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CONTAINER RIM GUARD AND POURING DEVICE

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FIG. 1

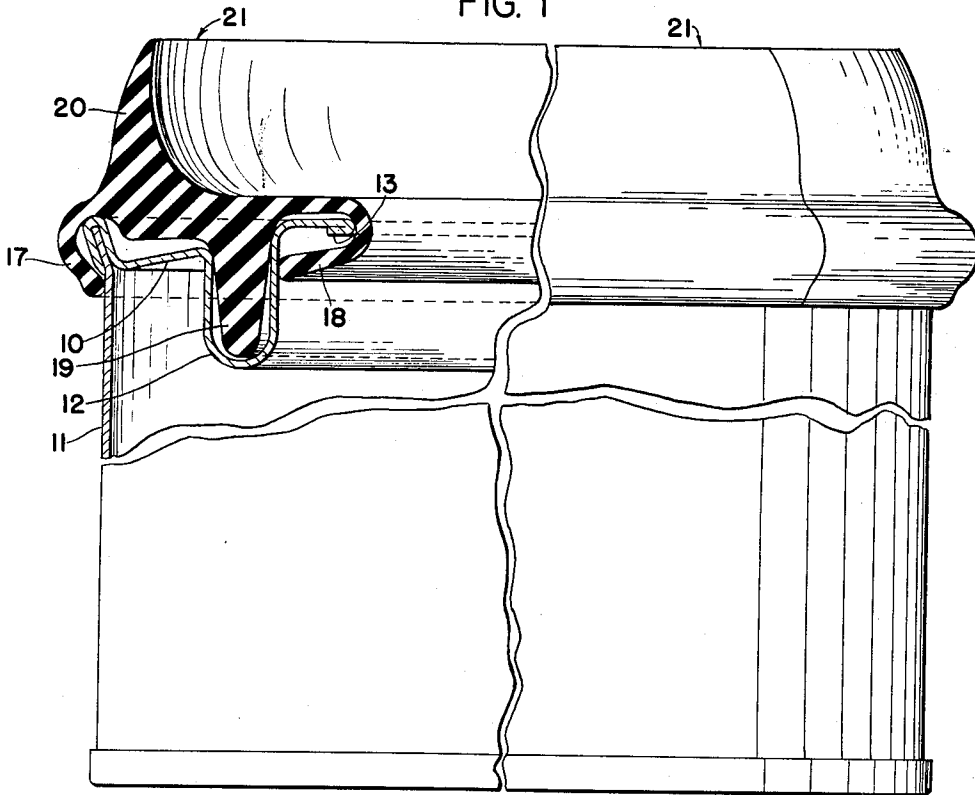


FIG. 2

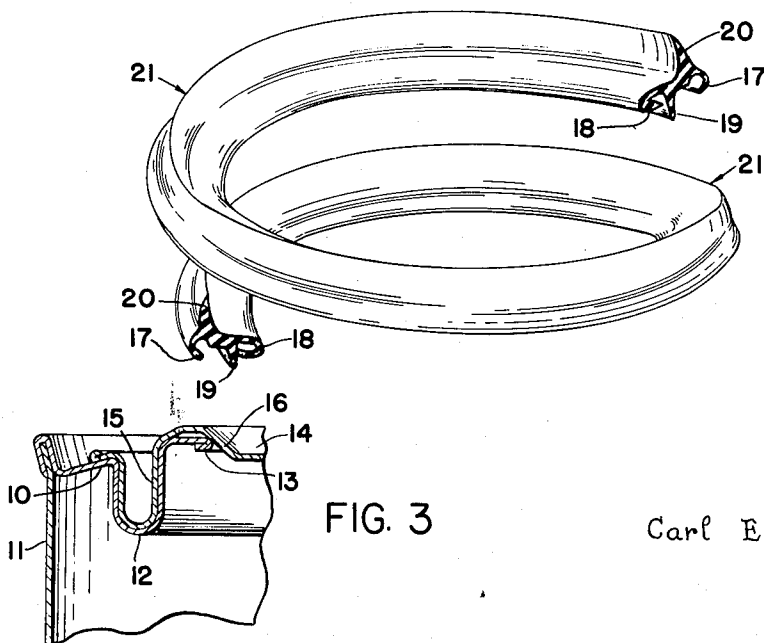


FIG. 3

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CONTAINER RIM GUARD AND POURING DEVICE

