United States Patent

[11] 3,572,540

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[54] **CAN CLOSURE**
4 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **220/42,** 220/60
[51] **Int. Cl.** **B65d 41/00** B65d 43/10
[50] **Field of Search** 220/60, 29, 42; 215/41

[56] **References Cited**

UNITED STATES PATENTS

3,200,986	8/1964	LaGrutta	220/60
3,250,428	3/1964	Rieke	220/60
3,289,881	3/1964	Ganung	220/60

FOREIGN PATENTS

1,047,110	12/1955	Germany	

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ABSTRACT: A paint can is provided with a primary metal friction closure which is formed with an opening which permits pigments, etc. to be added to the paint without requiring removal of the primary closure. The metal of the primary closure around the opening is curled upwardly and outwardly to prevent its corrodible raw edge from coming into contact with the paint, and the opening is sealed by a removable auxiliary plastic snap-on plug having a flange which is recessed into the surface of the adjacent portion of the primary closure to shield it against inadvertent snagging and loosening during shipment and storage. The auxiliary plug is made of a translucent or transparent material to permit the consumer to visually observe the color of the paint within the can.

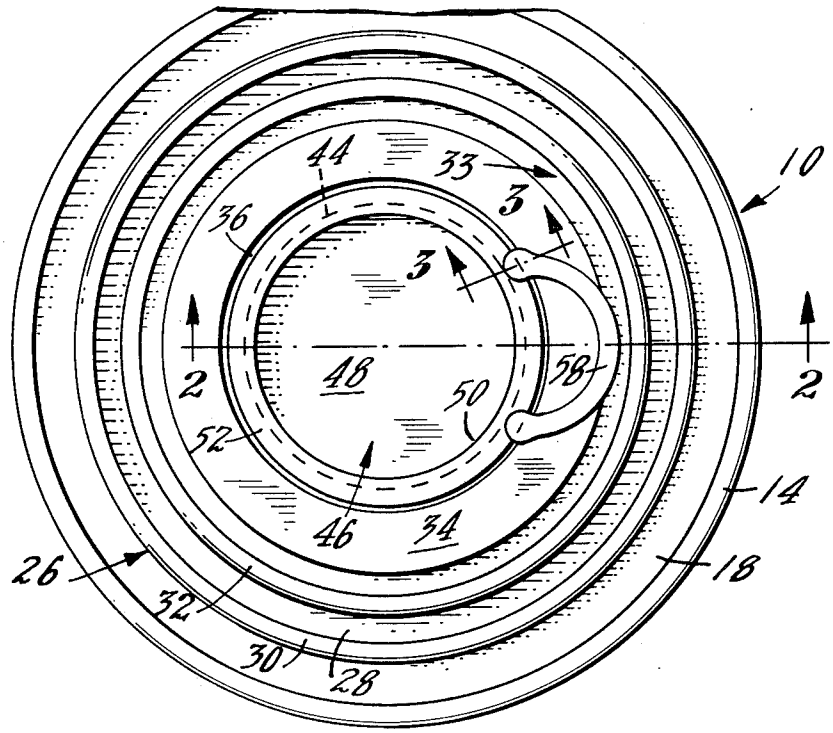


Fig. 1

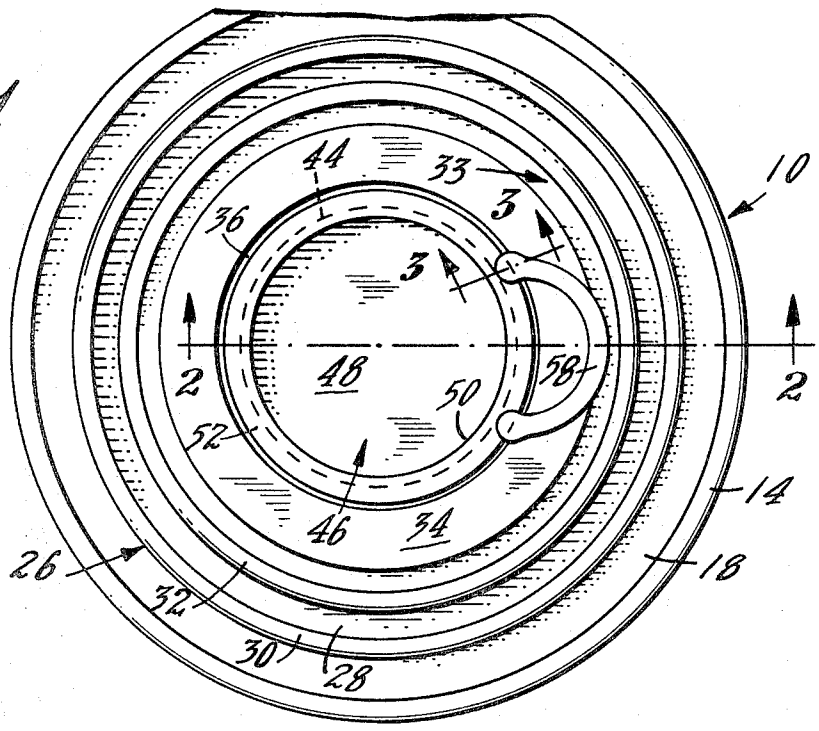


Fig. 2

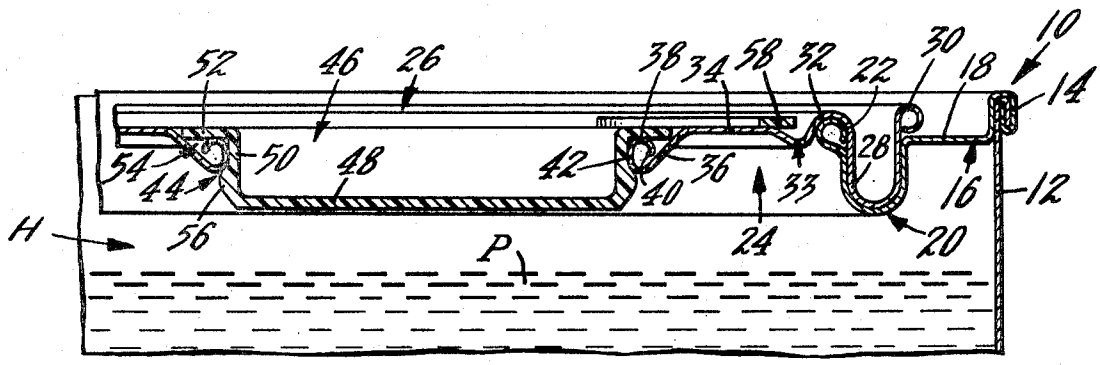
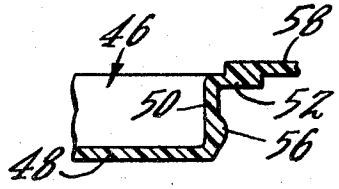


Fig. 3



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CAN CLOSURE

BACKGROUND OF THE INVENTION

It is a growing practice in the paint industry to pack a so-called "basic-white" paint in cans, and to have the paint dealer add a pigment to the paint at the time of sale in order to obtain the color desired by the customer. This practice has the virtue of enabling the dealer to provide a wide variety of colors, while at the same time permitting him to carry a much smaller inventory of paint than would be required were he to carry a full stock of precolored paints.

One of the problems encountered by dealers in adding pigments at the time of sale is that if no special provision is made in the container to permit him to do so easily and conveniently, he is required to remove the main friction closure in order to gain access to the contents, and this frequently causes distortion of the closure and/or soiling of the closure seat by the paint.

