March 10, 1942. B. K. FRANK ET AL 2,275,518

HIGHWAY MARKER

Filed July 10, 1939

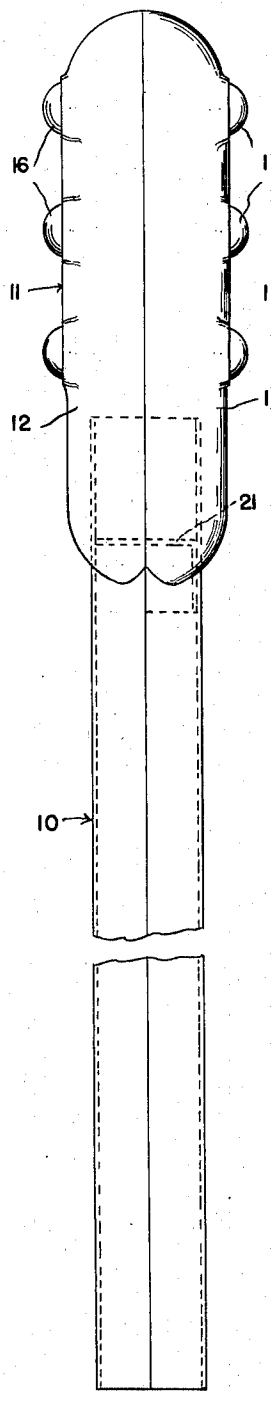


FIG.1.

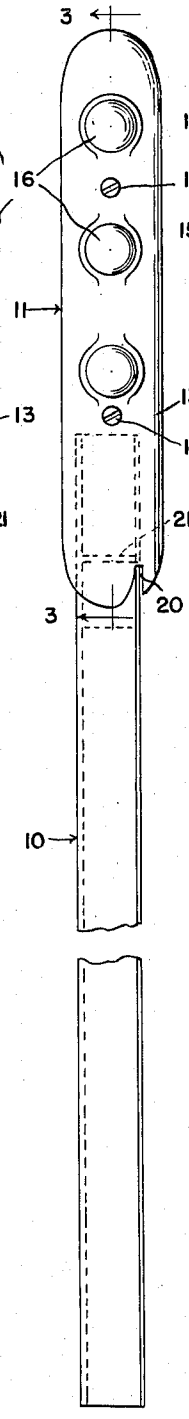


FIG.2.

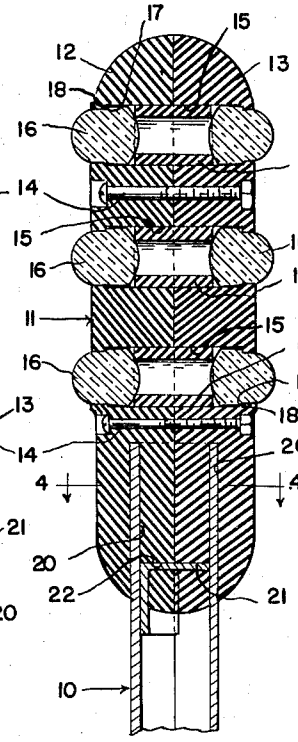


FIG.3.

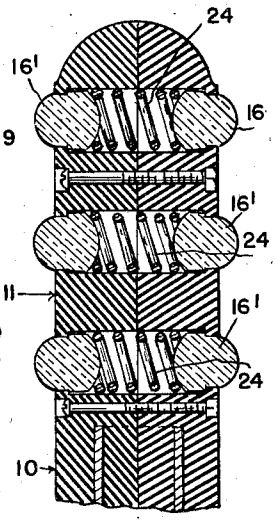


FIG.6.

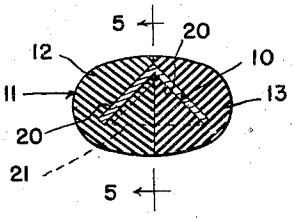


FIG.4.

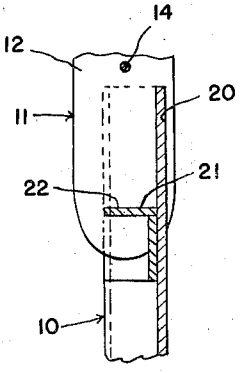


FIG.5.

