Oct. 25, 1960 G. W. REHBORG 2,957,596

VACUUM BOTTLES

Filed Jan. 31, 1958

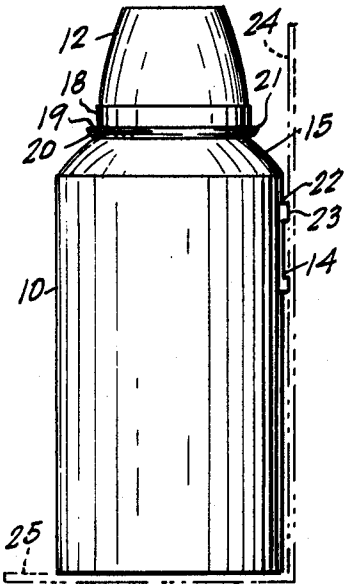


Fig. 1

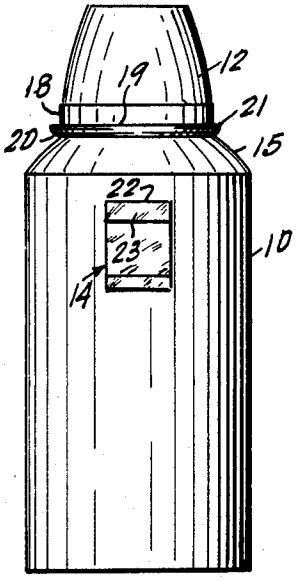


Fig. 2

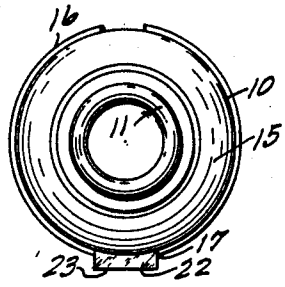


Fig. 5

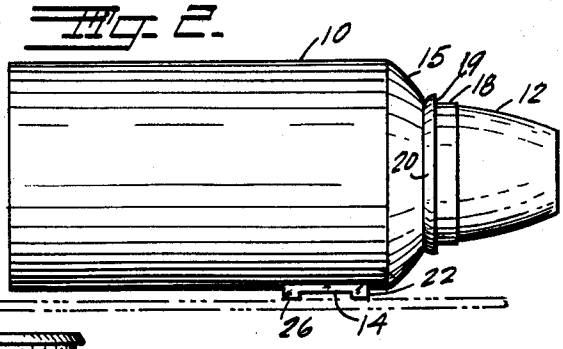


Fig. 3

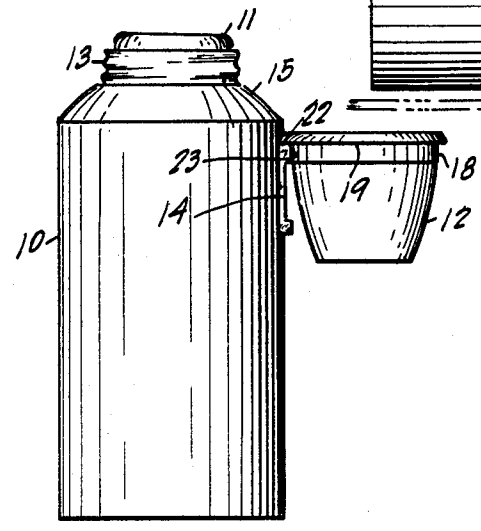


Fig. 4

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VACUUM BOTTLES

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2 Claims. (Cl. 215—100)

This invention relates to improvements in vacuum bottles and similar containers, and provides retaining means for maintaining a bottle in an upright position and also against rolling about when carried in a tractor, bulldozer, or agricultural implement, to particularly prevent breakage or loss of the vacuum bottle, the bottle being provided with a casing having a permanent magnet for cooperation with a magnetizable wall or floor.

Operators of road building and maintenance equipment and of agricultural implements and similar devices usually carry a vacuum bottle of coffee or other drink with them while operating the implement, storing the bottle in some compartment or recess. Since vacuum bottles are prone to break or shatter when subjected to relatively light jars, many are broken through rolling about the enclosure, or by rolling out of a recess, and my invention assures freedom from breakage through falling over, rolling about the enclosure or off the recess or pocket, and is therefore particularly adapted for use with such implements and vehicles.

The objects and advantages of the invention are as follows:

First, to provide a vacuum bottle with a casing having a permanent magnet incorporated therewith for attachment to a magnetizable wall or the like for maintaining the bottle in a fixed position against jarring action.