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7 Claims. (Cl. 222—570)

This invention relates to a container rim guard and provides a useful device for protecting the chime or grooved rim of paint cans or other similarly constructed containers having an axially extending annular groove formed in a flange at their mouth to receive a complementary flange on a cover or lid to provide effective sealing of the container. Such cans and lids are, of course, commonly used to store paint.

When the lid of such a container is removed the annular groove is exposed. Subsequent use of the contents of the container may result in some of the contents being deposited in the annular groove. In paint cans, for instance brush dipping, brush wiping, pouring, mixing and otherwise handling the paint frequently results in clogging the annular groove. When the lid is later put on poor sealing results so that the paint deteriorates in storage. Since containers of from one pint to twenty gallons capacity are widely used to store expensive paints and dyes used in commercial processes such as display device or fabric painting or dyeing and the cost of such paints and dyes is of the order of twenty five dollars per gallon, deterioration in storage can result in serious loss. Furthermore, efficient handling and re-use of the stored paint is impaired because of the difficulty of removing lids which have become stuck fast by the drying out of the paint in the annular groove.

The desirability of protecting the container chime has been previously recognized and various rim covers or protecting rings have been proposed. All these proposals, however, share two objectionable features. In the first place it is necessary to make, store, and handle rim covers of various diameters for containers of various sizes. Secondly, the effective sealing of the container rim groove against leakage during pouring requires that the protecting rim itself must be kept reasonably clean while not in use. Carefully storing or replacing small quantities of such protecting rings in varying sizes is, of course, inconvenient and costly. Accordingly, proposed devices have heretofore proved impractical, especially for paint handling projects of any size and variety.

The present invention has as its object the provision of a resilient spiral strip, preferably extruded, which can be cut to varying lengths for varying diameters of containers and which can adapt itself to give effective sealing of container rims of varying width and depth.

A further object of the invention is to provide a container rim guard which can be inexpensively made, conveniently handled and cheaply replaced.

On the drawings:

Figure 1 is a shattered front elevation, partly in section, of a paint can with the sealing strip in place.

Figure 2 is a perspective view of a length of sealing strip.

Figure 3 is section view of reduced scale taken through the can at the same place as the partial section in Figure 1 and showing the paint can cover in place.

In a typical paint can (Figure 3) a flange 10 is seamed or fixed to the container wall 11. Formed in the flange

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10 is an annular groove 12 and rim 13. The paint can lid 14 has a flange 15 and shoulder 16 which, when the lid is on the can, cooperate respectively with groove 12 and rim 13 to provide sealing of the paint from the outside air. When the lid is off the can groove 12 and rim 13 are exposed to splashing and flowing of the paint resulting from dipping, stirring, mixing, brush wiping, and pouring. Paint deposits itself in groove 12 and on rim 13. Deposits of paint on rim 13 are troublesome because they subsequently prevent a good seal between this rim and the shoulder 16 of the can lid. Deposits of paint in groove 12 are particularly to be avoided because they make it impossible to seat the lid flange 15 firmly in groove 12 which precludes an effective seal either between flange 15 and groove 12 or between shoulder 16 and rim 13.

