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R. A. SCHEUERMAN

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PROTECTIVE DOOR FOR CONTAINERS

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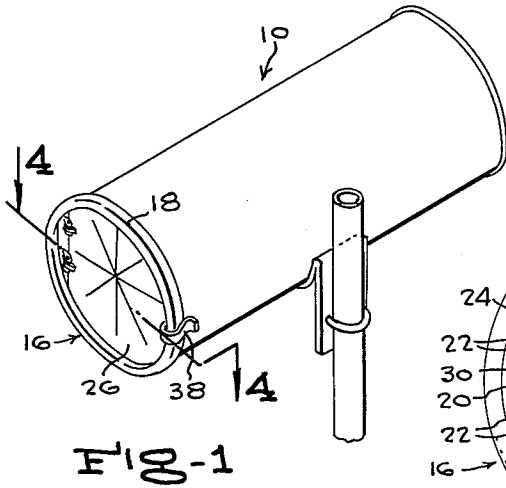


FIG-1

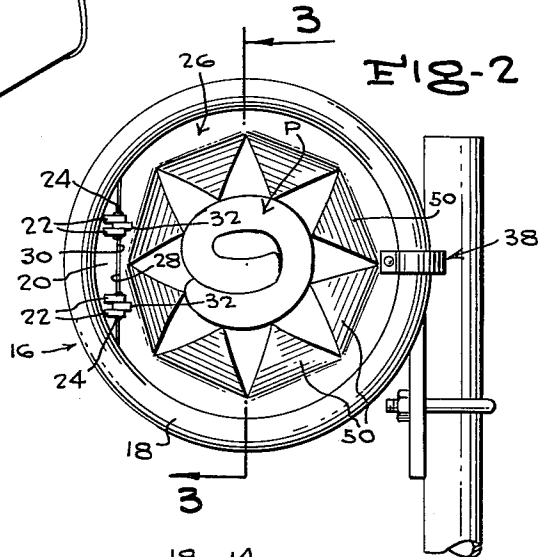


FIG-2

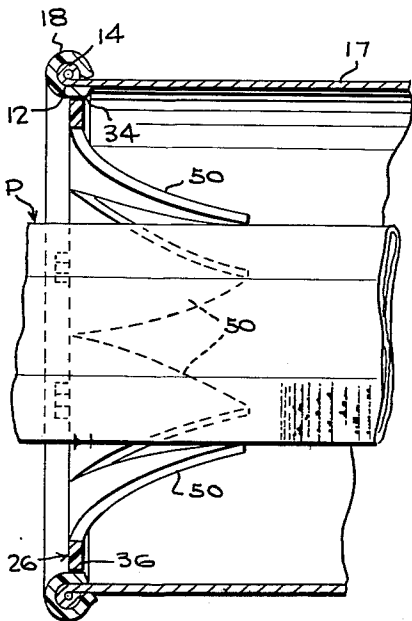


FIG-3

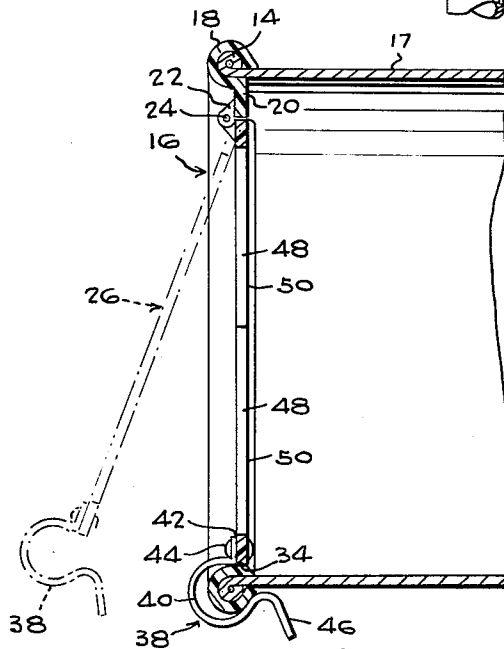


FIG-4

INVENTOR.
ROGER A. SCHEUERMAN
BY

McMorrow, Perman & Davidson
ATTORNEYS

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PROTECTIVE DOOR FOR CONTAINERS

Roger A. Scheuerman, 3187 Marvin Drive, Adrian, Mich.

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4 Claims. (Cl. 220-24)

This invention relates to improvements in protective closures for the openings of containers and the like, and more particularly to a novel protective and weatherproof door which is adapted to be moved to open position to provide unimpeded access to the interior of a container, such as an open-ended mail or newspaper box, but which, in its closed position, yields to provide limited access to the interior of the box for the insertion of mail or newspapers, and then returns to protective position.

The primary object of the invention is the provision of a simple, efficient, and inexpensive weatherproof protective door of the kind indicated, which is readily applicable to and removable from a container or the like.

Another object of the invention is the provision of a practical and universal protective door of the character indicated above which is devised to be installed on containers of either cylindrical or polygonal cross sections, either as a built-in feature thereof, or as an accessory to be applied and removed, at will.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a front perspective view of a newspaper or mail receiving box, equipped with a door of the present invention;

FIGURE 2 is an enlarged front end elevation of the container and door of FIGURE 1;

FIGURE 3 is a further enlarged fragmentary vertical longitudinal section taken on the line 3—3 of FIGURE 2, showing the door in closed position and yielding for the insertion of a rolled newspaper; and

FIGURE 4 is a horizontal longitudinal section, taken at right angles to FIGURE 3, showing the door in closed position in full lines, and in open position in phantom lines.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, a form of container, to which a cover of the invention is applicable, is shown as being a conventional newspaper and mail receiving box 10 of cylindrical form, having an open front or forward end 12, which is surrounded by a lateral annular rounded bead 14.

