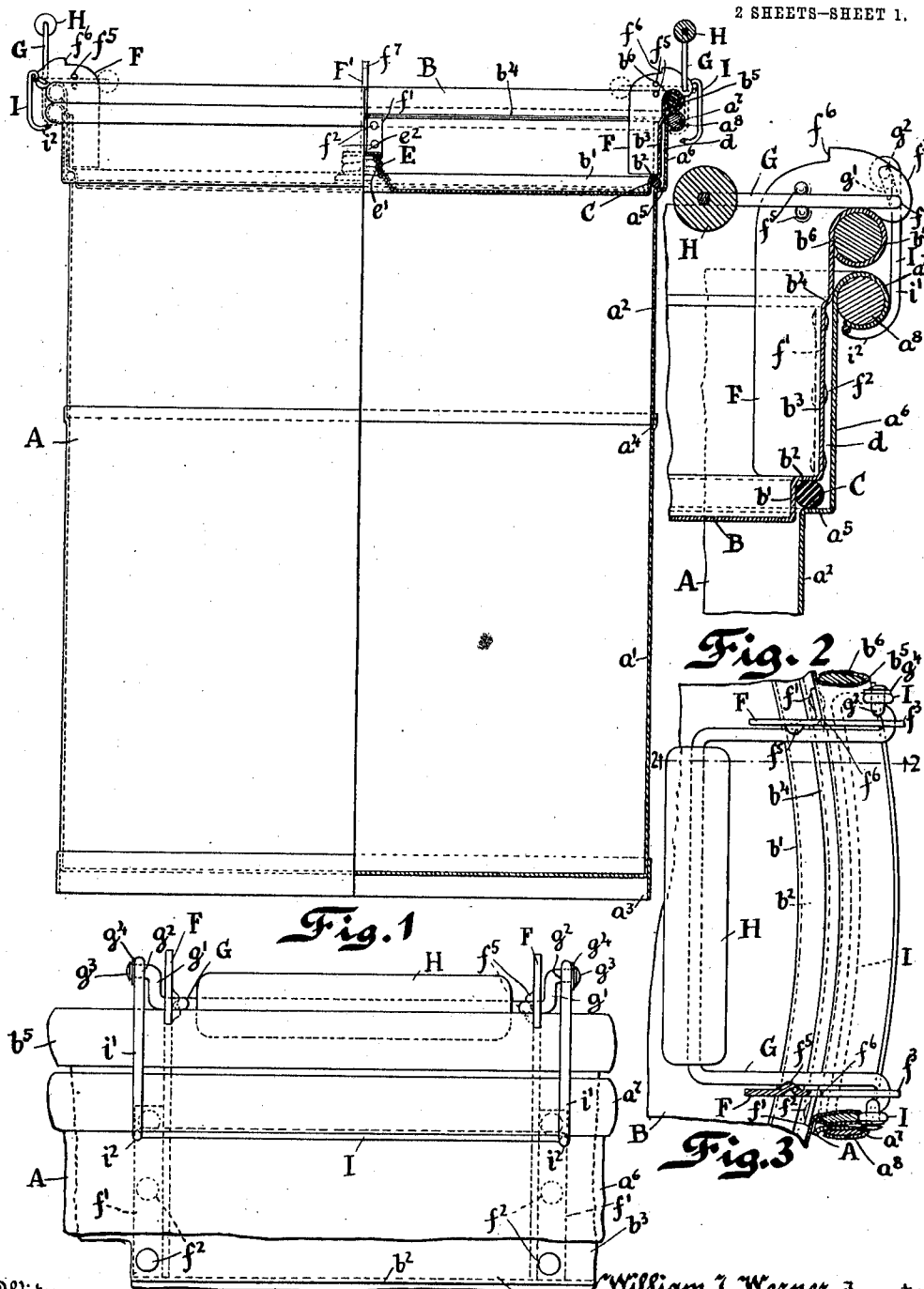


1,027,021.

Patented May 21, 1912.

2 SHEETS—SHEET 1.



Witnesses

Florence M. Mallan

Frederick D. Tucker

William J. Werner, Inventor

By George W. Moore

Attorney

W. J. WERNER.
METAL CONTAINER.
APPLICATION FILED FEB. 29, 1912.

1,027,021.

