Sept. 10, 1935. T. BAILEY 2,014,158

DISPENSING DEVICE

Filed Dec. 28, 1934

Fig. 1.

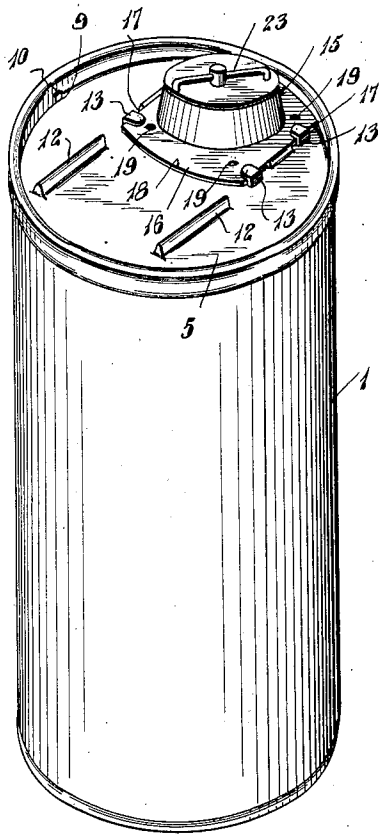


Fig. 3.

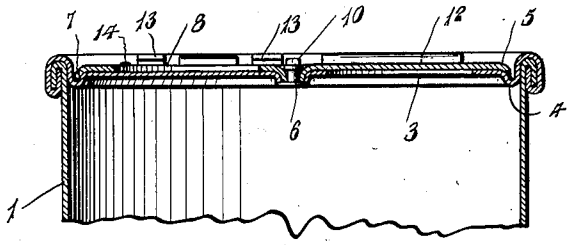


Fig. 4.

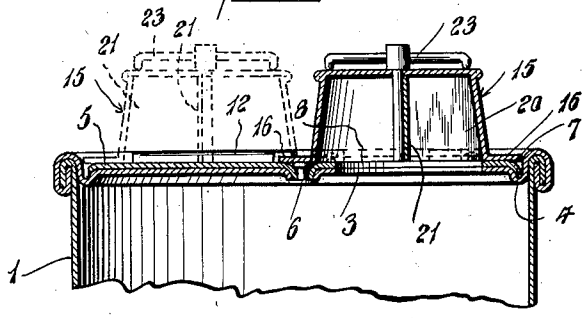


Fig. 5.

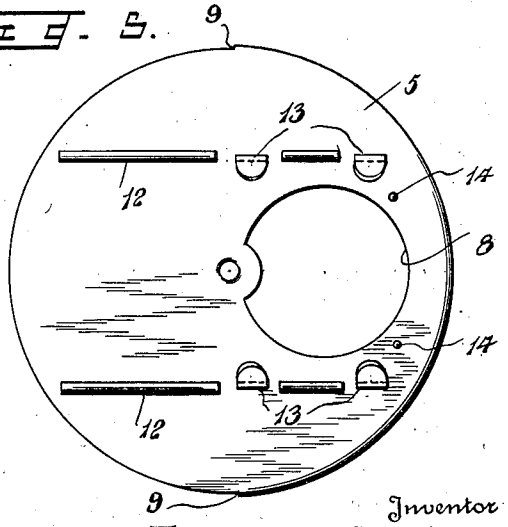
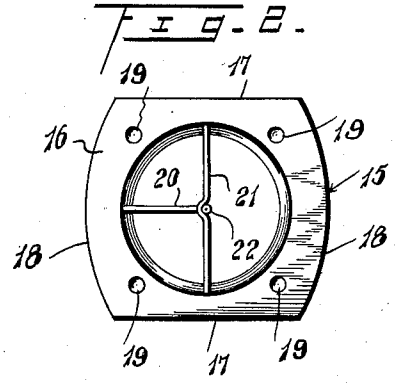


Fig. 2.



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UNITED STATES PATENT OFFICE

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DISPENSING DEVICE

Theodore Bailey, New York, N. Y.

Application December 28, 1934, Serial No. 759,592

6 Claims. (Cl. 221—95)

This invention is directed to a dispensing device arranged to cooperate with a can or like body holding the material in bulk, the dispensing device being movable to a position to permit discharge of the contents of the can into a receiver or to a position to cut off the receiver from the can.

The primary object of the present invention is the provision of a receiver to be slidably and removably connected to a cut-off plate rotatably mounted at one end of the can, with the receiver of any predetermined bulk and provided with means whereby the material in the receiver is divided into preselected divisions, any one or more of which may be dispensed.

A further object of the present invention is the provision of specific means for insuring accurate cooperation of the receiver with the cut-off plate to insure delivery of the material from the can into the receiver and to permit convenient removal of the receiver when desired with the contained material for dispensing.

