

J. F. CRAVEN.
 RECEPTACLE FOR CONTAINING AND DISCHARGING SEMISOLID AND PASTY SUBSTANCES.
 APPLICATION FILED APR. 22, 1911.

1,021,451.

Patented Mar. 26, 1912.

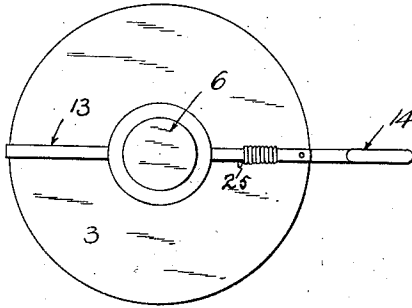


Fig. 2.

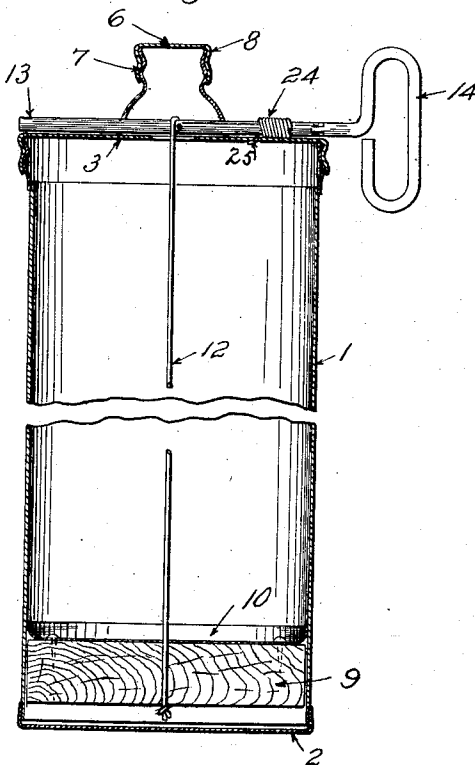


Fig. 1.

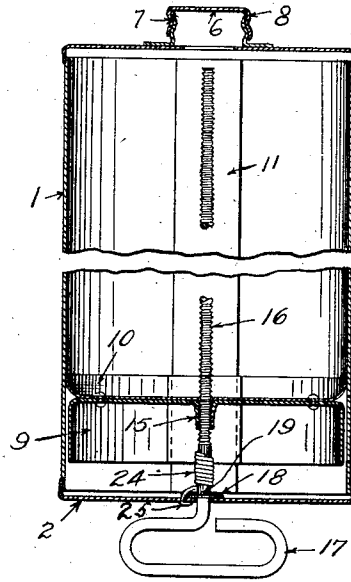


Fig. 3.

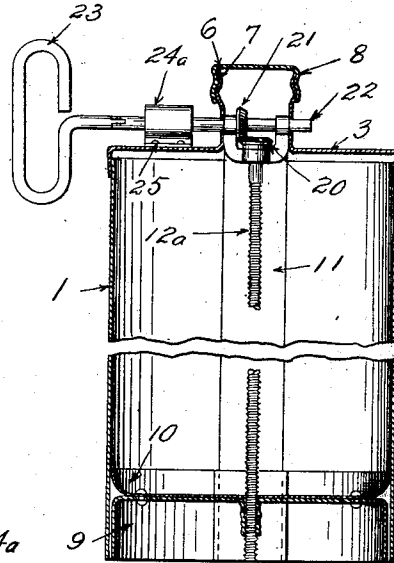


Fig. 4.

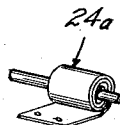


Fig. 5.

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RECEPTACLE FOR CONTAINING AND DISCHARGING SEMISOLID AND PASTY SUBSTANCES.

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Specification of Letters Patent.

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Application filed April 22, 1911. Serial No. 622,815.

To all whom it may concern:

Be it known that I, JAMES F. CRAVEN, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Receptacles for Containing and Discharging Semisolid and Pasty Substances, of which the following is a specification.

This invention relates to receptacles for containing and discharging semi-liquid, semi-solid and pasty substances.

The device is intended more particularly for putting up lubricants in the form of greases and discharging the same into grease cups of machines. The invention however is not limited to this particular use, but is adapted for putting up in a substantially sealed condition any semi-liquid, semi-solid or pasty substance, and delivering the same from the container in any desired quantity or quantities.

The invention comprises the construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawing Figure 1 is a vertical section through one form of the device; Fig. 2 is a plan view of the same; Figs. 3 and 4 are vertical sections showing modifications; and Fig. 5 is a perspective view showing a spiral instead of a helical spring.

The invention is applicable to any form of container provided with a discharge orifice and with means for forcing the contents through said orifice, and the particular improvements relate to means for preventing movement of the forcing means backwardly or in the wrong direction.

In the drawings 1 indicates a receptacle or container which may be of any desired size or shape and built up or constructed in any desired way. As shown the container comprises a substantially cylindrical tube 1 which may be formed of sheet metal or other thin substance, but as shown is made from paste or paper board. One end of this tube is closed by means of the bottom 2 which is shown as composed of sheet metal crimped onto the end of the paper tube. The other end is closed by means of the head 3 formed of sheet metal crimped onto the paper tube and provided with a discharge

orifice 6 which leads to the tubular projection or nozzle 7, adapted to be closed by a screw cap 8, or to have a delivery spout attached thereto, as will be readily apparent.

