March 18, 1924. 1,487,653

H. H. HART

HEAD FOR METAL CONTAINERS

Filed April 2, 1920

FIG. 2.

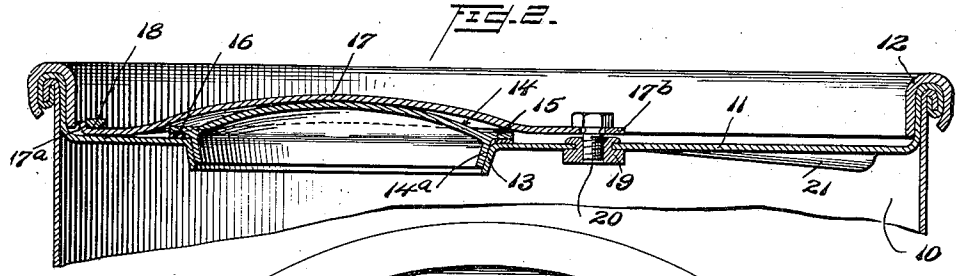
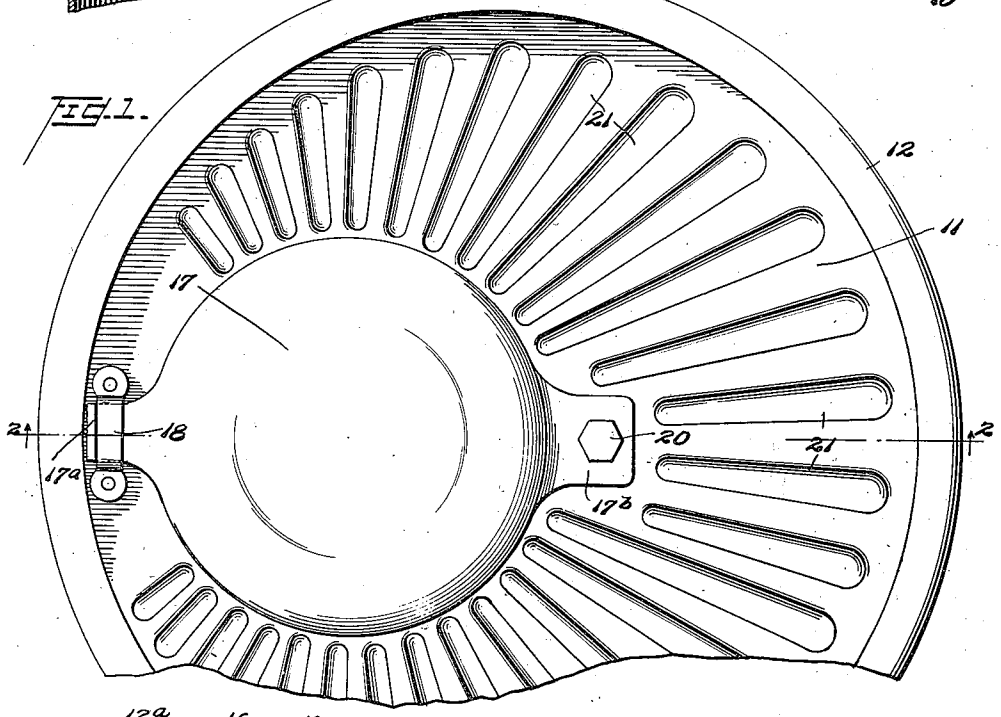


FIG. 1.



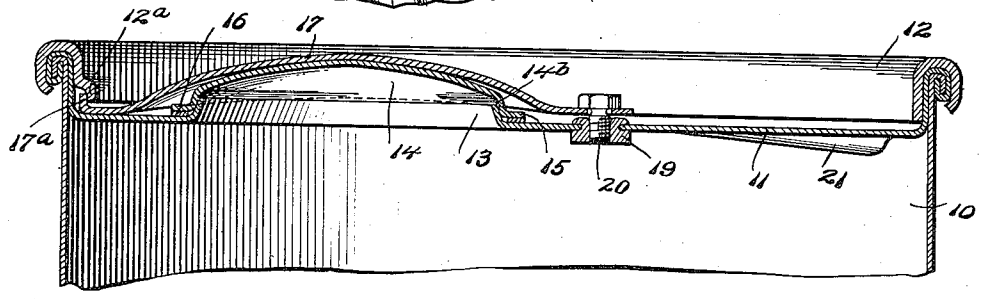


FIG. 3.

