

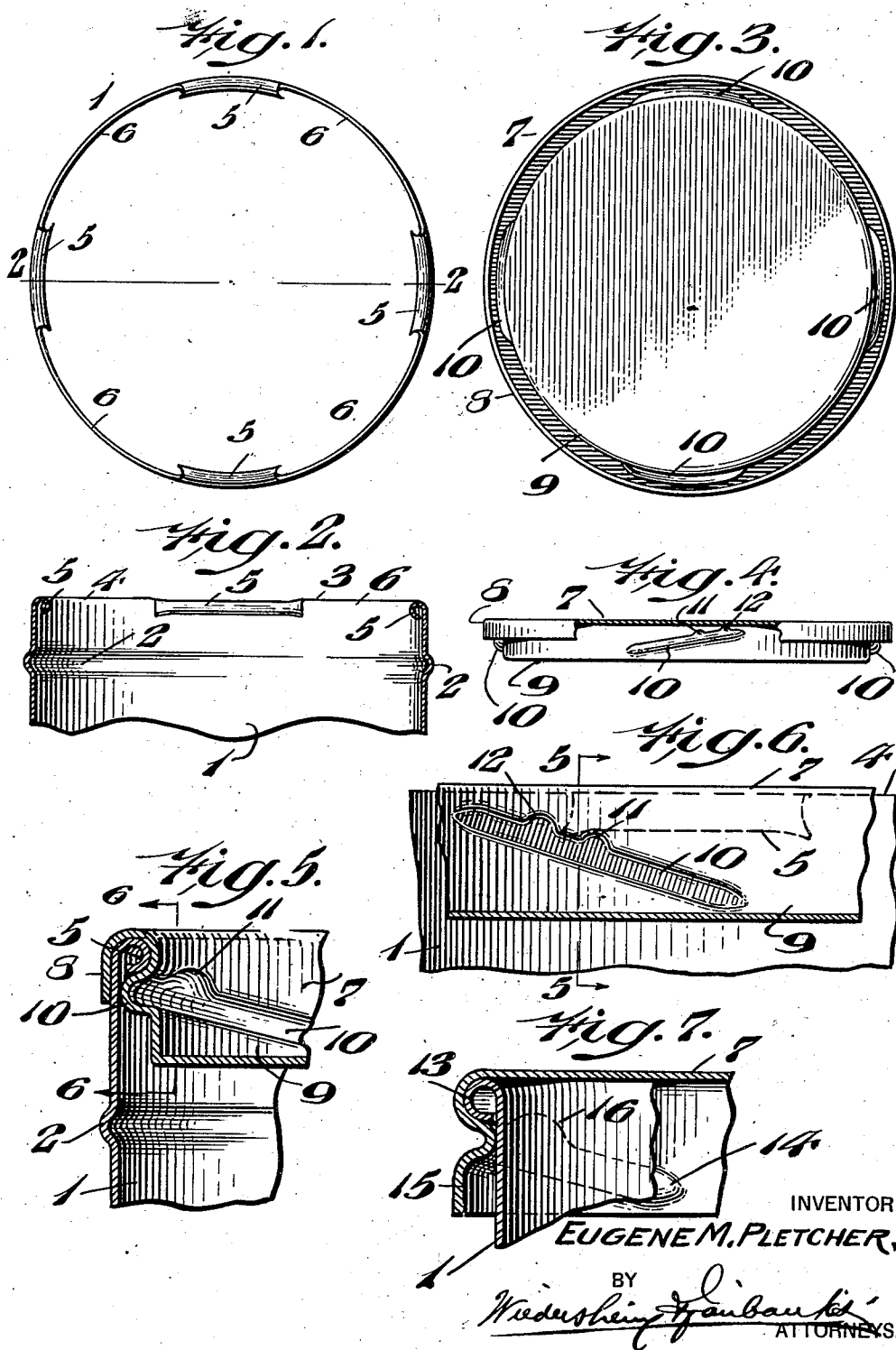
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E. M. PLETCHER

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SCREW FRICTION LOCK FOR CANS

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UNITED STATES PATENT OFFICE.