The invention is illustrated in the accompanying drawing, in which:

Figure 1 is a perspective view of the can with the receiver in place.

Figure 2 is a bottom plan view of the receiver.

Figure 3 is a section through the end wall of the can and the cooperating cut-off plate, showing the plate in cut-off relation to the can wall opening.

Figure 4 is a similar view showing the cut-off plate in dispensing relation with the opening in the can wall.

Figure 5 is a plan view of the cut-off plate, showing particularly the means for guiding and temporarily holding the receiver in place.

The present invention is illustrated in connection with a can 1 having a plain end wall 2, although it is to be understood in this connection that the showing of a can is merely illustrative of a suitable casing or body for holding material in bulk. The particular end wall 2 is formed with an opening 3 and beyond the opening and concentric with the wall of the can there is formed a depressed channel 4.

A cut-off plate 5 is rotatably mounted through the medium of a central pivot 6 fixed in the end wall 2, the relation being such that there is intimate substantially non-leaking contact between the adjacent surfaces of the cut-off plate and can wall. The edge of the cut-off plate is deflected at 7 to fit into the channel 4, thereby further preventing any material which might find its way between the end wall of the can and the cut-off plate from delivery beyond the edge of the cut-off plate.

The cut-off plate is formed with an opening 8 which, in the rotative movements of the plate, may be brought into registry with the opening 3 in the end wall 2 or moved out of registry therewith, and the cut-off plate is formed with an edge projection 9 designed to cooperate with stops 10 and 11 on the can body to limit the positions of the cut-off plate to cause accurate registry of the openings 3 and 8 or the complete non-registry thereof.

The upper surface of the cut-off plate is provided with guide ribs 12 which may be integrally struck from the cut-off plate, which guide ribs are parallel to a diametric line through the opening 8 passing through the pivot 6. The ribs are spaced apart a distance exceeding the diameter of the opening 8 and extend from a point adjacent one edge of the cut-off plate toward but short of a diametric line passing through the pivot 6 at right angles to the ribs.

In advance of the ribs and in line therewith, the cut-off plate is provided on each side of the opening 8 with spaced spring lips 13, these lips being disposed in spaced relation and preferably in pairs on each side of the opening 8. Beyond the lips 13 remote from the ribs 12 and inwardly thereof, the cut-off plate is provided with slight projections 14 serving as a temporary locking means for the receiver, as will later appear.

The receiver comprises a cylindrical cup-shaped body 15, the open edge of which is provided with a lateral marginal flange 16 extending in all directions beyond the body. Two opposing edges 17 of this flange are parallel while the remaining edges 18 are curved in accordance with the curvature of the marginal edge of the cut-off plate. The distance between the parallel edges 17 of the flange 16 corresponds accurately to the distance between the guide ribs 12 and the diameter of the open end of the receiver body 15 corresponds to the diameter of the openings 3 and 8 in the can end wall 2 and cut-off plate 5.

The flange 16 is provided at appropriate points with depressions 19 which, when the receiver is in operative position, are designed to engage the projections 14 which, under the influence of the spring lips 13, temporarily secure the receiver in accurate registry with the opening 8 in the cut-off plate 5. As the edges 18 of the flange 16 are curved, it is, of course, apparent that the receiver may be placed in position with either of said edges in advance and in order to provide for the tempo-

rary locking, there are pairs of depressions 19 adjacent each curved edge 18 of the flange.

A division member is mounted within the receiver including a diametric plate 21, the length of which corresponds to the diameter of the body of the receiver and the depth of which is commensurate with the similar dimension of the body. The division member includes an additional plate 20 extending from the center and at right angles from the plate 21 in one direction only. This division member is mounted upon a pin 22 rotatably supported in the closed bottom of the receiver, to which pin an operating handle 23 is secured in order that the division member may be rotated at will to insure against sticking of the contents of such receiver when dispensing the entire contents of the receiver is desired.

Through the form of the division member, it is apparent that the plate 21 divides the receiver into two equal parts, so that the unobstructed side of said plate provides for the delivery of one-half of the contents of the receiver. The other plate 20 divides the receiver on the opposite portion of the plate 21 into halves or into one-quarter of the full contents of the receiver. Thus, if the receiver is designed, for example, to contain a volume equal to the contents of a teaspoon, the division member divides this volume into one-half of a teaspoonful or into two quarters of a teaspoonful.

Thus, by covering those portions of the receiver within the lines of the division plate which are not desired for dispensing at the moment, the remaining portion not covered will be delivered. This can be readily accomplished by covering the selected portions by the thumb or fingers and permitting the uncovered portion to be delivered. Thus, in the particular form illustrated, the receiver may be caused to deliver a teaspoonful, assuming this to be the full measure of the contents of the receiver, a half teaspoonful, or a quarter teaspoonful.

