

[54] POURING SPOUT FOR CANS

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[76] Inventors: Casper J. Weir, Jr., Rt. 3, Box
215-B, San Luis Obispo, Calif.
93401; Fred Keyes, 22693
Woodridge, Hayward, Calif. 94541

Primary Examiner—Stanley H. Tollberg
Assistant Examiner—Norman L. Stack, Jr.
Attorney, Agent, or Firm—Huebner & Worrel

[22] Filed: Apr. 2, 1973

[21] Appl. No.: 347,227

[52] U.S. Cl. 222/570

[51] Int. Cl. B65d 5/74

[58] Field of Search 222/570, 569; 220/90, 90.6;
285/210, 209, 208

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UNITED STATES PATENTS

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[57]

ABSTRACT

A reusable pouring spout for paint cans and similar receptacles wherein a channel structure opening radially outward, made of resilient material, can be sprung into snug engagement with the rim formation of a can, and a curved lip element extends outwardly from the channel structure. The pouring spout may be removed from the can by contracting the channel structure.

3 Claims, 6 Drawing Figures

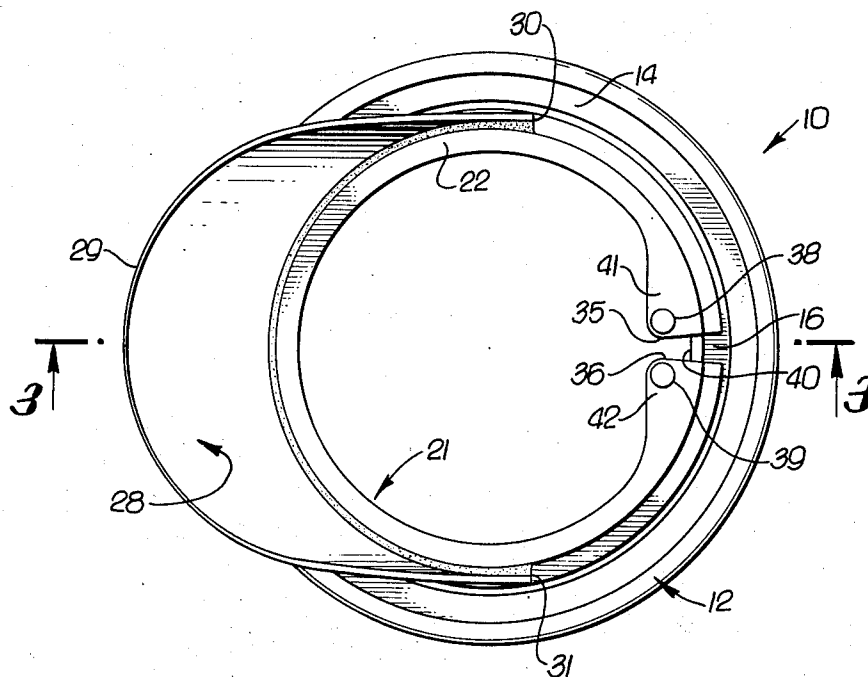


FIG. 1.

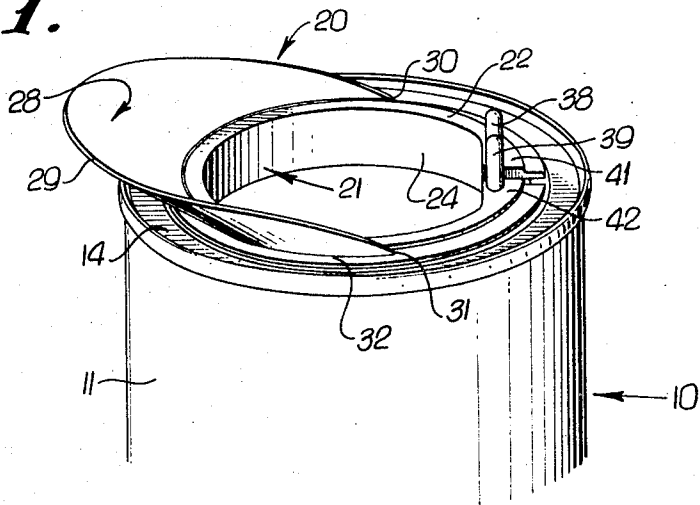


FIG. 4.

