Aug. 21, 1951 R. W. SAXTON 2,565,269

SEALING CAN CLOSURE

Filed Jan. 27, 1950

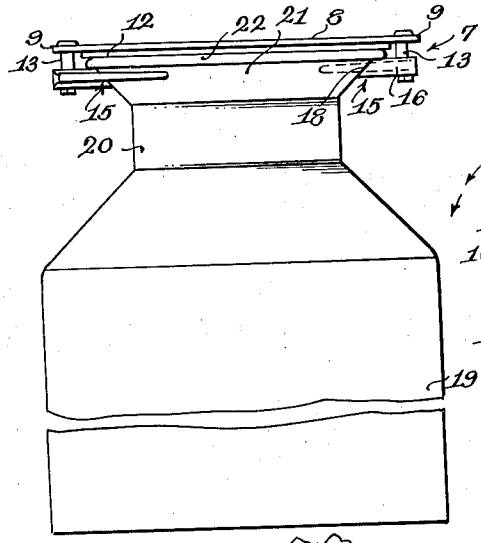


Fig. 1

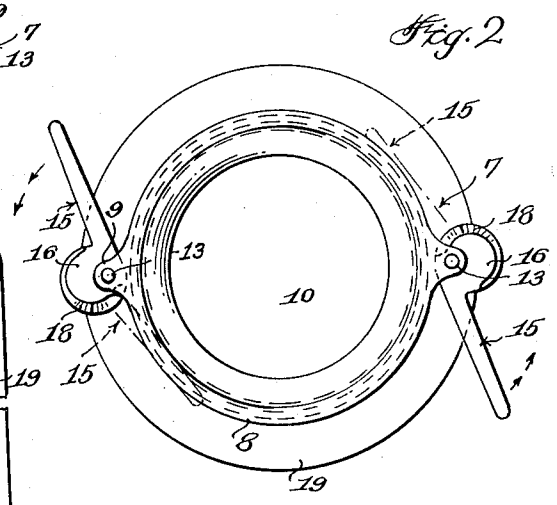


Fig. 2

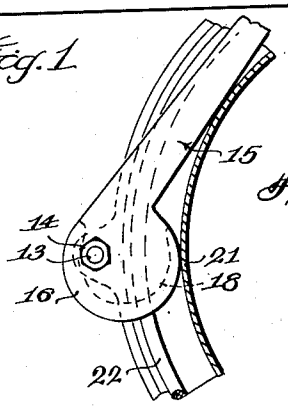


Fig. 6.

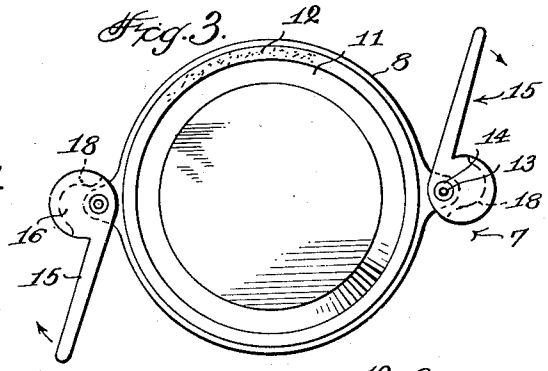


Fig. 3.

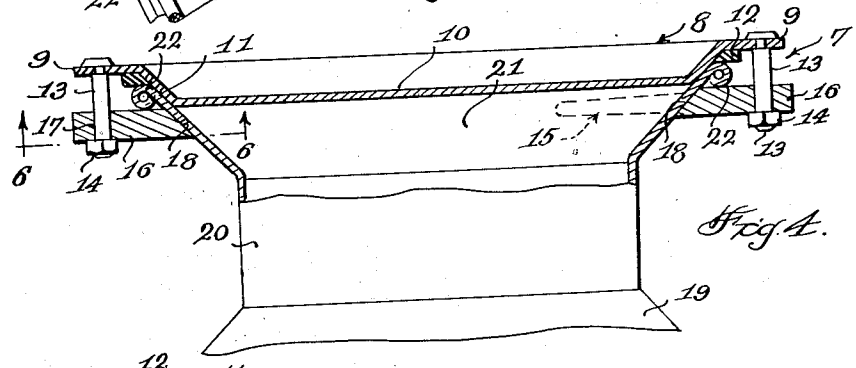


Fig. 4.

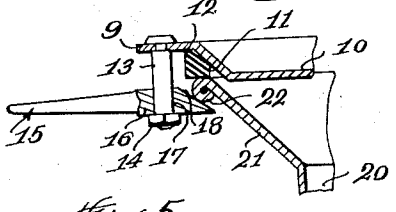


Fig. 5.

