

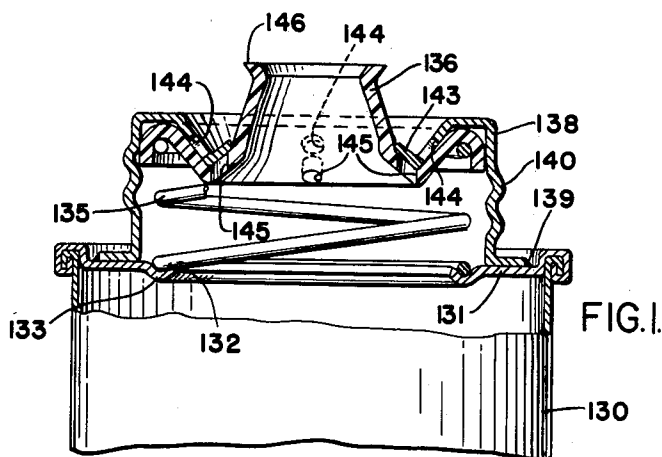
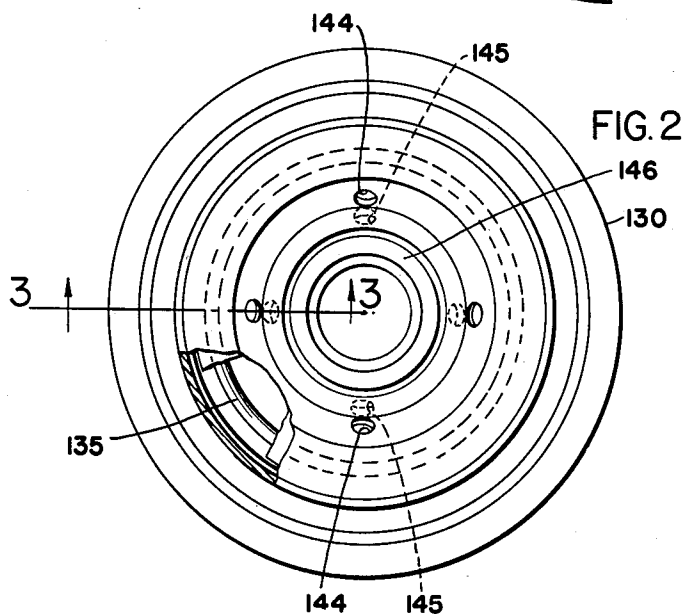
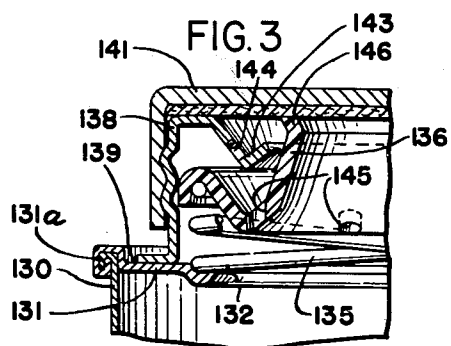
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ADAPTER AND ADAPTER COMBINATION

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ADAPTER AND ADAPTER COMBINATION

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1 Claim. (Cl. 222—110)

This invention relates to an adapter or fitment for liquid-containing bottles and other containers such as tin cans, etc. It is designed more particularly to form a closure in the opening at the outer end of the neck on such a vessel with a single opening through the adapter large enough to serve as a pouring spout.

The adapter with a single opening therethrough is the usual form of adapter and it is ordinarily designed with a pouring lip at all sides thereof, so that the pouring opening or spout is symmetrical. The adapter is fastened to the container in any suitable manner.

The adapter is provided with a channel between its outer edge and the spout which collects any drip from the pouring lip or lips and liquid which runs down the outside of the spout at the end of a pouring operation. Drainage means is provided in the channel which when closed permits liquid to be poured from the vessel through the spout; and when open causes the liquid which collects in the channel to drain back into the container.

The container is provided with a cap, preferably a screw cap, which is adapted to cover the pouring opening or spout, and is adapted to be fastened to the container. When the cap is fastened to the container it depresses the spout and opens the drainage means in the channel so that any liquid which is in the channel drains into the container. When the cap is removed the spout rises, and the drainage means closes, any liquid may then be poured from the container through the spout as though no drainage means were included in the adapter.

The invention is further described in the drawing in which:

FIG. 1 is a section through an adapter fastened in the opening of a metal can;

FIG. 2 is a plan view of the same; and

FIG. 3 is a section on the line 3—3 of FIG. 2 with a cap on the can and the spout depressed.

This is a continuation-in-part of application Serial Number 535,940 filed September 22, 1955, now Patent 2,889,079.

The adapter is designed for installation on the neck of a bottle or in the opening of a metal can, or other suitable container. It is designed to be closed by a cap. Different designs of caps may be employed. They may be hinged, but generally the screw type of cap will be utilized. The cap may be provided with a dome, but preferably the cap is of the standard design with a flat top as illustrated. A gasket will be employed in the cap only when necessary. Ordinarily the cap will be adapted to be fastened to the container so tightly that the use of a gasket is optional, depending upon the type of liquid contained in the vessel. The gasket may be made of rubber or other plastic where such materials are suitable, as in the packaging of varnishes, etc., lubricating oils, etc. Elsewhere paper or treated paper or the like may be utilized. The adapters may be made of polyethylene or other plastic, the nature of the plastic employed being dependent at least to some extent upon the material being packaged. Polyethylene will generally be a preferred material because it is resilient and elastic, and also is quite inert to chemicals.