It has heretofore been proposed that a metal auxiliary closure be provided in the main closure to provide access to the paint, as in U.S. Pat. No. 2,719,628, or that a plastic auxiliary closure be provided as disclosed in U.S. Pat. No. 3,289,881. These heretofore proposed constructions are objectionable because of the fact that the auxiliary plugs are not shielded against inadvertent snagging during handling and storage, with the consequent possibility of inadvertent removal or loosening, by the fact that the raw metal edge which defines the auxiliary opening faces into the interior of the can and thus may be contacted and corroded by a water based paint, and by the fact that they do not permit visual observation of the color of the paint in the can.

The present invention overcomes this problem by providing a construction wherein the metal which defines the opening is curled upwardly away from the interior of the can and the plug is made of a translucent or transparent plastic and is recessed into the metal closure in order to shield it from inadvertent disturbance.

An object of the invention therefore is to provide an improved paint can which readily and easily permits the addition of pigments to paints without requiring removal of the main closure and without deleteriously affecting the paint or the appearance of the package, and which permits inspection of the product without requiring opening of the can.

SUMMARY OF THE INVENTION

A metal paint can closure is formed with a central opening which is defined by a curled edge. The edge is curled upwardly and outwardly to conceal its raw edge from the corroding action of the paint as well as from the view of the consumer, and the upper edge of the curl which forms the seat for the flange of plastic auxiliary closure which snaps into the opening is recessed below the surrounding panel of the metal closure in order to permit the flange to lie flush with such panel and thus be shielded from inadvertent snagging. The auxiliary closure is provided with a handle, which extends from the top surface of the closure flange and lies flatly against the top surface of the metal closure, and is made of a transparent or translucent material to permit the consumer to determine the color of the paint in the can. This latter feature is desirable since the can label will normally give no indication of the color of pigment which has been added.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of the preferred embodiment of the invention; and

FIGS. 2 and 3 are vertical sectional details, on an enlarged scale, taken substantially along the lines 2–2 and 3–3, respectively, in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in the drawings, the preferred embodiment of the instant invention comprises a metal paint can 10 formed with a tubular metal body 12 which has its bottom end sealed in any conventional manner by a bottom end closure (not shown) and which contains a product such as a base-white water based paint P. A suitable headspace H is provided in order to permit the addition of a additive such as a pigment (not shown).

