

[54] FUNNEL	3,490,501	1/1970	Manem et al.....	141/331
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[22] Filed: May 7, 1971

[21] Appl. No.: 141,135

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[52] U.S. Cl..... 141/332, 141/327, 141/333, 222/570

[51] Int. Cl..... B65b 39/06

[58] Field of Search 141/331-335, 392, 327; 285/178, 331, 423, 238, 260; 29/453; 4/206; 222/570

[57] ABSTRACT

A funnel having a flange adapted to fit around the periphery of a can and having its small end offset from the large end to assist in pouring.

[56] References Cited

UNITED STATES PATENTS

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1 Claim, 2 Drawing Figures

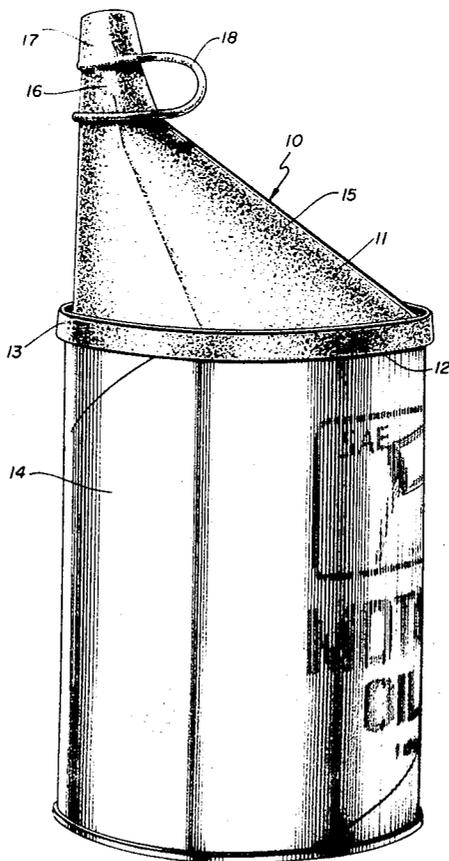


FIG. 1

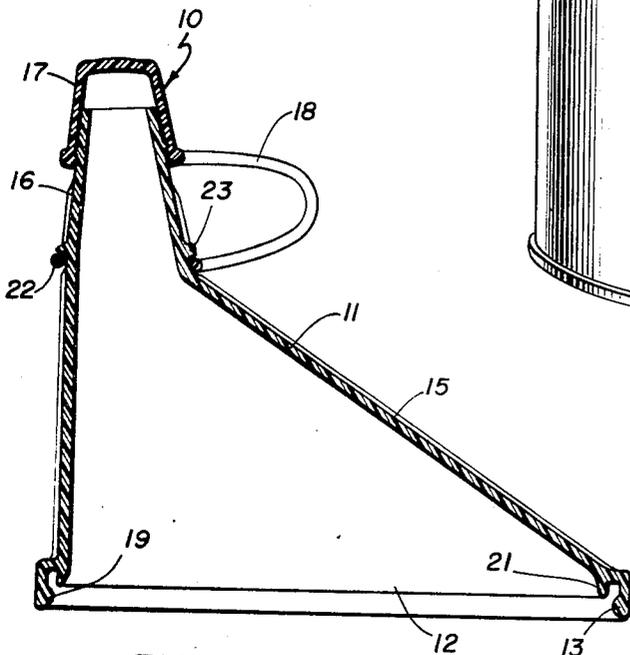
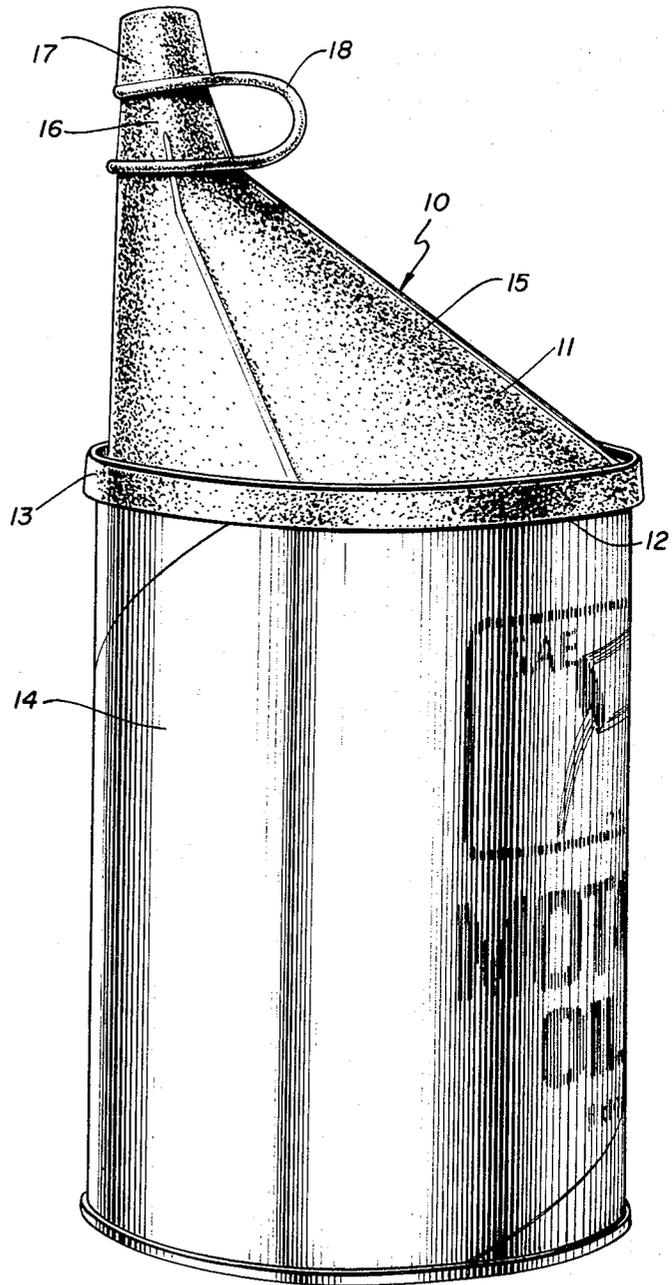