EUGENE M. PLETCHER, OF NEW YORK, N. Y.

SCREW FRICTION LOCK FOR CANS.

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My invention relates to a novel construction of a screw friction lock for tin cans, glass bottles, containers and the like, which have detachable covers and bottoms, the object of my invention being to provide novel locking and coacting means between the cover or bottom of the container and an end thereof, so as to cause said cover or bottom to remain firmly attached to the container body by merely rotating the cover or bottom in a clockwise direction and to cause said cover or bottom to be detached by a rotation thereof in the reverse direction.

My invention further consists of a novel friction screw lock, wherein a stop is provided on the inclined ridges employed to limit the rotary motion of the cover or bottom member with respect to the container body, while said cover or bottom is being attached to or interlocked on the can or container.

To the above ends, my invention consists of a novel construction of a can, bottle, jar, or container body having at its periphery terminal, horizontal spaced apart beads or lips of a rounded cross section, in combination with a cover or bottom for said container having spaced inclined ridges pressed inwardly or outwardly from the annular pendant flange thereof, said ridges being adapted to interlock with the said beads firmly and detachably to secure said cover or bottom with respect to the container body by a clockwise rotation and to disengage from said segments by a rotation of said cover in the reverse direction.

My invention further consists in providing said inclined ridges on the cover or bottom of a can or container with spaced lugs or shoulders, the lowermost of which is adapted to interlock with the rolled bead segments on the container, and the uppermost of which is adapted to act as a stop to arrest the rotary movement of said cover or bottom with respect to said container.

My invention further consists in the various other novel features of construction and collocation of parts which will be hereinafter described and claimed.

For the purpose of illustrating my invention I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously ar-

ranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

In the accompanying drawings:—

Figure 1, represents a top plan view of a container embodying my invention with the lid or cover removed.

Figure 2, represents a section on line 2—2 of Figure 1.

Figure 3, represents a bottom plan view of the cover or lid.

Figure 4, represents a side elevation of the cover shown in Figure 3 with the outside 70 partly broken away to show the internal construction.

Figure 5, represents a section on line 5—5 of Figure 6.

Figure 6, represents a section on line 6—6 of Figure 5.

Figure 7, represents a sectional view similar to that shown in Figure 5, showing a modified construction.

Referring to the drawings, in which like reference characters indicate like parts, 1 designates the body portion of a tin can or similar container, having the annular stiffening bead 2, and being provided with the open top or mouth 3. The upper rim or edge 4 of the container 1 is rolled at intervals to form the spaced apart inwardly and downwardly projecting bead segments 5 of round cross section, the intermediate portions 6 of said rim being unobstructed as will be understood from Figures 1 and 2. 7 designates a cover or lid, having an outer inverted U-shaped cross section and having the outer pendant, annular flange 8 and the inner pendant annular body portion 9. The inner annular portion 9 of the cover 7 is provided with the outwardly projecting, spaced, inclined ridges 10 which are pressed from the body of said flange as will be understood from Figures 3, 4 and 5, and which are provided on their upper surface with the spaced lugs or shoulders 11 and 12.

The operation is as follows: The cover 7 is applied to the top of the receptacle or can 1 so that the inclined ridges 10, on the inner portion 9 are in alignment with the portions 6 on the upper edge or rim 4 of the container. The cover is then pressed down to force the upper edge or rim 4 of the can 1 between the inner portion 9 and the outer flange 8 of said cover. The cover 7 is then rotated from left to right until the inclined ridges 10 are in

alignment and in locking engagement with the bead segments 5 as will be understood from Figure 5. In this position of the cover 7 the foremost or lowermost lugs 11 on the inclined ridges 10 engage the underside of the bead segments 5 while the upper or higher lugs 12 serve as stops or abutments to limit the travel or rotation of said cover, as will be understood from Figure 6.