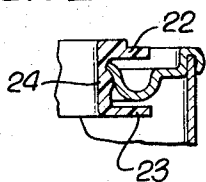


FIG. 3.

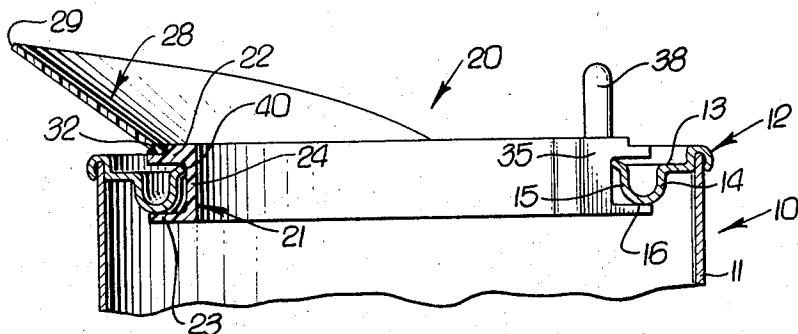


FIG. 5.

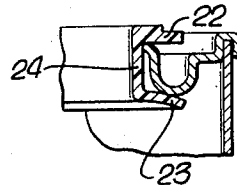


FIG. 2.

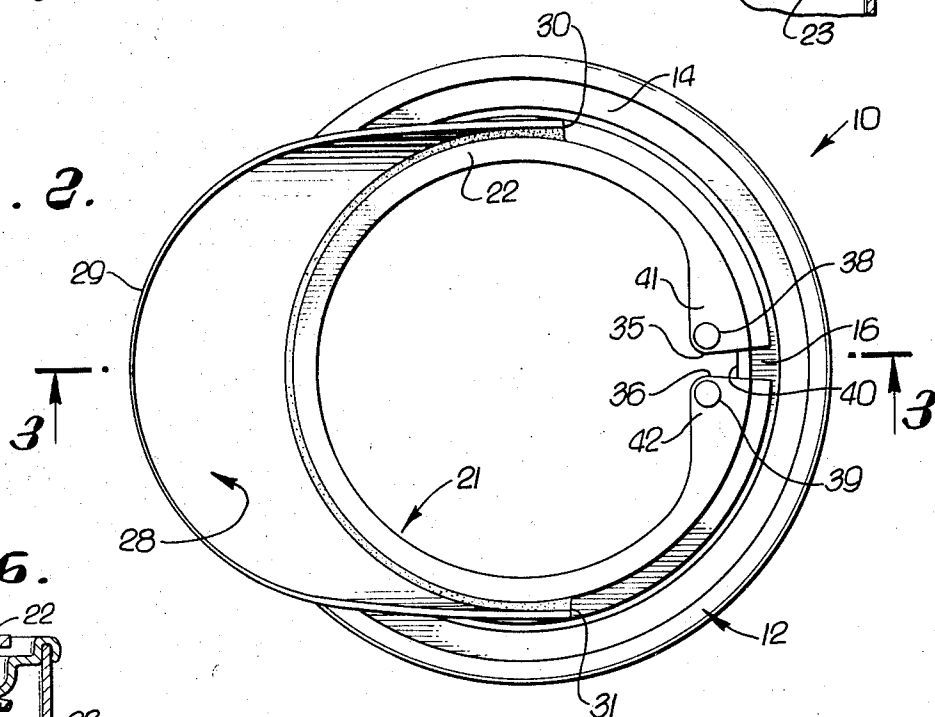
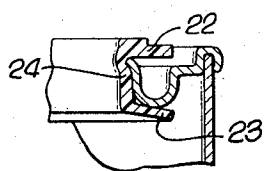


FIG. 6.



POURING SPOUT FOR CANS

BACKGROUND OF THE INVENTION

The conventional paint can embodies a rim formation which includes an annular channel opening upwardly for the reception of a downwardly extending apron on the can top. In the course of pouring paint from the can, the flow path crosses the open channel, with a resulting deposit of paint in the channel. It is a common practice to pour paint from a can into another can or receptacle for mixing the paint, or to pour a desired quantity of paint into a receptacle more convenient for reception of a brush, or a roller, or to fill a sprayer.