FIG. 2

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FUNNEL

BACKGROUND OF THE INVENTION

In pouring liquids from a can, it is extremely difficult to introduce the liquid into a small opening. This is particularly true in the case of the introduction of motor oil into the oil sump of an internal combustion engine. Although it is common practice to use a conically-shaped funnel to accomplish this, there are many instances where the entrance opening is located in such a way that the funnel and the can containing the motor oil cannot be maneuvered to introduce motor oil into the engine without spillage. In addition, where a viscous motor oil is used, the funnel must be left in the opening to which the oil is to be poured long enough for all of the oil to drain from the surfaces of the funnel; this is necessary not only to save oil, but also to insure that the funnel does not deposit oil in the place where it is stored. In many cases, the funnel sits in the body of oil during this last drainage period and, when it is removed, there is still a substantial amount of oil to drip in the place of storage. These and other difficulties experienced with the prior art devices have been obviated in a novel manner by the present invention.

It is, therefore, an outstanding object of the invention to provide a funnel which is capable of being placed in a liquid-tight manner on a can of a liquid which is to be poured.

Another object of this invention is the provision of a funnel which serves in a dual capacity as an assistant to pouring and a protection for the top of the oil can from dust and dirt.

A further object of the present invention is the provision of a funnel which snaps onto the top of a can of liquid and which can be readily removed without the use of tools.

It is another object of the instant invention to provide a funnel which may be stored immediately after use and which permits run-back of any oil that clings to its surface into the can.

A still further object of the invention is the provision of a funnel formed to extend into hard-to-reach places.

It is a further object of the invention to provide a funnel which may also be used under certain conditions as a dipper for assisting in the removal of old motor oil from an engine.

It is a still further object of the present invention to provide a funnel which can be simply and inexpensively manufactured from non-corrosive material and which is capable of a long life of useful service without deterioration.

With these and other objects in view, as will be apparent to those skilled in the art, the invention resides in the combination of parts set forth in the specification and covered by the claims appended hereto.

SUMMARY OF THE INVENTION

In general, the invention consists of a funnel having a hollow main body formed of an elastomer plastic and having an opening at one end. A flange extends inwardly from the main body around the periphery of the opening, the flange being adapted to envelope the end of a container. The main body has an inclined surface that can be pressed to lift a portion of the flange from the container.

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BRIEF DESCRIPTION OF THE DRAWINGS

The character of the invention, however, may be best understood by reference to one of its structural forms, as illustrated by the accompanying drawings, in which:

FIG. 1 is a perspective view of a funnel embodying the principles of the present invention, and

FIG. 2 is a vertical sectional view of the funnel.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring first to FIG. 1, which best shows the general features of the invention, the funnel, indicated generally by the reference numeral 10, is shown as having a hollow main body 11 formed of an elastomer plastic, such as linear polyethylene, and having an opening 12 at one end. The flange 13 extends from the main body 11 around the periphery of the opening 12, the flange being adapted to envelope the end of a container 14. The main body 11 has an inclined surface 15 that can be pressed to lift a portion of the flange from the container.

