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Kaplan

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[54] **TRAFFIC MARKER WITH RESILIENT COLUMN**

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[52] **U.S. Cl.** ..... **116/63 PC;** 40/145 A; 248/160; 116/63 P

[51] **Int. Cl.**[2] **E01F 9/10**

[58] **Field of Search**.... 40/145 AR, 125 H; 248/160; 116/63 R, 63 P, 63 PC; 404/10 R

[56] **References Cited**

UNITED STATES PATENTS

3,016,035	1/1962	Asbury	116/63 P
3,099,244	7/1963	Knapp	116/63 PC
3,451,368	6/1969	Keats	116/63 PC

FOREIGN PATENTS OR APPLICATIONS

626,097	10/1961	Italy	40/145 A
1,926,703	11/1970	Germany	116/63 PC

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[57] **ABSTRACT**

A traffic marker in which an upright column carrying reflectors is supported in a molded rubber base.

The traffic marker is comprised of a secure assembly of three resilient parts, each one of which is easily replaceable in case of damage. The upright column is a resilient tubing having a flared lower end. The molded rubber base has a slightly conical opening, with an annular recess on its under surface. A resilient rubber bellows is snugly received through the base opening, and snugly receives the flared lower end of the tubular column in its upper opening. The bellows functions as a hinge member, and also as a secure assembly member. The lower portion of the bellows is shaped as a frustum of a cone closely received in the base opening, said cone being provided with an external annular shoulder mating with the annular recess on the underside of the base, and providing positive location for the bellows. The upper portion of the bellows has an interior conical surface mating with the flared lower end of the tubular column, and an internal annular shoulder for seating the flared lower end of the column.

2 Claims, 4 Drawing Figures

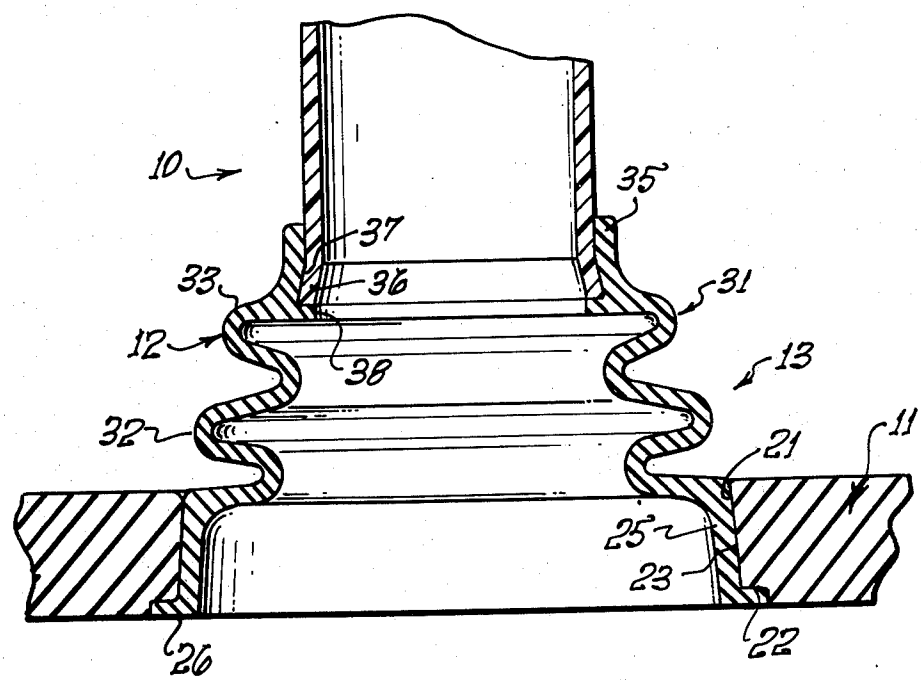


FIG. 3a.