In any event, the paint lodging in the open channel of the can presents a messy situation, and is especially objectionable if the can is to be resealed by replacement of the top. The bulk of the paint in the channel can be collected by a brush, but the area is smeared and a film of paint remains for a clean up with a cloth moistened with paint thinner.

We are not aware of any alternative or of any prior devices which can be utilized with a can of the paint can type, enabling a convenient pouring to be accomplished while retaining the rim in clean condition.

SUMMARY OF THE INVENTION

The present invention is directed to a solution of the problems outlined above. We utilize an annular base in the form of a channel structure opening horizontally outward. The structure includes parallel upper and lower flanges joined by a vertical wall, in the general plan form of a C ring, split at the rear, with a lip element extending radially outward at the front. The structure is of a resilient material. The base in repose is expanded to a diametric dimension greater than the parts of the can to be engaged. For installing, it is contracted and slipped into the opening in the can. Upon release, the channel structure of the base fits against one or more adjacent surfaces of the can channel, and forms a seal therewith.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the upper portion of a can with our pouring spout installed.

FIG. 2 is a top plan view of the same, somewhat enlarged.

FIG. 3 is a section taken on the line 3—3 of FIG. 2.

FIGS. 4, 5 and 6 are fragmentary sections illustrating different assembly conditions.

FIRST EMBODIMENT OF THE INVENTION

The can 10 shown is a conventional paint can comprising a vertical annular wall 11 ordinarily made of sheet metal. It has a rim formation 12 permanently attached to the upper end of the can wall.

This rim formation includes an annular depressed shoulder 13, within which is an annular U-shaped box or channel formed by parallel walls 14 and 15, joined by a rounded bottom 16. This channel is for the reception of a can lid (not shown).

Our pouring spout generally indicated at 20 includes an annular base 21 comprising an upper flange 22, a lower flange 23 parallel thereto, the flanges being joined by a vertical wall 24.

A pouring lip 28 extends radially out from the base with a dished upward incline terminating in a relatively sharp edge 29. The lip is generated at opposite portions of the base as shown at 30 and 31, preferably at least 180° apart, and curves with the base around its junction therewith. A substantial arc of the can is thus circumscribed so that even if it be tipped at a sharp angle for pouring, the lip will confine the paint. The lip should project radially outside the can.

The lip as illustrated is mounted on a ledge 32 of the upper flange 22, but could be formed as a homogeneous part of the base element.

The base is split diametrically opposite the center of the lip as seen at its ends 35 and 36. This provides a C ring effect.

The base and the lip function as an integral unit.

In making them, a material which is resilient should be employed. Polyethelene is especially suited for the purpose, as paint or other liquid will not stick to it. Teflon or rubber is also satisfactory. Polyvinyl chloride can be used, but certain paints might stick to it, and some chemicals might attack it. Spring metal might be employed, but would present some problems. Mention of these materials is by way of example only, and not of limitation.

We provide studs 38 and 39 at the free ends of the base which may be grasped to pull these ends together or inwardly and thus contract the base for installing it in the can or removing it. Because of the stress imposed during this manipulation, we prefer to reinforce the end portions by an increased thickness as shown at 41 and 42. The studs may be formed integral with the base, or may be threaded in, or cemented in shallow bores or sockets.

The structural design of our device in relation to a can is such that when the base is contracted and installed in the rim area of the can it expands tightly against adjacent surfaces of the can rim structure. One condition of assembly is illustrated in FIG. 3. The upper flange 22 overlies the edge 40 of the can flange wall 15, and makes a tight seal therewith at the intersection of the flange 22 and the vertical wall 24. The lower flange of the base makes close contact with the bottom wall 16 of the can rim channel.

The adjacent ends 35 and 36 of the base are illustrated as close together. With this relationship it may be necessary when installing or removing the spout to twist one or both of the ends inwardly in order to attain clearance for the base to be positioned. If the ends are spaced farther apart, the contraction could be accomplished simply by pulling them together. Instead of the lugs 38 and 39, small holes could be similarly located, and a spanner type of spring could be inserted and squeezed to draw the ends toward each other.

