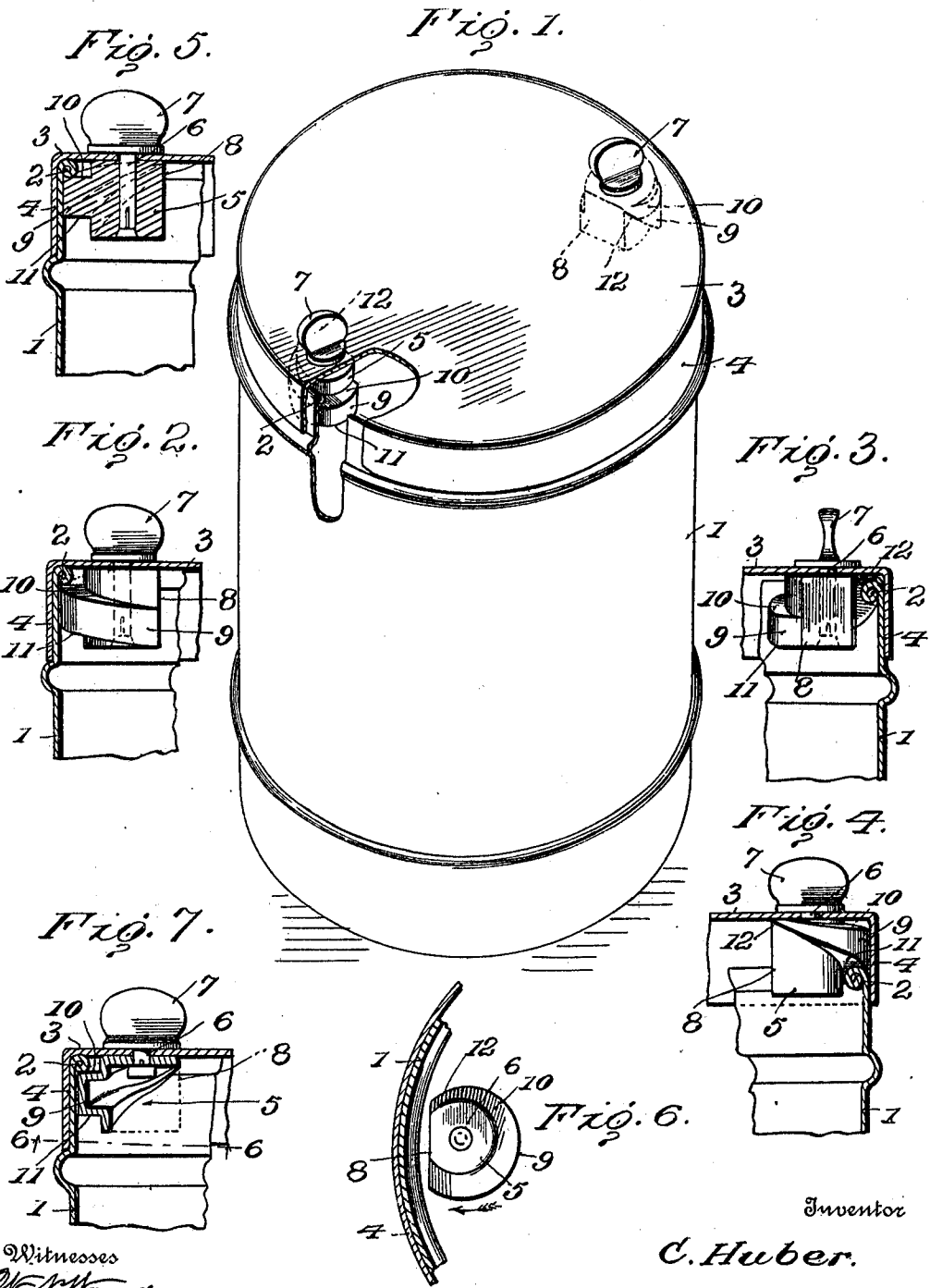


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 CAN TOP FASTENER AND OPENER.
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CAN-TOP FASTENER AND OPENER.