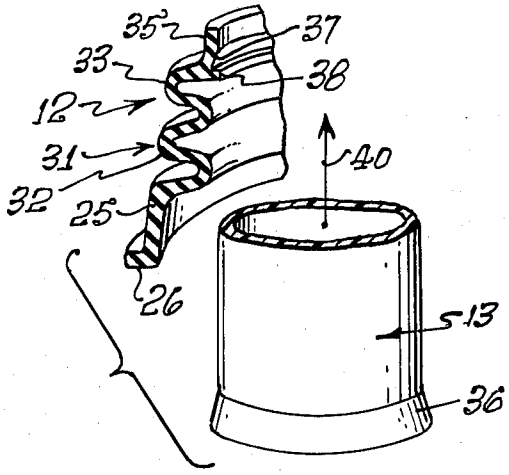


FIG. 1.

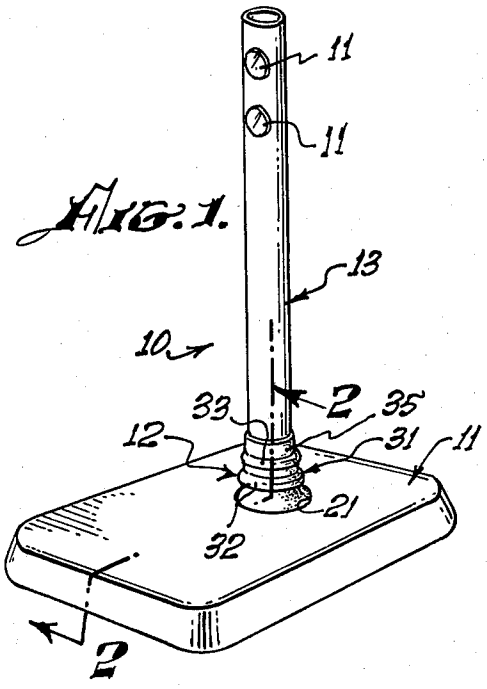


FIG. 2.

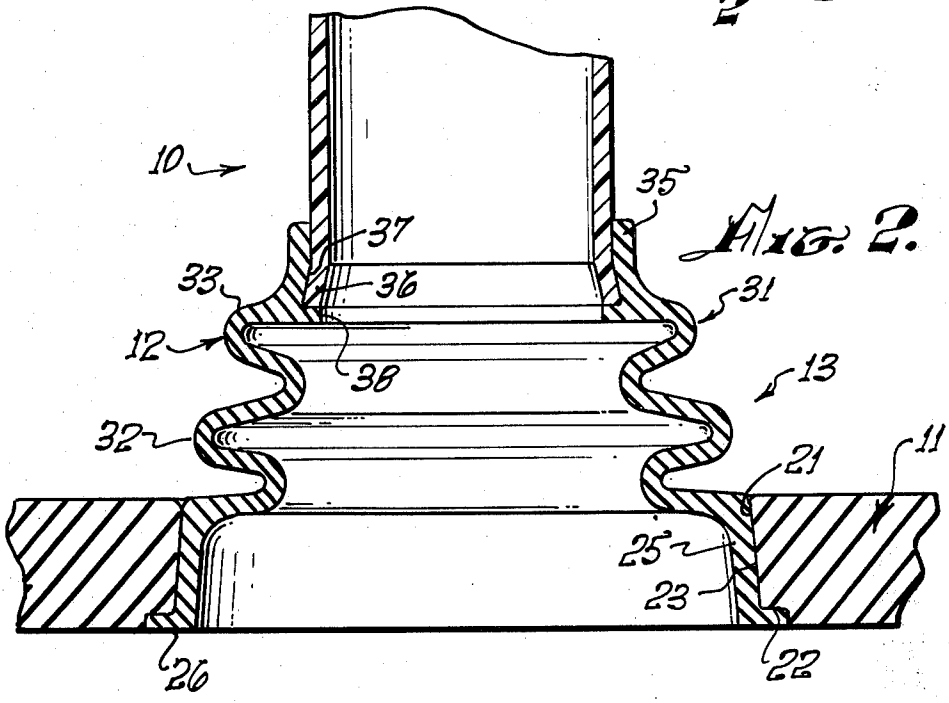
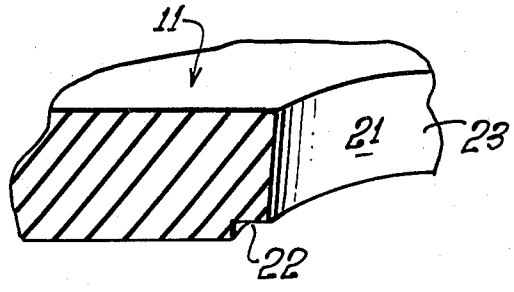


