the socket, said mutually engaged wall portions having registering recesses therein, a locking detent engageable across the mutually engaged wall portions in said registering recesses for locking the shank in the socket, and key-actuated means for displacing the detent from its position across said mutually engaged wall portions for releasing the locked condition of the shank and permitting its removal from the socket.

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