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To all whom it may concern:

Be it known that I, CLEMENCE HUBER, citizen of the United States, residing at Streator, in the county of Lasalle and State of Illinois, have invented certain new and useful Improvements in Can-Top Fasteners and Openers, of which the following is a specification.

The present invention comprehends certain new and useful improvements in receptacles such as shipping and storing vessels having movable lids or closures, and the invention has for its object an improved device which is adapted to be turned in one direction to hold the closure fastened to the receptacle with considerable force, and which is arranged when turned in the opposite direction to release the closure and to positively separate the same from the receptacle, thus obviating the necessity of prying the closure from the receptacle, as is quite tedious and inconvenient and is liable to result in such injury to the parts as to prevent their re-use.

A further object of the invention is a fastening device of this character that may be operated with facility and that embodies to a marked degree the characteristics of simplicity, durability and efficiency, and that may be easily and cheaply manufactured and readily applied to receptacles of conventional form.

With these and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that I shall hereinafter fully describe and then point out the novel features of in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a perspective view showing the invention applied to a can; Fig. 2 is a fragmentary vertical section of the can with the fastening device shown in elevation in locking position; Fig. 3 is a similar view with the tapered end of the rib partially inserted between the bead and the can top; Fig. 4 is a similar view showing the fastening device turned beyond the position illustrated in Fig. 3 to positively separate the parts; Fig. 5 is a vertical section of the fastening device

in the position illustrated in Fig. 2; Fig. 6 is a bottom plan view with the fastening device in released position; and, Fig. 7 is a detail perspective view of a modification hereinafter specifically described.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

The present invention is susceptible of general application for securing together and separating relatively stationary and movable parts, and, for instance, may be used in connection with receptacles of various types having either hinged closures or closures that are fitted frictionally thereto. However, for the purpose of illustration the device is shown and described as applied to a can.

Referring to the drawing, the numeral 1 designates the can body which is of the usual or any approved construction or design and which is open at one end, as shown, and is formed at such end with an inwardly turned bead or flange 2 which is designed for cooperation with the fastening device. The bead is preferably continuous in order to reinforce the mouth of the can, but it is to be understood that it is not necessarily so, as one or more inward projections at the end of the can would suffice. The top or closure 3 conforms to the contour of the open end of the can and is designed to be fitted thereto in abutting relation to the bead, the closure being preferably provided with a perpendicularly extending marginal flange 4 overlapping and fitting frictionally the periphery of the can body to assist in maintaining the closure in place and form a more efficient joint between the parts. For convenience the can body and the closure will be hereinafter referred to as relatively stationary and movable parts respectively.

Two or more of my improved fastening devices are utilized for connecting the closure to the can body and as all these devices are substantial duplicates, only one of the same will be specifically described. The fastening device consists essentially of a substantially cylindrical turn-button or locking member 5 which is formed of metal and has its ends square cut, as shown. A shank 6 is extended centrally beyond one end of the button and is disposed perpendicularly with respect to the plane of the closure and passes through an aperture formed therein in prox-

imity to the margin thereof. The button 5 is positioned at the inner face of the closure, so as to extend inwardly therefrom in close proximity to the inner surface of the can body, the shank 6 being provided at the outer face of the closure with a suitable finger piece 7 by means of which the button may be conveniently turned in one direction or the other to effect the operation of the fastening device, the button and the finger piece abutting the respective faces of the closure to maintain the shank against sliding longitudinally through the aperture therein. In the present instance the finger piece is integral with the shank and is flattened so as to project perpendicularly from the outer face of the closure.

The button 5 has its periphery flattened longitudinally at one side, as indicated at 8, and is formed at the rounded portion of its periphery with an outstanding rib 9 which is disposed spirally thereon, with its ends terminating at the opposite longitudinal edges of the flattened portion and flush with the opposite ends of the button. This rib provides two oppositely disposed cam faces designated 10 and 11 respectively, said faces being substantially parallel except at the end of the rib adjacent to the inner face of the closure, such end of the rib being tapered, so that the cam faces meet in an edge 12 lying substantially in the plane of the corresponding end of the button. For the sake of perspicuity the cam face 10 which is adjacent to the closure will be referred to as the outer cam face, while the other cam face 11 will be termed the inner cam face.