FIG. 3b.



TRAFFIC MARKER WITH RESILIENT COLUMN

Traffic markers have come into widespread use for directing automobile traffic on city streets. However, it will be understood that the traffic marker of the invention, like most previously known traffic markers, can, with or without some modification in size or materials, be used for directing traffic flow of airplanes on air fields, or of pedestrians in large public buildings, and the like.

Traffic markers are made conspicuous by means well known to those familiar with modern construction of traffic markers, and also to most motorists. They are made of highly reflective material, frequently material which is fluorescent plastic, or is painted with fluorescent paint. They should be capable of structurally supporting suitable reflectors, which reflect lights from the approaching headlights of approaching vehicles, to alert motorists at night.

Most importantly, traffic markers must be extremely rugged, and capable of being run over by vehicles without sustaining damage in some cases, or being readily repairable in others. At the same time, the marker may not be constructed of metal or other heavy materials which might damage an oncoming vehicle, or injure persons in the vicinity.

In the past, traffic markers have generally not been repairable. They have been made of resilient rubber-like materials, tough plastics, and the like, and have been capable of continued use even after repeated blows from passing vehicles. Most traffic marker designs, however, have been such that once substantial damage has been incurred in any part of the marker, the entire marker must be discarded.

It is a major object of the present invention to provide a traffic marker having a new type of construction comprising a hinged vertical column capable of yielding, when struck by a vehicle, without sustaining damage in most cases.

It is a second important object of the present invention to provide a traffic marker which is a simple assembly of three parts, each of which is made of tough, but resilient material, so that component parts may be salvaged from damaged marker assemblies, and useful markers can be assembled in the field in the field from salvaged parts.

The foregoing and other objects of the invention will best be understood from the following description which should be read with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of one preferred form of traffic marker constructed according to the present invention;

FIG. 2 is a vertical sectional view of the lower part of the traffic marker of FIG. 1, as seen at a vertical plane through the axis of the marker as indicated by the numerals 2—2 in FIG. 1; non-essential parts have been broken away, and the dimensions enlarged for purposes of illustration; and

FIGS. 3*a* and 3*b* are fragmentary perspective views of sectional parts of the base and column holder component parts of the marker, together with a part of the column in FIG. 3*b*, showing the manner in which the three components mate with one another in the preferred form of the invention.

In FIG. 1, the marker indicated generally by the numeral **10** is seen to be comprised of a relatively massive

base **11**, which is typically made of molded rubber, tough and resilient, but much more resistant to yielding than other parts of the marker; a holder **12**, preferably molded of rubber or a rubber-like plastic; and a tubular column **13**, preferably molded of a rugged and resilient plastic material such as polyvinyl chloride. Usually, it is desirable to mount reflectors **14** on column **13** to make the marker **10** easily visible to motorists by virtue of light reflected from the sun or the vehicle headlights.

Base **11**, holder **12**, and column **13** are formed to be assembled in a close-fitting assembly as illustrated in the sectional view of FIG. **2**.

FIG. **2** also serves to illustrate the bellows construction of holder **12**, which functions as a hinge to permit column **13** to be deflected from its normally vertical position, without damage to marker **10**, or any part thereof, when the marker is struck by a passing vehicle.