Patented May 21, 1912.

2 SHEETS-SHEET 2.

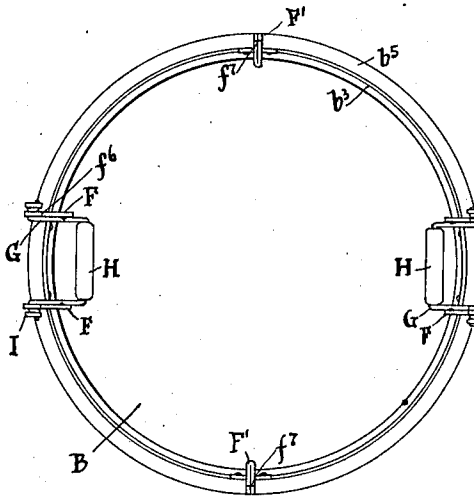


Fig. 5

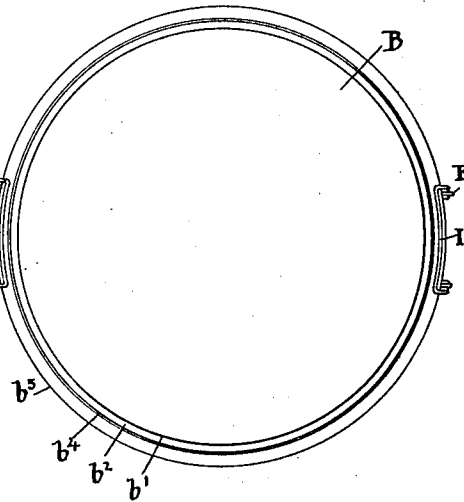


Fig. 6

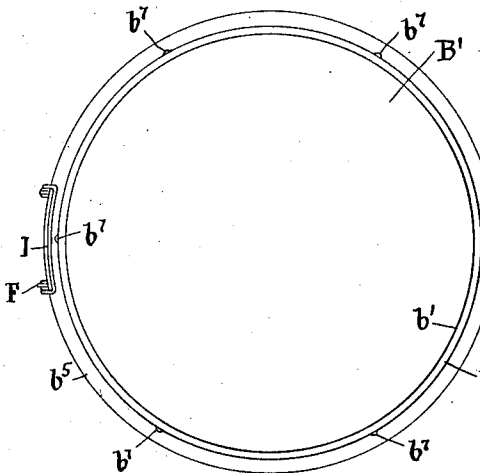


Fig. 7

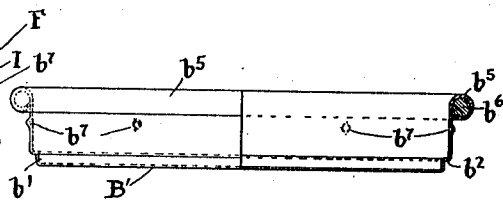


Fig. 8

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UNITED STATES PATENT OFFICE.

WILLIAM J. WERNER, OF KIEL, WISCONSIN.

METAL CONTAINER.

1,027,021.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed February 29, 1912. Serial No. 680,619.

To all whom it may concern:

Be it known that I, WILLIAM J. WERNER, of Kiel, Wisconsin, have invented a Metal Container, of which the following is a specification.

This invention relates to shipping and storing vessels, and while the principles thereof are adaptable to various kinds of vessels for different purposes, it is more particularly intended for use in shipping milk.

Milk-cans as now constructed are made of tin-plated sheet-iron, and have a reduced neck with a cover which fits within said neck. In removing and replacing the cover much friction is created against the cover and the inside of the neck so that the tin-plating soon becomes worn, more especially as the neck becomes somewhat dented and irregular by use. This exposes the iron to rust and discolors the milk, reducing its value and quality. Furthermore, such cans are difficult to clean, not only because they have crevices in which decomposable matter lodges, but because it is impossible to see the inside when cleaning it.

It is the object of the present invention to avoid these disadvantages, and more particularly to provide an improved cap or closure which, while giving a perfectly hermetic seal, shall be entirely free from sliding-surfaces between itself and the body of the can, whereby the tin-plating is preserved.

I further aim to provide an improved lock or clamp for the cover in conjunction with means for supporting one can upon another in properly aligned position.