Inventor
Herbert H. Hart,

By Watson, Cole, Morse & Grindle,

Attorneys.

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UNITED STATES PATENT OFFICE.

HERBERT H. HART, OF EVANSTON, ILLINOIS.

HEAD FOR METAL CONTAINERS.

Application filed April 2, 1920. Serial No. 370,699.

To all whom it may concern:

Be it known that I, HERBERT H. HART, a citizen of the United States, and residing at Evanston, Cook County, State of Illinois, have invented certain new and useful Improvements in Heads for Metal Containers, of which the following is a specification.

This invention relates to improvements in heads for metal containers such as barrels, drums or the like which are provided with removable closures through which they may be filled and emptied.

Containers of the kind mentioned are extensively employed in large sizes of the packing and shipping of various kinds of materials, such as chemicals, cement or the like in a dry state, and also for shipment of semi-fluid or fluid materials such as grease or oils, particularly of the kind employed in the construction of roads. Such containers are subjected to very severe usage in handling and shipment and the covers or closures for the same are apt to become detached or displaced or broken, resulting in loss of material, as well as damage and inconvenience from the escaping material.

It is the aim of this invention to produce a container of the kind referred to which is strong and durable and capable of prolonged and repeated use, and which is provided with a removable closure having means by which such closure can be firmly and effectively secured in position so as to prevent escape of material even when in liquid form, the parts being so arranged and positioned that the closure and its securing means will be protected and breaking or displacement of the same avoided.

The invention in one specific embodiment is disclosed in the following specification and illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of the head of a container with the present invention applied thereto;

Fig. 2 is a sectional view on the line 2—2 of Figure 1 illustrating the construction of the end of the container and of the manner of securing the closure in position;

Fig. 3 is a sectional view similar to Figure 2 illustrating a modified arrangement of closure and also a slightly modified arrangement for securing the closure in position.

Referring to the drawings in detail 10 represents the body of the container, the lower portion being omitted, as such portion may be of the ordinary construction. The numeral 11 designates the head of the container which is secured to the body in any desired manner, as by rolling and crimping the parts together. A chime is thus formed on the container which extends beyond the head. To this chime a reinforcing member 12 is secured. The head is provided adjacent one side thereof with an opening which is surrounded by a flange 13, which flange may extend inwardly, as shown in Figure 2, or outwardly as shown in Figure 3. A closure 14 is adapted to be mounted over the opening in the head, this closure being provided with a surface adapted to frictionally engage the flange 13 formed about the opening in the head. It will be noted that the closure is provided with a dome-shaped portion which extends above the plane of the head. As shown in Figure 2, the closure is provided with a flange 14^a which frictionally engages the flange 13 on the head. In the form shown in Figure 3, a part 14^b of the body portion of the closure is suitably shaped to frictionally engage the upstanding flange 13 formed on the head. By means of the frictional engagement of the parts, a tight seal is formed which prevents escape of material from the container. In the form of device shown in both Figure 2 and Figure 3, the closure is provided with a flange 15, which is adapted to lie parallel to the head when the parts are assembled, and a gasket 16 is arranged between such flange on the closure and the head of the container. This gasket serves to effectively seal the container when the closure is pressed into position and it is of particular value when the container is used for liquids. It will be noted that the gasket is so positioned that it will not come into direct contact with the liquid. The closure 14 is clamped in position by a locking plate 17, which is dished or curved so as to provide a spherical or dome-shaped cover adapted to fit over the dome-shaped closure 14. The dished or curved portion of the locking plate 17 is formed on a greater radius than the dome-shaped portion of the closure 14 so that while the locking plate contacts with the closure for a substantial distance about the center thereof the margin of the closure is spaced from the overlying portion of the locking plate.

At one end the locking plate 17 is provided with a projecting portion 17^a which is intended to engage beneath a keeper 18 secured to the head, or as shown in the modified form of device illustrated in Figure 3, such projecting portion 17^a of the locking plate may be arranged to engage a suitable lug or projection 12^a formed on or in the chime of the container. The opposite end of the locking plate 17^b is perforated and a threaded plug 19 is mounted in the head of the container in such position that a bolt 20 can be inserted in the perforation of the locking plate and engaged with the threads of said plug. Surrounding the opening in the head 11, the material of the head is corrugated, as shown at 21, these corrugations extending in radial lines from the opening substantially to the margin of the head, and serving to give strength and durability to the head.