Second, to provide a vacuum bottle as outlined with a cup provided with a portion of magnetizable material for releasable attachment to the permanent magnet to provide a support for a hand-held vacuum bottle cup or cap while lunching or drinking.

Third, to provide a permanent magnet with a band to encircle an existing vacuum bottle to which the permanent magnet was not applied during manufacture.

In describing the invention reference will be had to the accompanying drawings, in which:

Fig. 1 is a front elevation of a vacuum bottle having my invention applied thereto, and showing the bottle magnetically secured to an upright wall of magnetizable material.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 shows the vacuum bottle retained against rolling on a floor of magnetizable material.

Fig. 4 is a front elevation with the cup or cap removed and supported by the magnet on the casing.

Fig. 5 is a top plan view of a vacuum bottle with the cup removed, and the permanent magnet applied through the medium of a spring clip which substantially encircles the casing.

The invention can be applied to the casing **10** of any type of vacuum bottle, either during manufacture, or after manufacture, and is therefore applicable to all existing vacuum bottles.

The bottle proper, or filler as it is usually referred to, and indicated at **11**, is housed within the casing **10** with the neck projecting slightly as indicated at **11**. A stopper, not shown is supplied for sealing the bottle.

A combined cap and cup **12** is threaded onto the neck **13** of the casing and protects the neck of the bottle against damage or breakage.

The invention resides in the application of a permanent magnet **14** to one side of the casing, and may either be locked or otherwise secured in the side wall of the casing preferably adjacent to the collar **15**, or may be fixed to a resilient clamp **16** as indicated at **17** so that the magnet can be attached to existing vacuum bottles, this magnet and its attachment to the casing being the principal feature of the invention. It will be noted that the inner face of the magnet is arcuately formed to conform to the curvature of the casing, while the outer face is provided with a projecting leg on each, the upper and lower end portions and extending throughout the width of the magnet, for spaced cooperation with a magnetizable surface for maximum flow of flux through the magnetizable surface for a maximum degree of magnetic adhesion.

For increased utility, the combined cap and cup **12** is provided with a section or band of magnetizable material and which consists of a thin portion **18** which terminates in a shoulder **19**, the bottom surface **20** being suitably rounded, and the edge **21** broken or slightly rounded to eliminate a sharp edge.

It will be noted that the upper leg has a plane top surface **22** and a plane front surface **23**, the depth of the intervening surface between the legs, indicated at **14** in Fig. 3, being equal to or slightly greater than the depth of the shoulder **19** on the cup, so that the shoulder will seat on the top surface with the magnetizable band or section **18** magnetically cooperating with the surface **23** for suitably holding the cup in proper position. For removal, the cup is not to be drawn directly away from the magnet, but is to be rotated about the casing until the shoulder leaves the terminal edge, thus here will be no jerk to cause spillage of the contents of the cup.

It is merely necessary to move the vacuum bottle to bring the magnet in contact with the wall **24** with the vacuum bottle resting on a support **25**. If the vacuum bottle is laid on a support **25** which is formed of magnetizable material, the bottle can only roll until the magnet contacts the support where it will be held against further rolling as indicated at **26** in Fig. 3.

With existing vacuum bottles it is merely necessary to apply the clamp type shown in Fig. 5 to the bottle, and the ring **18, 19, 20** can also be applied to the cup either in the form of a spring clamp or pressed on, so that this invention is applicable to all vacuum bottles, either during, or after manufacture.

I claim:

1. In a vacuum bottle or the like having a casing having a side wall and a combined cap and cup, a permanent magnet mounted adjacent the upper end of said side wall, said permanent magnet having a plane top face and a plane front face at right angles to each other, a band of magnetizable material mounted at the lower end of said combined cap and cup when applied to the bottle as a cap, said band terminating in an annular shoulder for cooperation with said top face with said band cooperative with said front face for supporting the combined cap and cup when used as a cup, through magnetic adhesion, with the cup removable through rolling action about the side wall until the shoulder clears the terminal edge of the top face.

2. In a vacuum bottle having a casing having a side wall having an upper end and a lower end, and a combined cap and cup; a permanent magnet mounted on said side wall adjacent said upper end and having a top face,

and a section of magnetizable material mounted on said combined cap and cup, said section terminating in a shoulder for cooperation with said top face for support of the combined cap and cup in the inverted cup-forming position and releasable free of jarring through rolling movement of the cap along the side wall until the shoulder passes the terminal edge of the permanent magnet, said permanent magnet maintaining the vacuum bottle against falling or rolling through magnetic adhesion to a body of magnetizable material.

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