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Patented Aug. 21, 1951 2,565,269

UNITED STATES PATENT OFFICE

2,565,269

SEALING CAN CLOSURE

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Application January 27, 1950, Serial No. 140,873

4 Claims. (Cl. 220—55)

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This invention relates to a novel closure or lid for use with conventional milk or cream cans such as are employed for hauling and storing milk or cream and has for its primary object to provide a can lid or closure which will fit conventional cans of different capacities, all of which are provided with a standard size open top and which may be securely locked in a sealed and closed position but which may be quickly and easily released and removed.

A primary object of the present invention is to provide a can lid or closure to replace the conventional plug-type closures now employed which readily work loose from a press fit engagement and which do not prevent dirt and foreign matter from accumulating around the neck of the can and dropping into the contents thereof when such plug-type closures are removed.

Another object of the invention is to provide a sealing closure or lid which will not work loose due to vibration incident to hauling and which will eliminate spilling of the contents of the can in the event that the cans are overturned.

A further object of the invention is to provide a lid or closure which will completely seal and close the open upper end of a can and which will enable cans to be readily stacked one upon the other.

Still a further object of the invention is to provide a can lid or closure of extremely simple construction provided with retaining means to function in conjunction with the neck and rim of a conventional milk or cream can and by which the lid may be securely retained in an applied position for sealing the open end of the can.

Still a further object of the invention is to provide a can lid of extremely simple construction which may be economically manufactured, and which will be efficient and durable for accomplishing its intended purpose and which may be readily secured to or detached from the open top of a milk or cream can but which will be readily retained in an applied position thereon.

Numerous other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a fragmentary side elevational view of a conventional milk can showing the improved lid or closure applied thereto;

Figure 2 is a top plan view thereof showing the closure in an applied but unlatched position;

Figure 3 is a bottom plan view of the lid or closure showing the locking cam in released position;

Figure 4 is an enlarged diametrical sectional view of the closure and upper portion of the can, showing the closure locked in a sealing position;

Figure 5 is a fragmentary radial sectional view

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of a portion of the closure and can neck and showing the closure being applied to or removed from the can neck, and

Figure 6 is a horizontal sectional view taken substantially along a plane as indicated by the line 6—6 of Figure 4.

Referring more specifically to the drawing, the novel lid or closure comprising the invention is designated generally 7 and includes a substantially rigid body portion 8 which may be formed of metal, corresponding to material used for a can to which it is applied or which may be formed of any other suitable material. The body 8, as illustrated in Figures 2 and 3 is substantially disk-shaped except for two outwardly projecting extensions or ears 9 which project from portions of the periphery thereof and which are disposed in diametrical alignment. The body 8 has a relatively large dished central portion 10 in its upper surface defining a downwardly extending frusto-conical surface 11. A relatively thick ring or gasket 12 formed of a sealing and cushioning material such as rubber is secured to the underside of the body 8 around its frusto-conical portion 11 in any suitable manner as by a bonding medium.

Each of the ears or projections 9 has the upper end of a bolt 13 secured therein and said bolts 13 extend downwardly from the ears 9 and are disposed substantially perpendicular to the plane thereof and are provided at their opposite ends with nuts or heads 14. Each bolt 13 supports a lever, designated generally 15 having an enlarged head 16 at one end thereof which is provided with an opening 17 which is eccentrically disposed with respect to the periphery of the head 16 and which turnably engages the shank of the bolt. The lever heads 16 are supported by the bolt heads or nuts 14, as best illustrated in Figures 4 and 5. The lever heads 16 are relatively thick, as seen in Figures 4 and 5, and are provided with corresponding beveled surfaces 18 on their upper sides. The beveled surfaces 18 vary in width each from the end thereof which is located nearest to the bolt shank 13 to the end thereof which is located more remote to said bolt shank 13 so that the first mentioned, wider portion of each beveled surface 18 is not sloped at as great an angle to the plane of the lever head 16 as the other, narrower end of the beveled surface 18 and which is located more remote to the bolt shank opening 17.

A conventional milk or cream can of the type employed for hauling and storing milk and cream in bulk is illustrated in the drawing to illustrate the application and use of the improved sealing closure 7. Such milk or cream cans are made in different sizes but are provided with a standard size filling and dispensing neck. The can 19 is provided with a restricted neck portion 20 having

a flared or frusto-conical outer neck portion 21 defining the upper open end of the can and which terminates in an outturned rolled bead 22.