INVENTORS

BRUCE K. FRANK, HARRY M. PRYALE

BY WARD CLINTON SMITH

WILLIAM A. PAXTON

Whittemore Hulbert & Belknap ATTORNEYS

Patented Mar. 10, 1942

2,275,518

UNITED STATES PATENT OFFICE

2,275,518

HIGHWAY MARKER

Bruce K. Frank, Birmingham, Harry M. Pryale, Pontiac, and Ward Clinton Smith and William A. Paxton, Detroit, Mich., assignors to Baldwin Rubber Company, Pontiac, Mich., a corporation of Michigan

Application July 10, 1939, Serial No. 283,680

8 Claims. (Cl. 88—82)

This invention relates generally to signals and refers more particularly to improvements in signals of the type employed to indicate a border line of a road or highway.

Due to the numerous accidents caused at night by drivers of vehicles misjudging the location of the adjacent edge of the highway, it has been proposed to locate markers at spaced points along opposite side edges of the highway and to provide reflector lenses on the markers in a position to intercept rays of light emanating from the head lamps of the vehicle. These rays of light are reflected by the lenses in a manner that the lenses become immediately visible to the driver and permit him to accurately judge the proximity of the vehicle with reference to the adjacent edge of the highway.

Although the advantages of the general type of roadway marker, briefly outlined above, are known, nevertheless, numerous problems in construction and upkeep have heretofore rendered the practicability of such markers questionable. It is, therefore, one of the principal objects of this invention to overcome these problems by providing a relatively simple inexpensive highway marker capable of being readily installed and requiring the minimum upkeep.

Another advantageous feature of the present invention resides in the provision of a highway marker having a lens carrying body shaped in such a manner that there will be very little tendency for snow or ice to accumulate on or cover the surfaces of the marker through which the reflector lenses project.

With the foregoing, as well as other objects in view, the invention resides in the novel construction of the highway marker which will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein:

Figure 1 is a side elevational view of a highway marker constructed in accordance with this invention;

Figure 2 is a front elevational view of the highway marker shown in Figure 1;

Figure 3 is a longitudinal sectional view taken substantially on the plane indicated by the line 3—3 of Figure 2;

Figure 4 is a sectional view taken substantially on the plane indicated by the line 4—4 of Figure 3;

Figure 5 is a sectional view taken substantially on the plane indicated by the line 5—5 of Figure 4;

Figure 6 is a longitudinal sectional view illustrating a slightly modified form of construction.

The highway marker forming the subject matter of the present invention comprises a supporting stand in the form of a bar 10 and a lens carrying body member 11 secured to the upper end of the bar 10 in a manner to be presently described. The body member 11 is divided longitudinally to provide two complementary sections or halves 12 and 13 adapted to be removably clamped together at longitudinally spaced points by means of the fastener elements 14. It is proposed to separately mold the sections of the body 11 from hard rubber stock or from any one of the numerous moldable plastics, although, it will, of course, be understood that the body portion 11 may be fashioned from sheet metal. There are numerous advantages of forming the body portion 11 from either a hard rubber stock or a plastic material and perhaps one of the most important of these advantages is that it is unnecessary to paint the body portion 11 to either preserve the same, or enhance its appearance. In other words, the body portion may be left the natural color of the material from which it is formed, and this feature contributes materially to reducing the upkeep of the marker to the minimum.

Upon reference to Figure 3, it will be noted that each of the complementary sections of the body 11 is formed with a plurality of longitudinally spaced openings 15 therethrough in a manner such that when the sections are secured together, the openings 15 assume positions in registration with each other. In the present instance, a reflector lens 16 is located in each of the openings 15 in a manner such that the outer ends of the lenses project beyond the opposite sides of the body portion. It will also be noted from Figure 3 that each reflector lens 16 is fashioned with an annular shoulder 17 intermediate the ends thereof adapted to abut a corresponding annular shoulder 18 surrounding each of the openings 15 in the sections of the body 11. The shoulders 17 and 18 cooperate with one another to limit the extent of outward movement of the lenses 16 with respect to the body member 11 and are yieldably held in engagement by means of resilient members 19 housed in the registering openings 15 in the body member 11 between the opposed lenses 16. In the present instance, the resilient members 19 are in the form of rubber tubes adapted to be compressed when the complementary sections of the body member 11 are

secured together by means of the fastener elements 14.