A door of the invention, generally designated 16, is adapted to be snapped over the bead 14 so as to close and cover the opening of the end 12. The box 10, here shown as having a plain cylindrical sidewall 17, could, instead, have an octagonal or hexagonal or other polygonal sidewall. Further, the door 16 could be, in a built-in version thereof, be permanently mounted on the box 10, in suitable manner.

The illustrated door 16, which is preferably made of molded plastic of substantially gauge, comprises an annular, rearwardly facing channel mounting rim 18 which is sufficiently flexible and resilient to provide for its being snapped over and secured on the bead 14 and engaged with the inner surface of the box sidewall. Preferably integral with and extending inwardly from the rim 18 is a segmental web or flange 20 having, on its forward or front side, vertically spaced pairs of hinged ears 22, through which hinge pins 24 extend. The door 16 further comprises a circular flat door panel 26 which has, at one side thereof, a chordal edge 28 which matches the chordal edge 30 of the web 20 and extends therealong, as shown

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in FIGURE 2. Hinge ears 32, on the forward or front side of the door panel 26, extend beyond the chordal edge 28 and engage between related hinge ears 22 and are traversed by the hinge pins 24, whereby the door panel 26 is swingable forwardly from a closed position, shown in full lines in FIGURE 4, to an open position shown therein in phantom lines, so as to provide full and unimpeded access to the interior of the box 10, as for removing rolled newspapers and/or mail therefrom.

The door panel 26 is sufficiently large in diameter that, in its closed position, its peripheral edge 34 makes sufficient retaining frictional contact with the inner surface 36 of the mounting rim 18 to keep the door panel closed. Alternately, the door panel 26 can be releasably retained in closed position by means of a catch 38 which engages over the mounting rim 18, and which serves as a handle for opening and closing the door panel.

The illustrated catch 38 comprises a resilient loop 40 to frictionally receive the mounting rim 18, having on one end thereof, a diametrical attaching lug 42, suitably affixed to the forward side of the door panel 26, as indicated at 44, and a lateral handle lug 46 on its other end.

It will also be understood that hinge means for hinging the door panel 26 on the mounting rim 18, other than that illustrated herein, are contemplated by the present invention, such as a flexible integral connector of the door panel with the web or flange 20.

The door panel 26 has provision for inserting such as a rolled newspaper into the box 10, through the door panel, without requiring opening of the door panel 26 and exposing the interior of the box to rain, snow and wind. For this purpose, the door panel 26 is formed with circumferentially spaced, slits 48, which intersect at the center of the door panel, and define therebetween triangular flaps 50 which are flexible and resilient. When not stressed and flexed inwardly or rearwardly, by pressure exerted thereon, the flaps 50 are in coplanar, touching or overlapping relationship, so that rain, snow and wind are excluded from the interior of the box 10. For insertion of a rolled newspaper P or mail into the box 10, the newspaper and/or mail are simply pressed endwise against the flaps 50, with sufficient force to spread the flaps rearwardly, and away from each other, and pass the newspaper into the box behind the door panel and permit the flaps 50 to resume their closed positions.

Although there have been shown and described herein preferred forms of the invention, it is to be understood that the invention is not necessarily confined thereto, and that any change or changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claims appended hereto.

What is claimed is:

1. In combination, a container having a sidewall and an open end, an external bead extending around said open end, a weatherproof door comprising a channel mounting rim removably engaged over said bead, said rim having an opening, a door panel hinged at one side to said rim and extending across the opening of the rim, said door panel having normally closed and engaged flexible flap means defining opening means through the door panel.

2. In combination, a container having a sidewall and an open end, an external bead extending around said open end, a weatherproof door comprising a channel mounting rim removably engaged over said bead, said rim having an opening, a door panel hinged at one side to said rim and extending across the opening of the rim, said door panel having normally closed and engaged flexible flap means defining opening means through the door panel, and hinge means hinging the door panel to the inward side of the rim at a location inwardly of the container sidewall.

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3. A container having a sidewall and an open end, an external bead on the sidewall extending around said open end, a flexible channel rim removably embracing and extending around said bead, said rim having an opening, a door panel extending across and closing the opening of the rim, a door panel having normally closed and engaged flexible flap means defining opening means through the door panel, hinge means connecting the door panel to the rim at one side of the panel, and a spring catch on the panel at the other side of the panel and releasably embracing the channel rim.

4. A container having a sidewall and an open end, a lateral bead extending around the sidewall at said open end, a flexible channel rim extending around and removably embracing said bead, said channel rim having an opening and having an inner wall engaging the container sidewall, a relatively narrow chordal flange on and extending inwardly from said inner wall and having a free edge,

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a door panel extending across and closing the opening of the rim defined by the free edge of the flange and the remainder of the rim, said door panel having normally closed and engaged flexible flap means defining opening means through the door panel, and hinge means hinging the door on said flange at its free edge.

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