My invention comprises the constructions and combinations which will be hereinafter described and particularly set forth in my claims.

My invention will best be understood from a consideration of the following detailed description of the most improved form thereof taken in connection with the accompanying drawings illustrating the same, and herein—

Figure 1 is a side elevation of a complete can, the right-hand half being shown in median section, and the cover in the released position ready for removal; Fig. 2 is a transverse section at one side of the can on the plan 2, and on a larger scale, showing the cover-clamp in clamping position; Fig. 3 is a plan-view of the cover-clamp and adjacent portions of the can; Fig. 4 is a front

elevation thereof from the outside of the can; Fig. 5 is a plan-view of the cover shown in Fig. 1 on a smaller scale and omitting the central air-vent; Fig. 6 is a bottom plan-view thereof; Fig. 7 is a bottom plan-view of an alternative form of cover; and Fig. 8 is as to the left-hand half an elevation and as to the right-hand half an axial section of this form of cover, omitting the clips.

The reference letters refer each to the same part in each figure of the drawings.

My improved can is of cylindrical shape and the body A is made of only two sheet-metal pieces a' and a'' , the former being drawn from a plate into cup-shape, and the latter being tubular or cylindrical. To the bottom edge of the member a' is preferably secured an annular sheet-metal strip a^3 to keep the bottom off the ground and give stability, and it will be observed that this does not introduce any seam into the inside. The union between the members a' and a'' is made by a welded joint a^4 before the metal is plated, thereby eliminating any seam-crack or roughness on the interior of the can at this point. At the upper end of the can is formed a seat a^5 for the cover, said seat consisting of an annular step increasing the diameter of the portion a^6 above it by half an inch, more or less. On the upper end of the member a'' is formed a roll or like projecting rim a^7 which for greater solidity may contain an annular wire a^8 . This completes the can-body.

The cover B is formed from a single stamping of sheet-metal, pressed into cup-shape, the same as the bottom member a' and fitting within the enlarged upper portion a^6 of the member A. Near its bottom there is an annular contraction b' which forms a seat b^2 for an annular sealing-gasket C, which may be of rubber or like material, and is held in place by friction or resiliency. It will be seen that the contracted portion b' has an external diameter slightly less than the internal diameter of the member a^2 , so that when centrally seated, it does not touch the latter. The portion of the cover b^3 which lies above the seat b^2 and subtends the portion a^6 of the can is also sufficiently less in diameter to leave a narrow open space d , so that the portion b^3 does not at any point touch the portion a^6 when the cover is seated. Opposite the upper edge of the portion a^6 , where it joins with the roll a^7 , there is formed upon the

member B a centering shoulder b^4 which has the same external diameter as the internal diameter of the wall a^6 , so as effectively to center the cover within the can, and prevent it from touching the can-body at any other point than along the line of said shoulder. The upper edge of the cover may be terminated by a suitable roll b^5 containing a wire b^6 , although this is not essential.

10 The centering-shoulder b^4 is an important element of my invention, and it is vital to the proper action of the cover, whereby the object previously referred to is attained, of obtaining a substantially tight joint without sliding-surfaces, for be it borne in mind the discoloration of the milk, which is caused by the rust consequent upon the wear produced by such sliding-surfaces, is one of the principal objections to the present can.

20 It will be seen that in placing the cover in the can, the shoulder b^4 merely touches the latter, and does not slide along it, and therefore friction is effectively eliminated even along this line. Moreover, when provided with the clamping-device to be presently described, the contents of the can and body are kept dry above the sealing-gasket C, so that rusting cannot take place under ordinary circumstances, even should the plating be worn off. Nevertheless it is not essential to the principle of my invention that the centering-shoulder b^4 should be made in a continuous annular form, although this is the simpler and preferable way of making it.

35 In Figs. 7 and 8 I have shown how the centering-shoulder may be made in the form of a plurality of separated points b^7 , which are spaced at intervals around the circumference of a circle on the side-face of the cover and may be formed individually by a punch or calking-tool after the cover has been stamped out in the dies. While the number of such points theoretically required for centering is three, it is preferable on account of the narrowness of the air-space d and the neat fit required to use at least six points, as shown in the drawing. This arrangement, while involving the same principle of centering the cover, does not have the advantage of the continuous annular shoulder of Fig. 1, that it forms an additional or secondary seal at the upper margin of the can to keep out dust; but again this latter is hardly necessary, as in practice the roll b^5 comes close to the roll a^7 when the can is sealed, and thus itself acts to exclude dust.