The main body 11 has a neck 16 located a substantial distance away from the said opening 12 and having a secondary opening of smaller size than the said opening 12. A cap 17 is provided to fit on the neck 16 and is connected to the main body by a flexible band 18. The main body 11 has the general shape of a surface connecting a large circle to a small circle parallel to and spaced from the large circle with its center displaced laterally a substantial distance from the center of the large circle. More specifically, the periphery of the small circle is substantially tangential to the projection of the large circle onto the plane of the small circle and the small circle lies entirely within the said projection.

Referring to FIG. 2, it can be seen that the flange 13 is provided with an internal radial lip 19 to engage and lock with the conventional lip on the container 14. As is evident in this view, the upper neck 16 is of a generally conical configuration, while the surface 15 extends from the base of that cone to the flange 13. In addition, a downwardly-directed axial flange 21 extends downwardly from the interior of the main body in a position generally spaced from and concentric with a flange 13. The flange 21 fits in the inside of the lip of the container to provide for drain-back.

The end of the band 18 opposite the end which carries the cap 17 is provided with a ring 22. This ring snaps over an outwardly-directed ridge 23 formed at the bottom of the neck 16. The cap 17, the band 18, and the ring 22 are integrally formed of an elastomer plastic so that the band 22 is resilient enough to snap over the ridge and be locked in place.

The operation of the invention will now be readily understood in view of the above description. Two holes are punched in the top of the container 14 to allow for the removal of liquid therefrom. The funnel 10 is then snapped in place with the flange 13 fitting under the lip on the container and the flange 21 fitting down inside of the end recess of the container. The cap 17 is then removed from the top of the neck 16, but may be left in place hanging by the ring 22 and the band 18. The container and funnel are then tipped, so that liquid leaves the container, flows into the funnel, and then out through the small opening at the top of the neck 16. This neck can be inserted into the opening into which the contents are to be poured. In the case of motor oil,

this would be the entrance into the oil sump of an internal combustion engine. Once a sufficient quantity of liquid has been poured, it is only necessary to return the cap 17 to the top of the neck and the can and its contents will be protected from dust and dirt. When the container is placed in its vertical position, any liquid which remains on the inner surface of the funnel will run back down the surface and into the can again. It will be prevented from leaking out around the edge of the funnel by the flange 21 which will insure that this liquid returns to the recessed end of the container.

The present invention is particularly useful in the case of a marine engine where the entrance to the oil sump of the internal combustion engine is located in a recess under the bulk of the engine and access is very difficult even with a conventional funnel. With the present invention, the container and funnel can be introduced into the recess in a somewhat horizontal condition without danger of spillage. In addition, on a boat, the danger of the oil can being tipped over and the oil running into the bilge water is a common problem. Furthermore, there is no convenient place to store a funnel in a boat and the present invention allows the funnel to be stored with the oil can. It serves to keep the oil clean, free of water and dirt, and there is no danger of the funnel dripping after it has been used, since the excess oil on the surface of the funnel drains back into the can.

In addition, the present invention lends itself particularly to being manufactured inexpensively by the injection molding process. When it is desired to remove the funnel from the container, it is only necessary to press against the inclined surface 15 and this causes the flange 13 to be pulled upwardly from the lip of the container, so that the funnel is free to be removed. This can be done without the use of any tools, nor does the hand of the user touch the inside of the funnel. If the funnel is being used for potable liquids, then his hand does not contaminate this surface and, if the funnel is being used for material, such as motor oil, his hand does not get

covered with any residue of motor oil that may be on the inner surface.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, however, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

The invention having been thus described, what is claimed as new and desired to secure by Letters Patent is:

1. A funnel, for use on a container, said container having a circular upper surface, a container flange upwardly directed from the periphery of the upper surface, and a container lip extending radially from the upper edge of the container flange, comprising:

- a. a first circular aperture, defining a plane, and having an axis and a circumference,
- b. a second aperture of smaller area than said first aperture, and having a periphery and a geometric center, said second aperture being spaced from the plane of the first aperture and located so that its center is spaced from the axis of the first aperture,
- c. a elastomer plastic web connecting every point on the periphery of the second aperture to every point on the circumference of the first aperture,
- d. a first flange, concentric with the first aperture and extending longitudinally from the plane, and positioned to engage the inner surface of the container flange,
- e. a second flange, of large diameter than and concentric to the first flange, and extend longitudinally from the plane,
- f. a peripheral, inwardly-directed lip extending radially from the second flange, and positioned to engage the lower portion of the container lip thereby cooperating with the first flange to form a seal with the periphery of the container.

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