When the button 5 assumes the position illustrated in Fig. 6, with the flattened portion 8 opposite to the adjacent part of the can body, sufficient clearance is afforded the inwardly turned bead 2, so as to release the closure and permit the same to be removed from the can body. In order to lock the closure to the can body it is merely necessary to turn the button in the direction indicated by the arrow, whereby the end of the rib flush with the inner end of the button is turned against the inner surface of the can body with the bead 2 interposed between the same and the closure, the continued turning movement of the button in this direction causing the outer cam face to bear against and ride along the bead to draw the closure against the same with considerable force and effect a tight joint to insure against possible leakage of the contents of the can.

Attention is particularly directed to the fact that the peripheral face of the rib rolls along and bears against the inner surface of the can body to press the same against the marginal flange 4 to reinforce the structure and obviate the possibility of the sides of the can body being sprung laterally sufficiently to permit the bead to clear the spiral

flange when the fastener is in locked position. To release the closure from the can, the button is turned in the opposite direction, so as to assume its initial position with the flattened portion 8 opposite the can body, the turning movement in this latter direction being continued in order to insert the edge 12 at the tapered end of the rib between the closure and the bead and cause the inner cam face to bear against and ride upon the bead to positively and conveniently wedge the relatively stationary and movable members apart.

Among the many advantages attained with the invention it is to be observed that the fastening device is carried entirely by the closure and is removable therewith, so as not to obstruct the mouth of the can when the contents are introduced in or removed from the latter. Furthermore, the fastening device may be manipulated with a minimum amount of exertion on the part of the operator; is particularly convenient and attractive as it performs a dual function; embodies to a marked degree the characteristics of simplicity, durability and strength; and is not likely to work loose or become injured through repeated use. In practice two of these fastening devices have been found sufficient to secure the closure of a small can in place, but it will be manifest that any number of fasteners may be utilized according to the size of the can, the fastening devices being disposed at regular intervals along the marginal portion of the closure.

It is to be understood that my invention is not limited to a block or button 5 of the solid formation, but that, particularly for use with light or small pails and tins or the like, the button may be hollow as indicated at 5^a in Fig. 7: in all substantial respects, this button is like the button hereinbefore described, and a detail description thereof is, therefore, not necessary.

Having thus described the invention what is claimed as new is:

1. The combination with relatively stationary and movable parts, of a member movably connected to one of the parts and engaging with the other part to lock said parts together, the member being movable to unlock the parts and positively force the same apart.

2. The combination with relatively stationary and movable parts, of a member connected to one of said parts and movable in one direction to engage the other part to lock the said parts together, the member being movable in another direction to unlock the parts and to positively force the movable part from the stationary part.

3. The combination with relatively stationary and movable parts, of means for locking said parts together, the locking

means being adapted to wedge between the parts to positively force the same apart.

4. The combination with relatively stationary and movable parts, of a member movably connected to one part and having a spiral rib engaging with the other part to lock said parts together, the rib releasing the movable part from the stationary part upon the movement of the member and positively forcing said parts apart.

5. The combination with relatively movable and stationary complementary parts, of a member carried by one of the parts and provided with a spiral rib arranged to engage with the other part to lock said parts together, the rib having a tapered extremity adapted to wedge between the parts to positively separate the same.

6. The combination with relatively stationary and movable parts, of a member connected to one of the parts and having a cam face engaging with the other part to lock the parts together, the member also having a second cam face adapted to engage with said other part to positively force the parts apart.

7. The combination with relatively stationary and movable parts, of a member movably connected to one of said parts and provided with an outstanding spiral rib having cam faces, one of said cam faces engaging with the other part to lock the parts together, and the other cam face engaging with said other part to positively force the parts apart.

8. The combination with relatively movable and stationary complementary parts, one of said parts having a projection, of a member movably connected to the other part and having a spirally extending rib adapted to engage the projection to lock the parts together, the rib having a tapered extremity arranged to be wedged between the projection and the part to which the member is connected, to positively separate the parts.

In testimony whereof I affix my signature in presence of two witnesses.

CLEMENCE HUBER. [L. S.]

Witnesses:

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