The adapter may be used on bottles of different types. It may be attached to the bottle in different ways. There is a central opening through the adapter which is bounded by a wall around the top edge of which is a pouring lip, forming a spout. This lip flares outwardly to a feather

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edge which makes sealing contact with the cap when the cap is held tightly against it. The top surface of the lip need not taper continuously upwardly, but in order to obtain sealing contact with the top of the cap or a gasket the outer edge may be flattened for a distance of, for example, ten to twenty thousandths of an inch. The lip is undercut so that it is flexible and will readily form sealing contact when the cap is pressed against it.

Between the spout and the outer edge of the adapter is a channel which is formed of areas attached to both the pouring spout and the outer wall. Between these are openings in the channel which are adapted to be closed when the cap is removed.

It is readily seen from the foregoing explanation that any liquid dripping from the lip after pouring, and any liquid draining down the outer surface of the lip after pouring, will collect in the channel. Before pouring, the liquid collecting in the channel may be returned to the vessel by depressing the pouring outlet. When the cap is screwed on to the vessel, after use, the openings in the channel are automatically depressed, and any liquid in the channel drains back into the vessel. If the capped vessel is tipped over, liquid running through the spout will be sealed in the cap and when the vessel is again brought to the upright position, all liquid above the adapter drains down through the openings and returns to the container. It is not necessary to cap the container in order to drain the channel, because depressing the closure cap by any means drains the channel as effectively as if the container is capped.

The can 130 has a lid 131 which is crimped to the wall of the can at its outer edge, in the usual manner. There is a large opening 132 in the lid, and a circular indentation 133 adjacent the opening. The coil spring 135 rests in this groove and supports the plastic adapter 136. The neck 138 of the vessel is welded to the lid 131 at 139 to form the top of the can. The mouth is threaded at 140 to receive the cap 141 (FIG. 3). It extends upwardly and then down inwardly and terminates in a trough 143. There are openings 144 near the bottom of the trough in the metal extension of the neck through which any liquid dripping from the spout or running down the edge of the spout will drain when the spout is depressed. Such liquid will be held in the trough by the plastic spout which is pressed upwardly by the spring. The plastic spout may be depressed either by fastening the cap 141 (FIG. 3) in place or by manually depressing it. When the spout is depressed the liquid drains first through the openings 144 and then through the openings 145 in the plastic spout back into the vessel. The openings 145 and 144 do not coincide, and there is through-passage back into the container only when the plastic spout is depressed and separated from the metal neck. The spout 136 may be provided with one or more pouring lips, but is preferably constructed with an annular lip 146 which makes symmetrical contact with the cap 141 when the cap is put in place.

The plastic adapter is preferably made of polyethylene or other plastic which has sufficient body to depress the spring, as illustrated in FIG. 3, when pressure is applied to its top edge. It is this depression of the plastic spout which effects the drainage of the entrapped liquid back into the container.

The plastic spout 136 and the spring 135 are preferably assembled into the can cover before the cover is assembled to the body of the can. This is done by inserting them through the opening 132 after the neck 138 has been welded to the lid 131. The plastic spout is flexible and can easily be distorted to pass through this opening. The spring is so constructed that it likewise can be contracted circumferentially so as to pass through the opening. The

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cover might be inverted and the plastic spout be introduced through the opening and be allowed to rest on the inturned flange 143 of the neck while the spring is put in place. On inversion, the top could then be fastened to the body of the can. There are other types of springs that may be employed, and the general design may be altered without departing from the scope of the claim.

The adapter may be provided with a snap-on ring or other means of attachment. Although in the claim there is no reference to the presence of a gasket in a cap, it is to be understood that a gasket may be used. The flange 156 may taper to a point or may have a flat outer edge.

It is also noted that one or more slits or openings or the like may be cut into the plastic as the adapter is put on to a vessel, or after it has been put in place, or after the adapter has been made an integral part of a plastic vessel, container etc. This is of particular value when the adapters are placed on the vessels by automatic equipment, as the equipment may include automatic slitting mechanism.

Thus modifications may be incorporated in the adapters of this invention.

What I claim is:

A container having a cover which includes a lid with

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a large opening therein and a neck portion around the opening, a flexible plastic adapter provided with a spout, the adapter being located in the neck and separated from the lid by a supporting spring which presses it against the inner surface of an inwardly extending portion of the neck, a low area in the neck against the underside of which the adapter is pressed by the spring, at least one opening at said low area of the neck and at least one opening in said portion of the adapter which is pressed against the low area of the neck, said openings in the neck and adapter not coinciding but being adapted to drain liquid from above the extension of the neck back into the container when the spring is pressed and the portion of the adapter containing said hole is separated from contact with the neck.

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