It should be understood that the form shown in Fig. 7 and that of Fig. 6 are really different forms of the same thing, each embodying a plurality of contact-points or elements, which abut against the inner face or edge of the can, and thus keep the body of the cover out of contact therewith; but in Fig. 6 the number of such points is infinite, whereas in Fig. 7 the number is finite. It is

also readily seen that a similar result might be accomplished by making the contact-points project inwardly from the surface of the container instead of outwardly from that of the cover.

While not deeming it essential to my invention, it may in some cases be convenient or desirable to apply an air-vent to the cover to enable it to be easily raised, this being shown at E, the cover being provided with a tubular threaded nozzle e' surmounted by a screw-cap e^2 .

To secure the cover in place, various clamping-devices may be used, one of which I have illustrated in the drawing. Upon opposite sides of the cover are mounted two pairs of sheet-metal uprights F, these being secured to the inner side thereof by means of flanges f' and rivets f^2 . Said uprights have an outwardly projecting overhang f^3 perforated at f^4 to form a pivot-bearing for a bell-crank lever G, said lever being formed of a metal rod or wire bent in bail-shaped form in the center, and conveniently provided with a cylindrical handle H. The ends of the bell-crank-lever G which project beyond the bearings f^4 are bent at right angles to the pivotal axis, as shown at g' , giving a crank of short radius, and beyond that parallel to said axis as at g^2 , forming journals for the ends of a bail-shaped member I, the ends of which are turned around the portions g^2 , and the latter to hold them in place are upset on the ends as shown at g^3 , and provided with washers g^4 , the middle-portion of the bail I, that is to say, the depending legs i' thereof are hooked as shown at i^2 , so as to engage the roll a^7 on the edge of the can-body, and it will be seen that the angle of the cranks g' is such that when closed the pivots of the bail I are carried slightly over the center, whereby the reaction of the bail tends to keep them in that position. Additional means for holding the clamping-device in clamping position may consist of two small bosses f^5 pressed up from the metal of the uprights F in position to engage the legs of the lever G when it is in the clamping position, as shown in Figs. 2 and 3, it being understood that there is sufficient resiliency in the plates and other parts to enable the lever to snap past the upper boss f^5 in opening. When the lever G is turned down into the clamping position, it acts to compress the gasket C between the seats a^5 and b^2 , and thereby hermetically seal the can at this point. In releasing the cover it is simply necessary to take hold of the handles and raise them, which not only unclamps the cover but also raises it out of the can so that no other handles are necessary.

To enable the cans to be set one upon another, as is necessary in railroad cars and at shipping-stations I may provide the up-

rights F each with an inwardly-facing shoulder f^6 , the diametral spacing of these shoulders on opposite sides being equal to or slightly greater than the outer diameter of the bottom strip a^3 , whereby any can may be set upon and between these shoulders of another can and will be held thereby in due and proper alinement, in such manner that it cannot fall off. The spacing of the two uprights F of each side is sufficiently far to make other support in most cases unnecessary; but should there be found a tendency of the cans to fall over sidewise, as where they are subject to jarring and shaking in transportation, I may provide additional uprights F' located on the inner margin of the cover midway between those heretofore described, as shown in Fig. 1 in the center, the same being provided with similar shoulders f' which will prevent such tendency to tip sidewise. It will be understood, of course that the provision of this shoulder is not essential to the general principles of my improved cover as hereinabove described.

Although I have described my invention as applied to a metallic milk-can, it will be understood by those skilled in the art that some of the principles may be also applied to vessels of other material and for other purposes.

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

1. A vessel having a projection at its upper edge, a cover therefor, uprights on the inner sides of said cover with outwardly projecting portions overhanging the upper edge of the vessel, bell-crank levers mounted in said uprights in the projecting portions thereof, and a bail-shaped member having its ends mounted in journals formed in the short arms of said levers, the depending legs of said bail member being hooked to engage beneath said projection on the upper edge of said vessel.