Due to the springy character or resiliency of the rounded bead segments 5, the lugs or shoulders 11 and the ridges 10, it is possible to apply maximum pressure in the rotation of the cover 7 to obtain maximum frictional engagement between the cover and the container without any damage to either, and without the risk of permanent, unintended interlocking. By the provision of the higher or upper lug 12, a limit is placed upon the rotation of the cover to indicate to the user that the cover has been sufficiently rotated and that it is in proper engagement with the container. To produce this result the lower lugs 11 are so positioned as to clear the lower ends of the beads 5 and to engage the undersides or the bottoms thereof, while the rear lugs 12 are so positioned as to abut against the front ends of said beads 5 to limit the rotation of the cover with respect to the receptacle. To disengage and remove the cover 7, it is merely necessary to rotate the same in the reverse direction until the ridges 10 clear the bead segments 5, whereupon the cover can be withdrawn.

In Figure 7 I have shown a modified construction wherein I employ a container 1, having its upper edge or rim turned or rolled outwardly to form the outwardly projecting bead segments 13 which are spaced apart. In this construction I provide the inwardly projecting inclined lips 14 which are pressed from the annular pendant flange 15 of the cover 7 and which are provided with the lugs 16 for engaging the bead segments 13 in the manner heretofore described. In this construction the inner pendant portion 9 employed in the embodiment of my invention shown in Figures 3, 4, 5 and 6, is dispensed with, since by providing the outwardly projecting bead segments 13 on the upper rim or edge of the container 1, it is merely necessary to provide the outer pendant flange 15 having the inwardly projecting lips 14 and their adjuncts thus resulting in a simpler construction which will provide the same degree of efficiency and which in certain cases may be more desirable.

In both of the embodiments of my invention above described, I employ the broad principle of providing horizontal, spaced apart bead segments, which are adapted to be engaged by inclined spaced ridges provided with spaced top lugs, it being understood that the ridges and their adjuncts and the bead segments may be provided on the top of the container or on the cover interchangeably

without departing from the scope of my invention. It is further apparent that it is within the scope of my invention to employ a cover having a single outer, annular, pendant flange from which the lips or ridges and their adjuncts are pressed, or to employ a cover having an outer and an inner pendant, annular flange, the lips and their adjuncts being pressed from and carried by one or the other of said flanges as described and illustrated in the figures of the drawings.

It will thus be seen that I have devised a novel friction screw lock for cans which is of an extremely simple and inexpensive construction and which at the same time provides maximum efficiency since it effects firm locking engagement between the cover and the can, and which permits of the engagement and disengagement of said cover by merely rotating the latter through a small fraction of a circle.

It will further be apparent that my novel friction screw lock is equally applicable to cans or containers which are open at both ends, the construction shown and described being in such cases applied to the bottom end of the can in the manner above set forth in connection with the open top end thereof.

It will be apparent from Figures 4 and 6 that the inclined ridges 10 have their upper ends extending to the top 7 and enclosed within the annular flange 8 so that the locking lugs 11 and the stop lugs 12 are enclosed between the annular body portion 9 and the outer annular flange 8.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claim rather than to the foregoing description to indicate the scope of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

In a device of the character stated, a container having an open mouth, horizontally disposed, inwardly projecting lips spaced along the periphery of said mouth the bottom edges at each end being deflected to provide stops, a cover for said container having an outer annular flange, and inner annular outwardly projecting inclined spaced ridges having their upper portions within said flange, spaced lugs formed integral with and upon the tops of said inclined ridges adapted to engage the underside of said lips by a rotary motion of the former, said lugs forming abutments to straddle one of said stops to limit the rotary motion of said cover with respect to said container and interlock the cover and container.

EUGENE M. PLETCHER,