Upon reference to Figure 4, it will be noted that the cross sectional contour of each of the sections of the body 11 is such as to impart, in effect, a streamlined or elliptical cross section to the body member 11. In the present instance, the lenses 16 project from the opposite sides of minimum width of the body 11 or, in other words, the marker is installed with the major axis of the elliptical cross sectional area thereof extending substantially parallel to the roadway in connection with which the marker is used. The advantage of locating the lenses 16 on the sides of minimum width of the body 11 is that there will be less tendency for snow and ice to accumulate on this relatively narrow arcuate surface and, accordingly, the danger of the reflector lenses becoming concealed by the elements is reduced to the minimum. It will also be noted that the top of the body 11 is also fashioned to form arcuate surfaces so as to insure effecitve drainage to prevent accumulation of snow on the top of the marker. If desired, the bottom of the body member 11 may be similarly formed to not only provide the body with a uniform pleasing appearance, but to also serve to deflect any force tending to strip the body from the supporting bar 10.

The supporting bar 10 is in the form of an angle bar and each section of the body member 11 is fashioned with a longitudinally extending groove or recess 20 adapted to cooperate with the groove in the other section to telescopically receive the angularly extending flanges of the bar. In order to insure rigid connection of the body member 11 with the bar 10, provision is made for effecting an interlocking connection therebetween. As shown in Figures 4 and 5, a web 21 is secured to the bar in spaced relation to the upper end of the latter and extends in a substantially horizontal plane. Each of the sections of the body member 11 is horizontally recessed adjacent the lower end thereof to provide a groove 22 in the body for receiving the web 21 on the bar.

In assembly, the complementary sections are individually moved laterally into assembled relation with their respective flanges so that the web 21 slides into the groove 22. After this step in the assembly is accomplished, the two complementary sections are clamped together by the fastener elements 14 which, in addition to clamping the sections into engagement with one another and securing the lenses 16 in place, further function to hold the body member 11 in assembled relation with the supporting bar 10. In this connection, it will be noted that the fastener elements 14 are in the form of bolts and nuts. The nuts are preferably permanently anchored in one of the sections for engagement with the threaded ends of the bolts extending through the other section and the latter section is preferably counterbored to provide recesses for receiving the head portions of the bolts.

The embodiment of the invention shown in Figure 6 differs from the one previously described in that coiled springs are employed to hold the lenses 16' in assembled relation with the sections of the body member and these coiled springs are designated in Figure 6 by the reference character 24. With the above exception, the construction may be the same as the one previously described.

What we claim as our invention is:

1. In a highway marker, a lens carrying body comprising separable sections cooperating with each other to form said body and having registering bores extending transversely through the body, a lens mounted in each bore and having shoulders engageable with cooperating shoulders in the bores, a yieldable member supported under compression in the registering bores between the adjacent ends of the lenses to hold the shoulders of the latter in engagement with the shoulders in the bores, and a fastener element for clamping the sections of the body together and having the additional function of securing said yieldable member under compression between said lenses.

2. In a highway marker, a lens carrying body comprising a pair of complementary sections having registering bores extending transversely therethrough and provided with shoulders, a lens located in each bore and a shoulder on each lens abutting the shoulder in the associated bore, and a yieldable member supported in the registering bores under compression between the adjacent ends of the lenses to hold the shoulders on the lenses in engagement with the cooperating shoulders on the sections, and means for clamping the sections together.