The means for forcing the contents out of the container comprises a suitable piston or follower 9 preferably formed of cupped sheet metal and provided with a cup leather 10 or other yielding means forming a close fit within the tube and facing toward the discharge orifice. When the receptacle is full this piston or follower lies at one end of the container and by moving it toward the discharge opening the contents are expelled from the container. The piston or follower is prevented from rotation by the frictional engagement of its periphery with the walls of the tube, but if desired a strip of paste board 11 may be secured to the inner face of the tube and made to engage a recess in the face of the piston.

The means for moving the piston toward the discharge orifice may vary. The drawings show three different means of accomplishing this result. Figs. 1 and 2 show for this purpose a wire or wires, band or other flexible connector 12 connected to the piston and having its end attached to a suitable winding key or shaft 13 mounted on one of the heads of the container, such as in the nozzle 6, so that when the key or shaft 13 is rotated the wire or wires 12 are wound thereon and move the piston or follower toward the discharge opening to expel the contents. The key or shaft is provided with a suitable handle 14 for turning the same.

Fig. 3 shows a modification wherein the piston is provided with an externally threaded hub 15 which engages a screw rod 16 extending the full length of the retainer, and through one head thereof and provided on its outer end with a suitable handle 17 for turning the same. A washer 18 held by a pin 19 on the inside of the head 2, holds the screw rod from endwise movement, so that by turning the rod in the right direction the piston is caused to travel toward the outlet orifice to discharge the contents.

Fig. 4 shows a modification wherein the screw rod 12^a is provided with a bevel gear 20 meshing with a similar gear 21 on the

operating shaft 22, which is mounted on the head of the receptacle and is provided with a turning handle 23.

Various other means for moving the piston will suggest themselves.

The parts so far described may be of various forms and the specific devices shown have been chosen merely for illustration, as the improvements herein claimed are applicable to any form of device in which there is a rotating shaft or member for actuating the piston. The specific improvement is for the purpose of preventing rotation of the turning or winding key, rod, or shaft in the wrong direction. To this end I place around the turning or winding member a small coiled spring, formed of resilient metal, preferably of a steel wire or band of the proper gage. The spring may either be of helical form as shown at 24 on Figs. 2 and 3, or of spiral form as shown at 24^a, Figs. 4 and 5. The spring has one end thereof secured to a stationary or immovable part of the receptacle, such as being attached to the head of the receptacle at 25. The other end of the coil is perfectly free, and said coil has no connection with the rotating key, rod, shaft or screw other than a frictional engagement of its turns therewith. Said spring is wound so as to closely hug the key, rod, shaft or screw, and in the helical form has enough turns or coils, and in the spiral form is formed of a band of such width, as to create sufficient friction so that when the key, rod, shaft or screw is turned, the coil tends to turn therewith. Now, if said key, rod, shaft or screw is turned in the proper direction the frictional engagement with the coil has a tendency to slightly expand or open up the coil, so that the latter offers no material resistance to the rotation of said turning or winding member. If however the turning or winding member is attempted to be turned in the reverse direction the coil immediately closes and grips the same with so much force that it absolutely prevents backward turning without breaking either the spring or some other part.

The device described is of very simple construction and cheap to manufacture, and adds very little to the cost of the container. It absolutely prevents turning the rotating actuating member in the wrong direction and therefore prevents moving the piston backwardly, or at least prevents the waste of time which would be caused by first moving the piston away from the contents and after discovery of the error moving it in the right direction.

As above stated this improvement can be applied to a container of any kind for containing a substance of any kind in which a rotating or winding member of any kind is used to actuate the expelling means.

What I claim is:

1. A device of the character specified, comprising a receptacle provided with a discharge orifice, means arranged to force the contents from said discharge orifice, a rotary member for actuating said discharge means, and a friction member immovably attached to the receptacle and surrounding a smooth portion of said rotary member and firmly gripping the same and arranged to prevent rotation of said member in one direction.

2. A device of the character specified, comprising a receptacle provided with a discharge orifice, a rotary member for actuating said discharge means, and a coiled spring having one end immovably attached to the receptacle and surrounding said rotary member and tightly gripping the same and thereby arranged to prevent rotation of said turning member in one direction.

3. A device of the character specified, comprising a receptacle provided with a discharge orifice, a piston or follower in said receptacle arranged when moved to force the contents through the discharge orifice, a rotary member for moving said piston, or follower, and a friction member immovably attached to the receptacle and surrounding a smooth portion of said rotary member and firmly gripping the same and arranged to prevent rotation of said member in one direction.

4. A device of the character specified, comprising a receptacle provided with a discharge orifice, a piston or follower in said receptacle arranged when moved to force the contents through the discharge orifice, a rotary member for moving said piston or follower, and a coiled spring having one end immovably attached to the receptacle and surrounding said rotary member and tightly gripping the same, thereby preventing rotation of said rotary member in one direction.

5. A device of the character specified, comprising a receptacle provided with a discharge orifice, a piston or follower in said receptacle arranged when moved to force the contents through the discharge orifice, a flexible member connected to said piston, a winding member for said flexible member, and a friction member immovably attached to the receptacle and surrounding a smooth portion of said winding member and firmly gripping the same and arranged to prevent rotation of said winding member in one direction.

6. A device of the character specified, comprising a receptacle provided with a discharge orifice, a piston or follower in said receptacle arranged when moved to force the contents through the discharge orifice, a flexible member connected to said piston, a

winding member for said flexible member,
and a coiled spring having one end immov-
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5 ping the same and thereby preventing rota-
tion of said winding member in one direc-
tion.

In testimony whereof, I have hereunto set
my hand.

JAMES F. CRAVEN.

Witnesses:

W. C. LYON,
MARY E. CAHOON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