It should be apparent that our pour spout is easily installed or removed. Demonstration has shown that it is leak proof. Not only can the flow be conveniently directed, but the channel in the can rim area remains free of paint. The spout can be used repeatedly, and transferred from a can of paint of one color to another. If made of the proper material, paint drains from it; in any event a minimum of cleaning or wiping off is sufficient. While it can be made in different sizes for different cans, the quart size is probably the most popular, and the gallon size especially useful.

The description has dealt with paint cans and the handling of paint. As presently advised, this is probably

the principal use. The device is adaptable, however, to various applications where liquids are packaged in cans of generally similar configuration in the rim area.

In any cans where the interned edge 40 is not present, the pour spout base wall 24 of FIG. 3 will expand into close contact with the wall 15 of the can channel, and our purpose still be achieved.

ALTERNATIVE EMBODIMENTS OF THE INVENTION

Our pouring spout is adaptable to use with cans wherein the design and dimensions of the rim formation may differ.

FIG. 4 shows the assembly of the pouring spout with a can in which the upwardly opening channel of the rim formation is shallower than the vertical spacing of the pouring spout flanges 22 and 23. In this case the vertical wall 24 of the base 21 seals against the vertical wall 15 of the can. This is effective even though there is no contact with the top or bottom surfaces of the can channel. In this view the resiliency of the pouring spout material causes it to conform to the inner wall of the can channel even if the interned edge 40 is present.

FIG. 5 illustrates a situation in which the channel of the rim formation of the can is deeper than the vertical spacing of the pouring spout flanges 22 and 23. Here, a seal will occur between the lower surface of the pouring spout flange 22 and the upper portion of the can wall part 15, being forced into contact by cam action of the rounded bottom of the can channel. The relationship may be such that contact is lacking between adjacent vertical walls of pouring spout and can.

FIG. 6 illustrates that under the general conditions of FIG. 5 the resiliency of the pouring spout flange may result in expansion affording contact of the pouring spout flange with both the upper portion of the can rim formation and the vertical surface thereof.

Although we have herein shown and described our invention in what we have conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of the invention.

What we claim is:

1. A pouring spout for cans which embody a rim area structure comprising an annular channel of generally U-shaped section open at the top, formed of radially spaced outer and inner vertical walls joined by a bottom wall, the pouring spout comprising a base element of a generally C ring plan and of a generally U-shaped cross section opening horizontally outward, embodying generally parallel upper and lower flanges joined by an

inner vertical annular wall, the upper and lower flanges being of sufficient radial dimensions and spaced apart a distance adapting them to engage the top of the inner vertical wall of the can channel and the bottom wall of the latter respectively, the base element being formed of a resilient material and the annular wall thereof having a diameter when in repose greater than the diameter of the inner wall of the can channel and contractable to provide clearance for the base element to be inserted and positioned for engagement with the can channel whereby upon release and expansion the base element will engage the can channel at the top of the inner wall and the bottom thereof, thereby sealing off the interior of the can from the external portion of the rim area, and a dished lip on the base element projecting radially outward beyond the rim area of the can, the lip being generated at opposite points on the base element separated by at least 180° and inclining from the points of generation in uninterrupted curves which merge at their peak.

2. A pouring spout for cans which embody a rim area structure comprising an annular channel of generally U-shaped section open at the top, formed of radially spaced outer and inner vertical walls joined by a bottom wall, the pouring spout comprising a base element of a generally C ring plan and of a generally U-shaped cross section opening horizontally outward, embodying generally parallel upper and lower flanges joined by an inner vertical annular wall, the base element being formed of a resilient material and the annular wall thereof having a diameter when in repose greater than the diameter of the inner wall of the can channel and contractable to provide clearance for the base element to be inserted and positioned for engagement with the can channel whereby upon release and expansion an annular surface portion of the base element will engage an annular surface portion of the can channel, thereby sealing off the interior of the can from the external portion of the rim area, and a dished lip on the base element projecting radially outward beyond the rim area of the can, the C ring plan of the base element embodying separated adjacent ends generally diametrically opposite the lip, and means disposed on the base element in the region of the adjacent ends which may be manually operated to contract the base element for installing or removing the pouring spout in or from the can.

3. A pouring spout as defined in claim 2 in which the base element includes reinforcement in the region of each of the adjacent ends, and the means to be manually operated are located on the reinforcements.

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