2. A vessel, a cover therefor, uprights on the inner sides of said cover with outwardly projecting portions overhanging the upper edge of the vessel, bell-crank levers mounted in the projecting portions of said uprights and movable into a horizontal position over said cover, bail-shaped members mounted in said bell-crank levers and having hooked portions to engage under the upper edge of the vessel, and bosses integral with said uprights to engage the legs of the bell-crank levers to hold the clamping devices in clamping position.

3. A vessel having an outward roll at its upper end, a cover therefor, uprights secured to opposite sides of said cover and having outwardly projecting perforated overhangs, bell-crank levers pivotally mounted in said overhangs and at their outer ends forming journal-bearings, a bail-shaped

member having its ends received on said journal-bearings, said bail-shaped member being hooked to engage a roll on the vessel, the angles of the cranks of said levers being disposed so that when closed the pivots of said bail are carried slightly over the center whereby the reaction of the bail tends to hold said pivots in such position.

4. A vessel having an outward roll at its upper end, a cover therefor, uprights secured to opposite sides of said cover and having outwardly projecting perforated overhangs, bell-crank levers pivotally mounted in said overhangs at their outer ends forming journal-bearings, a bail-shaped member having its ends received in said journal-bearings, said bail-shaped member being hooked to engage a roll on the vessel, the angles of the cranks of said levers being disposed so that when closed the pivots of said bail are carried slightly over the center whereby the reaction of the bail tends to hold said pivots in such position, and the said vessel being provided with projections between which the legs of said levers are engaged when in clamping position.

5. A cylindrical vessel having an open upper end, a cup-shaped cover having an open top and upstanding sides and closed bottom, and a plurality of uprights mounted on said cover and extending above the upper edge of the sides, said uprights being adapted to act as supports for the bottom of a similar container set thereupon coaxially with the first, and said uprights having each a portion depressed below the other portion, forming a shoulder on each, which shoulders are adapted to form centering and abutment-means for the bottom of said second container.

6. A cylindrical vessel having an open upper end, a cup-shaped cover having an open top and upstanding sides and closed bottom, and a plurality of plate-shaped uprights set in radial planes mounted on said cover and extending above the upper edge of the sides, said uprights being adapted to act as supports for the bottom of a similar container set thereupon coaxially with the first, and said uprights having their inner portions depressed below the outer portions, forming a shoulder on each, which shoulders are adapted to form centering and abutment-means for the bottom of said second container.

7. A container or vessel of cylindrical form and having an enlarged internal diameter near its upper edge separated from the main diameter by an annular shoulder, and a cover adapted to fit loosely within said enlarged diameter and carrying on its lower edge an annular gasket adapted to rest upon said shoulder.

8. A container or vessel of cylindrical form and having an enlarged internal diam-

eter near its upper edge separated from the main diameter by an annular shoulder, and a cover adapted to fit loosely within said enlarged diameter and carrying on its lower edge an annular gasket adapted to rest upon said shoulder; in conjunction with clamping means adapted to secure said cover to said body.

9. A container or vessel of cylindrical form and having an enlarged internal diameter near its upper edge separated from the main diameter by an annular shoulder, and a cover adapted to fit loosely within said enlarged diameter and carrying mounted on its lower edge an annular gasket adapted to rest upon said shoulder, the external diameter of said cover being sufficiently smaller than the internal diameter of said enlarged portion of the body so as not to touch the same when centered, and said cover having centering means adapted to center it with respect to said body.

10. A container or vessel of cylindrical form and having an enlarged internal diameter near its upper edge separated from the main diameter by an annular shoulder, and a cover adapted to fit loosely within said enlarged diameter and carrying mounted on its lower edge an annular gasket adapted to rest upon said shoulder, the external diameter of said cover being sufficiently smaller than the internal diameter of said enlarged portion of the body to be out of contact with the same when centered, and said cover having a projecting annular shoulder adapted to abut against the inner face of said enlarged portion of the body when the cover is seated so as to center it with respect thereto.

11. The combination of a container or vessel, a cover therefor, and a pair of devices on opposite sides of said cover adapted to engage and clamp it to said body; said devices having handles which when depressed are in the clamping position and when raised act as means for raising the cover, and said devices clearing said body in the raised position of said handles, whereby said cover can be released and raised, or set and clamped, by a single movement.