Base **11** is thick and massive and flat on its underside, in order to provide stability for the marker **10**. Base **11** is provided with a hole **21**, somewhere in its middle portion, although not necessarily central. The hole **21** is enlarged at its lower end by a peripheral recess **22** opening downwardly as illustrated in FIGS. **2** and **3***a*. Above peripheral recess **22**, the sidewalls **23** of hole **21** converge slightly in an upward direction. It is often practical although not required, that hole **21** be circular, and that sidewalls **23** define the surface of a cone with a vertical axis.

Holder **12** is seen to be a unitary molded piece having three differently constructed sections; a bottom step portion **25**, which has an upwardly converging external surface mating with the upwardly converging surface **23**, and a peripheral shoulder **26** which closely mates with peripheral recess **22**; a bellows **31** including a series of bellows folds **32** and **33**; and a sleeve **35** for closely receiving the lower end of column **13**.

Preferably, column **13** is provided with a flared lower end as indicated at **36**, and the interior of sleeve **35** is shaped with a conical surface **37** to mate with the flared end **36**; and also with an internal annular shoulder **38** for seating and locating the lower end of column **13**.

It is a preferred construction for holder **13**, that it be generally conical. Thus, the step portion **25** converges slightly upwards, but is larger in diameter than the bellows **31**. Also, the folds **32** and **33** of bellows **31** may be of successive smaller diameter as they increase in elevation.

Obviously, hole **21** and step **25** may be round as illustrated or may depart from being perfectly circular, to some other shape if it is desirable to prevent rotation of holder **12** within base **11**.

It is desirable to make the column **13** out of polyvinyl pipe with an incandescent outer surface, or some equivalent visibility, so that the marker may be readily observed by motorists.

Also, the nature of the rubbery materials from which each of the three components is fabricated is such that their assembly is held together by frictional engagement, and their dimensions are such that they are retained in assembly by a slight degree of interference fit, and pressure between the parts at point of contact.

Also, it will be understood that the parts are sufficiently resilient to permit assembly of past interfering shoulders. For example, in FIG. **3***a*, a sectional part of the flared end **36** is shown, and the direction of assembly is indicated by the arrow **40**, which shows that column **13** is assembled by pushing flared end **36** upwardly

past the annular shoulder **38.** The resilient characteristics of both the material of column **13** and the material of holder **12** will permit this assembly. Conversely, in the event of damage to any part, the application of manual force will be sufficient to disassemble the three components of the marker **10** from one another.

I claim:

1. A traffic marker which includes:

a tubular column having sufficient vertical extent, diameter, and reflectance, to be conspicuous to motorists, said column having an outwardly flared lower end;

a normally vertical holder for said column, said holder comprising:

a sleeve at the upper end of said holder for closely receiving said flared lower end of said column;

a bellows comprising a series of bellows folds below said upper sleeve, said bellows having a resilience permitting the deflection of said sleeve from the vertical axis of said holder; and

a lower end of said holder having greater horizontal extent than the diameter of said bellows, said lower end having walls diverging outwardly and downwardly, and said lower end including a peripheral shoulder at its lowermost edge; and

a base having sufficient horizontal extent and weight relative to said holder and said column to support them in a normally upright vertical position with stability, and said base being provided with an opening for receiving said lower end of said holder, said opening having upward converging interior walls to mate with the downwardly diverging walls of said lower end, and said base opening having an internal peripheral recess to accommodate said lower peripheral shoulder on said holder.

2. A traffic marker as described in claim **1** in which said holder is formed substantially as an upwardly converging cone, said lower end of said holder being an annular shoulder of substantially larger diameter than said bellows and said sleeve, said bellows diminishing in diameter at each successive fold in an ascending direction, and said sleeve having an internal conical surface accommodating the flared lower end of said column and said sleeve being provided, near its lower end, with an internal annular shoulder for supporting and locating said flared lower end of said column.

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