3. In a highway marker, an elongated lens carrying body having transversely curved opposed sides of relatively narrow width as compared to the width of the adjacent sides and split longitudinally in a plane at right angles to the sides of greater width to form two halves, the two halves of the body having registering coaxially extending bores therethrough with the common axis of the bores extending perpendicular to the plane of the adjacent contacting faces of the halves and an annular shoulder in each bore adjacent the outer end thereof, a pair of lenses respectively mounted in the bores and having shoulders abutting the shoulders in said bores, a yieldable member supported under compression in the registering bores between the adjacent ends of the lenses to hold the shoulders on the latter in abutting engagement with the shoulders on the bores, and means for clamping the two halves of the body together.

4. In a highway marker, an elongated lens carrying body having transversely curved opposed sides of relatively narrow width as compared to the width of the adjacent sides and split longitudinally in a plane at right angles to the sides of greater width to form two halves, the two halves of the body having registering coaxially extending bores therethrough with the common axis of the bores extending perpendicular to the plane of the adjacent contacting faces of the halves and an annular shoulder in each bore adjacent the outer end thereof, a pair of lenses respectively mounted in the bores and having shoulders abutting the shoulders in said bores, and a coil spring supported under compression in the registering bores between the adjacent ends of the lenses to hold the shoulders on the latter in abutting engagement with the shoulders on the bores, and a fastener element for clamping the two halves of the body together and for securing the coil spring under compression between the lenses.

5. In a highway marker, an elongated lens carrying body having transversely curved opposed sides of relatively narrow width as compared to the width of the adjacent sides and split longitudinally in a plane at right angles to the sides of greater width to form two halves, the two halves of the body having registering coaxially

extending bores therethrough with the common axis of the bores extending perpendicular to the plane of the adjacent contacting faces of the halves and an annular shoulder in each bore adjacent the outer end thereof, a pair of lenses respectively mounted in the bores and having shoulders abutting the shoulders in said bores, a tube of yieldable material supported under compression in the registering bores between the adjacent ends of the lenses to hold the shoulders on the latter in abutting engagement with the shoulders on the bores, and means for clamping the two halves of the body together.

6. In a highway marker, a supporting bar having angularly extending flanges, a lens carrying body comprising separable sections each forming one half of the body and each section having a longitudinally extending groove, said grooves extending at an angle to each other from the adjacent contacting surfaces of the sections with the adjacent longitudinal edges of the grooves registering with one another in the assembled relationship of the sections and the angle between the grooves corresponding to the angle between the flanges on the supporting bar to receive the latter flanges when the sections are assembled, a lens carried by each section and extending through an opening formed in the outer wall of each section, and a fastener element for clamping the sections together with the supporting bar therebetween.

7. In a highway marker, a supporting bar having angularly extending flanges, a lens carrying body comprising separable sections each forming one half of the body and each section having a longitudinally extending groove, said grooves extending at an angle to each other from the adjacent contacting surfaces of the sections with the adjacent longitudinal edges of the grooves registering with one another in the assembled relationship of the sections and the angle between the grooves corresponding to the angle between the flanges on the supporting bar to receive the latter flanges when the sections are assembled, a lens carried by each section and extending through an opening formed in the outer wall of each section, a fastener element for clamping the sections together with the supporting bar therebetween, and cooperating engaging means on the bar and sections for positioning the sections on said bar and for preventing shifting movement of the sections lengthwise of the bar.

8. In a highway marker, an elongated lens carrying body having transversely curved opposed sides of relatively narrow width as compared to the width of the adjacent sides and split longitudinally in a plane perpendicular to the sides of greater width to form two halves, means for clamping the two halves together, said halves having coaxially extending bores therethrough with the common axis of the bores extending perpendicular to the adjacent contacting surfaces of the halves, a pair of lenses respectively mounted in the bores and having shoulders engageable with cooperating shoulders in the bores, a yieldable member supported under compression in the registering bores between the adjacent ends of the lenses to hold the shoulders on the latter in abutting engagement with the shoulders on the bores, said halves also having grooves extending angularly from the contacting surfaces thereof in a manner that the groove in one half registers with the groove in the other half when the two halves are assembled, and a supporting bar having angularly extending flanges respectively received in said grooves during assembly of the halves to form said body.

BRUCE K. FRANK.
HARRY M. PRYALE.
WARD CLINTON SMITH.
WILLIAM A. PAXTON.