12. A container or vessel of cylindrical form having near its upper edge an enlarged external diameter separated from the main diameter by a plane annular shoulder, said shoulder being at right angles to the sides of the container; and a cover adapted to fit loosely within said enlarged diameter and having its lower marginal edge recessed in an annular rabbet, and an annular elastic gasket fitting in said rabbet and maintained therein by its elasticity, and adapted to press axially upon said shoulder and form a seal for the cover.

13. A cylindrical cup-shaped sheet-metal cover for a vessel or container having its lower marginal edge annularly rabbeted, the

rabbet being of rectangular section and the sides thereof being respectively cylindrical and plane, that is to say parallel to and at right angles with the axis of said cover; and a flexible elastic gasket lying in said rabbet and adapted to form a seal for said cover.

14. A container or vessel of cylindrical form having an enlarged internal diameter near its upper edge separated from the main diameter by an annular shoulder, and a cover having a plurality of contact points along a circle of such external diameter as to touch the said enlarged internal diameter of the body of the container and permit said cover to come into contact therewith at such points only, said cover below said centering shoulder being of less diameter than the corresponding diameter of said vessel so as to be out of contact therewith when seated.

15. A container or vessel of cylindrical form having an enlarged internal diameter near its upper edge separated from the main diameter by an annular shoulder, and a cover having a plurality of projecting elements lying along a circle of such external diameter as to touch the said enlarged internal diameter of the body of the container and engage the cover therewith at such points only, said vessel and cover having outturned reinforced rolls in substantial alignment with each other.

16. A container or vessel of cylindrical form having an enlarged internal diameter near its upper edge separated from the main diameter by an annular shoulder, and a cover having a plurality of projecting elements lying along a circle of such external diameter as to touch the said enlarged internal diameter of the body of the container and engage the cover therewith at such points only and at its lower end a contracted portion of less diameter than the body of the container and a seat, and a gasket elastically grasping said contracted portion and resting on said seat; and the body of the container having a seat at the junction of the main and enlarged diameters thereof.

17. A container or vessel of cylindrical form having an enlarged internal diameter in its upper part separated from the main diameter by an annular shoulder, a cover fitting within said enlarged internal diameter and having on its lower edge an annular seat, and a compressible packing-ring between said shoulder and seat, said cover being adapted to be depressed so as to compress said packing-ring; said cover having further the upper portion of its outer surface of the same diameter as the internal surface of said enlarged diameter of the container so as to abut thereagainst, and its lower external surface of less diameter so as to be at all times out of contact with said container; the upper larger-diametered

portion of said cover forming thereby a secondary seal or closure.

18. A container or vessel of cylindrical form having an enlarged internal diameter in its upper part separated from the main diameter by an annular shoulder, a cover fitting within said enlarged internal diameter and having on its lower edge an annular seat, and a compressible packing-ring between said shoulder and seat, said cover being adapted to be depressed so as to compress said packing-ring; said cover having further the upper portion of its outer surface of the same diameter as the internal surface of said enlarged diameter of the container so as to abut thereagainst, and its lower external surface of less diameter so as to be at all times out of contact with said container; the upper larger diametered portion of said cover forming thereby a secondary seal or closure; said container having further on its upper edge an outwardly turned roll and said cover on its upper edge also an outwardly turned rim, which when said cover is depressed upon said packing-ring comes approximately into contact with said roll thereby forming a tertiary closure.

19. A container or vessel of cylindrical

form having an enlarged internal diameter in its upper part separated from the main diameter by an annular shoulder, a cover fitting within said enlarged internal upper portion and having at its lower edge an annular seat, a compressible packing-ring disposed between said seat and shoulder and adapted to be compressed between them, the external diameter of said cover being sufficiently less than said enlarged internal diameter of the container to be at all times out of contact therewith when properly centered; and outwardly turned rims on the upper edges of the cover and container respectively, said rims being adapted to come into approximate contact along a circular line when the cover is in place, and thus form a secondary closure; said cover and container having mutually contacting elements which act to center the cover within the enlarged upper portion of said container.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WM. J. WERNER.

Witnesses:

W. J. GUETZLOE,
OSCAR GRAF.