To fully protect the groove 12 and rim 13 a guard strip 21 is provided. This guard strip is shown in position in Figure 1. The strip is made of resilient soft rubber or plastic material. The lip 17 grips the seam between the wall 11 and the flange 10. The edge of the lip 17 bears against the wall 11. The lip 18 grips the rim 13 and the tip of this lip rides against the outside wall of the groove 12. A slightly tapered ridge 19 extends into the groove 12 and tends to wedge against both upper edges of the groove. The upper flange 20 presents a gently curved profile and is gently tapered toward its top in radial vertical cross-section and has a relatively sharp upper edge to facilitate brush wiping and pouring and to prevent dripping when the can is turned upright after pouring. As seen in Figure 1, this sharp upper edge is formed by the intersection of two approximately arcuate surfaces, the convex side of each surface facing in the same direction. Since the lips 17 and 18 are flexible, the guard strip can adapt itself to cans of different sizes and of varying container flange or chime proportions, the tapered surfaces of the ridge 19 enabling it to penetrate to different extents container flange grooves of varying dimensions. In the case of a large container flange groove, sealing of the groove may be effected by the base of the ridge 19 while if the container flange groove is very small the sealing may occur almost at the top of the ridge 19. In the latter case the greater part of the ridge 19 rides above rather than within the container flange groove. In the illustrative example shown in Figure 1, the area of the ridge 19 almost adjacent its base is providing the seal.

Varying guard strip lengths are needed, of course, for containers having different diameters. A guard strip coil, which can be of any length convenient for storage and handling, is shown in Figure 2. Desired coil lengths can be cut off as needed when cans of various diameters are newly opened.

A plastic strip can be conveniently manufactured by extruding the plastic through a die having a profile identical with the cross section desired. The coiling can be obtained by feeding the material into the die from a direction not normal to the plane of the die. The strip will curl away from the die in the same plane in which is formed the most acute angle between the plane of the die and the path of feeding.

When a can is newly opened the requisite length of guard strip is cut from the coil and is stretched over the container rim. After working with the paint, the strip is removed and the container cover replaced for storage. If later when the paint is to be re-used, it is discovered that the piece of strip originally cut off is either dirty or lost, it is an easy matter to cut off another piece of the requisite length and use it as a replacement. A single coil gives a reserve supply of guards for containers of various sizes and is far more convenient to store and handle than sets of old type guards of various sizes.

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From the foregoing example it should be apparent that further modifications and variations may be made by those skilled in the art without departing from the scope of the invention as defined in the following claims.

What is claimed is:

1. A paint container having a closed end, a cylindrical sidewall and an open end, a flange fixed to the upper rim of said sidewall and encircling said open end, said flange having an annular groove formed therein and an inner rim, a flexible strip overlying said flange throughout its circumference, said strip having a first lip in gripping engagement with said sidewall and a second lip in gripping engagement with said inner rim, said strip also having a lower flange depending into wedging engagement with said groove, all of said elements of said strip being integral.

2. A device as defined in claim 1 in which said strip has an upper flange gently tapered toward its top in radial vertical cross-section to facilitate pouring from said container.

3. A device as defined in claim 1 in which the base of said first lip extends substantially radially outwardly with respect to said container but the edge thereof turns radially inwardly and the base of said second lip extends substantially radially inwardly with respect to said container but the edge thereof turns radially outwardly.

4. A guard for a container rim comprising a normally curved integral strip of flexible material, said strip having oppositely disposed lips and a depending flange intermediate said lips, the base of one of said lips extending substantially radially outwardly with respect to the curvature of said strip but the edge thereof turning radially inward-

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ly, the base of the other of said lips extending substantially radially inwardly with respect to the curvature of said strip but the edge thereof turning radially outwardly.

5. A guard for a container rim comprising a normally curved integral strip of flexible material, said strip having a substantially constant cross-section, said strip having oppositely disposed re-entrant gripping lips and a depending flange intermediate said gripping lips, one of said lips extending radially outwardly and the other of said lips extending radially inwardly with respect to the curvature of said strip.

6. A device as defined in claim 5 in which said strip has an upwardly extending sharply edged flange.

7. A guard for a container rim comprising a flexible strip having longitudinally extending oppositely disposed gripping lips and a depending longitudinally extending container rim groove engaging flange, the edges of said gripping lips normally curving inwardly toward each other and said groove engaging flange being downwardly tapered in cross-section, all of said elements of said strip being integral.

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