The upper end of the body 12 has attached to it, in a double seam 14, a metal ring 16 which is formed with an annular flat wall 1 which at its inner edge merges into a downwardly extending U-shaped friction channel 20. The inner edge of the channel 20 is formed with an edge curl 22 which surrounds the main opening 24 of the can 10.

The opening 24 is closed by a primary, metal friction plug closure 26 which is formed with a downwardly extending U-shaped bead 28 which frictionally engages with the channel 20. The outer leg of the bead 28 terminates in an edge curl 30 which is spaced above the wall 18 to permit the insertion therebetween of a pry-off tool (not shown), while the inner leg of the bead merges into small bead 32 which extends around the ring curl 22 and then merges into a groove 33 which in turn merges into a flat annular central panel 34.

From the inner edge of the central panel 34, the closure 26 extends downwardly in an inclined wall 36, and then is bent upwardly and outwardly to form an open curl 38 which terminates in a downwardly facing raw edge 40. The inner portion of the curl 38 includes a narrow straight cylindrical friction wall 42 which defines an auxiliary opening 44 which is centrally located in the main closure 26.

The opening 44 is sealed by a small auxiliary friction plug 46 which preferably is made of a suitable flexible thermoplastic such as polyethylene, polypropylene, and the like and is translucent or transparent to permit visual inspection of the color of the product P. The auxiliary plug 46 is formed with a bottom wall 48, an annular side wall 50 which frictionally engages the friction wall 42 of the curl 38, and a narrow horizontal flange 52 which rests upon and contacts the top of the curl 38.

As seen in FIG. 2, the top of the curl 38 is spaced below the plane of the upper surface of the surrounding panel 34 to a depth which is about the thickness of the flange 52. As a result of this, the flange 52 is recessed in such manner that its top surface is substantially coplanar with the top surface of the surrounding panel 34, thereby minimizing the possibility that the flange 52 will be snagged by a superposed can or other object while it is stored on a shelf in the store. If this should happen, the auxiliary plug 46 might be forcibly torn out of the opening 44 or moved to a nonsealing position.

Preferably, the flange 52 is of such width that it substantially seals off the annular recess 54 which surrounds the curl 38 to prevent entry of dust or other matter thereinto.

The auxiliary closure 46 is provided with a bead 56 which snaps beneath the curl 38 to hold the closure 46 securely in place with sufficient force to prevent it from being unseated by the weight of the product P should the filled can 10 ever be inverted, and to provide a tight reclosure fit after the closure 46 has been initially opened to permit the introduction of a colorant, pigment, or other additive into the interior of the can 10.

In order to overcome the tight fit which is provided by the friction walls 42, 50 and the bead 56 and to facilitate removal of the closure 46, a small semicircular loop handle 58 is provided. The handle 58 is formed integral with the auxiliary closure 46 and extends laterally from the top surface of the flange 52 and lies flatly against the surface of the panel 34 with its outer end overlying the groove 33 and its upper surface preferably disposed in a plane which is below the plane of the top of the plug bead 32. This construction facilitates easy access to the handle 58, while providing some protection against inadvertent snagging.

It will thus be seen that the dealer, upon receiving the can filled with a base-white paint P, can readily remove the auxiliary closure 50, add a pigment to the headspace H, and reseal the can by reseating the closure 50 in place on the curl 38. Thereafter the package may readily be shaken to distribute

the pigment in the paint P, and the color of the pigmented paint may be easily ascertained by visual inspection through the wall **48** of the translucent or transparent closure **50**.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description and it will be apparent that various changes may be made in the form, construction, and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A friction plug closure, comprising friction means for securing said closure to a container, a central panel, an opening formed in said panel, said opening being defined by an upwardly and outwardly extending curl having an annular friction wall, and an auxiliary flexible plastic friction closure seatable on said curl and frictionally engageable against said friction wall to close said opening, said auxiliary closure being provided with a peripheral flange which seats on said curl, said curl being recessed into said panel to a depth substantially equal to the thickness of said flange so that the top surfaces of said flange and said panel are substantially coplanar.

2. The closure of claim **1** wherein said auxiliary closure is transparent or translucent.

3. The closure of claim **2** wherein an integral handle extends laterally from the top surface of said flange and lies flatly on said panel.

4. The closure of claim **3**, wherein said auxiliary closure is provided with a bead which engages beneath the curl which defines said opening.