The receiver is positioned between the guide ribs 12 which, as stated, accurately receive the straight edges 17 of the receiver, and the receiver is moved toward the opening 3 of the cut-off plate beneath the spring lips 13 and until registry is had between the projections 14 and recesses 19. The cut-off plate, assumed to be in position with its opening 8 out of registry with the opening 3, is then turned until the appropriate projections on the cut-off plate and can edge interrupt further movement. In this position, the opening 3 in the can end wall 2, the opening 8 in the cut-off plate 5 and the open end of the receiver are in registry. The can is inverted, delivering its contents into the receiver in sufficient volume to fill the receiver. The cut-off plate and receiver are then rotated to the limit of the remaining stops, whereupon the opening 8 in the cut-off plate 5 is moved wholly beyond registry with the opening 3 in the can end wall 2 and the latter opening is completely closed by the cut-off plate. The receiver is then removed from its operative position and its contents dispensed as desired.

The improved construction provides an extremely simple and effective means for dispensing a predetermined volume from a bulk charge and of selecting a definite portion of such predetermined volume at will. The provision of the guiding means, spring lips and interlocking features of the cut-off plate and receiver provide against any possibility of the receiver being out of position to accurately register with the opening, for with the receiver placed between the ribs 12 and moved toward the opening 8 to the limit permitted, accurate and absolute registry for dispensing purposes is insured.

No restriction is intended by the reference herein to a can or to a predetermined limit of the volume of the receiver, it being understood that the bulk container may be of any material and in any form, so long as the requisites described are present and the receiver may be designed for any predetermined volume, as will be obvious.

What is claimed to be new is:

1. A dispensing unit including a bulk receiver having an end wall formed with an opening, a cut-off plate rotatably supported on the end wall and having an opening to be moved into registry with the end wall, guide ribs formed on the cut-off plate, spring lips carried by the cut-off plate immediately beyond the opening therein, and a receiver body having a flange of a width to accurately fit between the guide ribs and slide beneath the spring lips.

2. A dispensing unit including a bulk receiver having an end wall formed with an opening, a cut-off plate rotatably supported on the end wall and having an opening to be moved into registry with the end wall, guide ribs formed on the cut-off plate, spring lips carried by the cut-off plate immediately beyond the opening therein, a receiver body having a flange of a width to accurately fit between the guide ribs and slide beneath the spring lips, and cooperating means on the receiver and cut-off plate to interlock the receiver and cut-off plate in predetermined registry with the opening in the cut-off plate against casual movement of the receiver.

3. A dispensing unit including a bulk receiver having an end wall formed with an opening, a cut-off plate rotatably supported on the end wall and having an opening to be moved into registry with the end wall, guide ribs formed on the cut-off plate, spring lips carried by the cut-off plate immediately beyond the opening therein, and a receiver body having a flange of a width to accurately fit between the guide ribs and slide beneath the spring lips, the edges of the cut-off plate being laterally deflected to seat in an annular channel formed in the end wall, whereby to prevent the escape of material finding its way between the end wall and cut-off plate.

4. A dispensing unit including a bulk receiver having an end wall formed with an opening, a cut-off plate rotatably supported on the end wall and having an opening to be moved into registry with the end wall, guide ribs formed on the cut-off plate, spring lips carried by the cut-off plate immediately beyond the opening therein, a receiver body having a flange of a width to accurately fit between the guide ribs and slide beneath the spring lips, and cooperating limiting stops on the bulk container and cut-off plate to limit movement of the cut-off plate in one direction to a position to accurately register the openings in the end wall of the container and cut-off plate or to a position where such openings are completely out of registry.

5. A dispensing unit including a bulk receiver having an end wall formed with an opening, a cut-off plate rotatably supported on the end wall and having an opening to be moved into registry with the end wall, guide ribs formed on the cut-off plate, spring lips carried by the cut-off plate immediately beyond the opening therein, a receiver body having a flange of a width to accurately fit between the guide ribs and slide beneath the spring lips, and a division plate in the

receiver for dividing the volume of the receiver into predetermined divisions.

6. A dispensing unit including a bulk receiver having an end wall formed with an opening, a cut-off plate rotatably supported on the end wall and having an opening to be moved into registry with the end wall, guide ribs formed on the cut-off plate, spring lips carried by the cut-off plate immediately beyond the opening therein, a receiver body having a flange of a width to accurately fit between the guide ribs and slide beneath the spring lips, and a division plate in the receiver for dividing the volume of the receiver into predetermined divisions, said division plate being freely rotatable to serve as a scraper.

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