With the levers 15 disposed as illustrated in Figures 2 and 3 so that the beveled surfaces 18 are disposed outwardly with respect to the bolts 13, the lid or closure 7 is placed over the open top of the can 19. The levers 15 are then swung clockwise from their unlatched positions of Figure 2 toward their latched positions of Figures 1 and 4. In so moving, the beveled surfaces 18 are initially moved into engagement with the underside of the bead 22 and said bead is initially engaged by the wider end of the beveled surfaces 18 which are disposed nearest the bolts 13 and which have the least angle of inclination, as illustrated in Figure 5. As the levers 15 are moved on toward their full line positions of Figures 1 and 4 and their dotted line positions of Figure 2, said beveled surfaces form cams which displace the lid 7 downwardly with respect to the neck portion 21 by engagement with the underside of the bead 22 and as the lever heads 16 are thus displaced inwardly with respect to the neck portion 21 and bead 22, said bead 22 rides up onto the top surface of the heads 16 and the beveled portions 18 which are located more remote to the bolts 13 and which have a greater angle of inclination approach the frusto-conical neck portion 21 so that when the handle ends of the levers 15 reach positions beneath the body member 8 and bead 22 and against the frusto-conical neck portion 21, as illustrated in full lines in Figures 1 and 6 and in dotted lines in Figure 2, the portions of the beveled surfaces 18 which are disposed most remote to the bolts 13 and which have substantially the same angle of inclination as the frusto-conical neck portion 21 will be disposed substantially against said neck portion 21, as illustrated in Figure 4 for locking the lid 7 in an applied position on the open top of the container 19. When the lid 7 is thus locked on the container 19, its frusto-conical surface 11 will engage a portion of the inner surface of the outer frusto-conical neck portion 21 and the sealing gasket 12 will be compressed between the body member 8 and the bead 22 for effectively sealing the open upper end of the can 19. It will be readily apparent that in this position of the parts, the handles of the levers 15 will be disposed substantially beneath the body member 8 to prevent the levers 15 from being accidentally engaged and swung clockwise to released or unlatched positions as illustrated in full lines in Figure 2, but said handle ends will be disposed so that they can be readily engaged and swung to their full line positions of Figure 2 for quickly and easily unsealing and removing the lid 7, when desired. The lid 7 provides an annular flat top surface so that a plurality of cans 19 may be stacked one upon the other and efficiently seals the can so that the contents thereof will not be spilled should the can overturn and roll. The lid 7 likewise will not become released and unsealed due to vibration as occurs in hauling.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A sealing closure for milk or cream cans comprising, in combination with a milk or cream can having a neck provided with a flared frusto-conical outer portion which terminates in an outturned rolled bead, a closure for closing and sealing said neck comprising a body member having a frusto-conical portion on its underside sized to fit into the frusto-conical neck portion, a sealing gasket disposed on the underside of said body member around its frusto-conical portion to engage the upper side of the rolled bead, journal members extending downwardly from said body member in outwardly spaced relationship to said sealing gasket, a plurality of lever members, each of said lever members having an enlarged head at one end thereof provided with an arcuate edge and having an opening extending through the head disposed eccentrically of said edge, each of the heads being supported on one of the depending journal members and being journaled thereon by engagement of the head opening therewith, the upper side of each head having a beveled surface extending coextensively with a substantial portion of its arcuate edge, said beveled surfaces initially engaging under the rolled bead as the levers are swung on said journal members in directions to displace the heads inwardly with respect to the can neck for camming the heads downwardly for displacing the frusto-conical portion of the body member into the frusto-conical neck portion and the gasket into clamping engagement with the bead, and said beveled surfaces being eccentrically disposed relatively to the head openings to move inwardly of the bead as the lever heads are displaced inwardly and cammed downwardly for positioning portions of the upper surfaces of the lever heads beneath said bead for locking the closure in sealing engagement with the open top of the can.

2. A sealing closure as in claim 1, the opposite ends of said handles being disposed in protected positions beneath the body member and bead and against the frusto-conical neck portion when the closure is locked in a sealing position on the open top of the can.

3. A sealing closure as in claim 1, said beveled surfaces being located eccentrically of the journal members and decreasing in width and increasing in their angles of inclination from the ends thereof located adjacent the journal members to their opposite ends.

4. A sealing closure as in claim 1, said beveled surfaces being located eccentrically of the journal members and decreasing in width and increasing in their angles of inclination from the ends thereof located adjacent the journal members to their opposite ends, and the last mentioned, narrower ends of said beveled surfaces being positioned relatively to the journal members to abut portions of the outer side of the frusto-conical neck portion when the closure is in a sealed and locked position.

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