The foregoing construction provides an arrangement for effectively carrying out the purposes of the invention. It will be understood that the locking plate 17 is so shaped that the edge of the same will remain out of contact with the surface of the head 11 even when this plate is drawn down by bolt 20 to clamp the closure 14 in position. This plate is also shaped so that it will contact with the closure 14 over a considerable portion but not all of the surface of the latter. The result is that the closure throughout its entire circumference will be pressed into close contact with the head 11 at all times and any tendency of the same to move laterally will be prevented by reason of the engagement between the dome-shaped portion thereof and the dished or dome-shaped locking plate. The locking plate also provides means by which the closure is effectively prevented from injury, as the closure is covered and protected by the plate. It will also be seen that since the chime of the container extends beyond the head, the closure, the locking plate, and the means for securing the same in position, these parts which lie within the space surrounded by the chime will be protected from injury.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination with a container head having an opening, of a closure mounted over said opening, said closure having a dome-shaped portion extending above the plane of the head, a locking plate having a dished or dome-shaped portion overlying and engaging the dome-shaped portion of the closure, the dome-shaped portion of said plate being curved on a greater radius than the dome-shaped portion of the closure whereby said plate engages the central part only of the dome-shaped portion of the closure, a holding device engaging said plate on one side of said opening, a second holding device engaging said plate on the opposite side of said opening, the edge of said locking plate between said holding devices being spaced from the upper surface of the head.

2. The combination with a container head having an opening, of a closure mounted over the opening, said closure having a dome-shaped portion extending above the plane of the head, a locking plate having a dished or dome-shaped portion covering and engaging the dome-shaped portion of the closure, the dome-shaped portion of said plate being so curved as to contact with the central portion only of the dome-shaped portion of the closure, the marginal portion of said closure being spaced from the overlying portion of said locking plate, a holding device engaging said plate on one side of said opening, a second holding device engaging said plate on the opposite side of said opening, the edge of said locking plate between said holding devices being spaced from the upper surface of the head.

3. The combination with a container having a substantially flat head provided with an opening, of a closure mounted over said opening, said closure having a dome-shaped portion extending above the plane of the head, a locking plate having a dished or dome-shaped portion overlying and engaging the dome-shaped portion of the closure, the dome-shaped portion of said plate being so curved as to contact with the central portion only of the dome-shaped portion of the closure and means arranged on opposite sides of said opening for securing said locking plate to the head of the container, the edge of said locking plate between said securing means being spaced from the upper surface of the head.

4. A container head having an opening therein, a closure mounted over the same and having a dome-shaped portion, a dished locking plate engaging and overlying the outer surface of said closure and contacting therewith for a considerable distance on all sides of the center thereof, means arranged adjacent the margin of said head for engaging one end of said plate, a plug secured in said head adjacent the opening therein, and adjustable means engaging the other end of said locking plate and secured in said plug.

5. A container having a head provided with an opening, a chime on said container extending beyond said head, a closure mounted over said opening and having a dome-shaped portion, a dished locking plate engaging said closure and covering the same and contacting therewith for a substantial distance on all sides of the center thereof, and means for securing said locking plate in position, said closure, locking plate and fastening means being arranged within the space surrounded by said chime.

6. A container head having an opening

therein adjacent one side thereof, and also having corrugations extending in a radial direction from a point adjacent said opening to a point adjacent the margin of the head, a closure mounted over said opening and having a dome-shaped portion extending above the plane of the head, a locking plate having a dished portion engaging and covering said closure and contacting therewith for a substantial distance on all sides of the center thereof and means for securing said locking plate to said head.

7. A container having a head provided with an opening, a flange on said head surrounding said opening, a closure mounted over said opening and having a part thereof in frictional engagement with said flange, said closure having a dome-shaped portion extending above the plane of the head, a keeper secured to said head, a threaded plug mounted on said head, a dished locking plate engaging and covering said closure and contacting therewith for a substantial distance on all sides of the center thereof, means on said locking plate engaging said keeper, and a bolt engaging said locking plate and said plug, whereby said plate may be clamped against said closure.

In testimony whereof I affix my signature.

HERBERT H. HART.