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G. W. WEBER.
OPEN MOUTHED FRICTION TOP CAN OR VESSEL.

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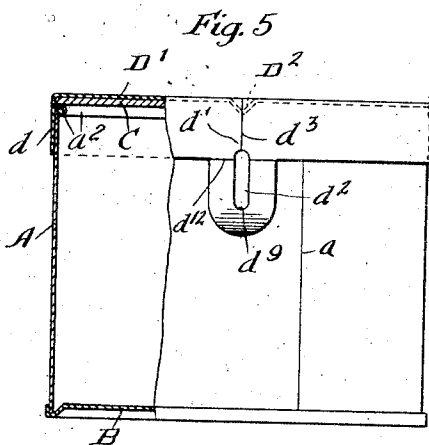
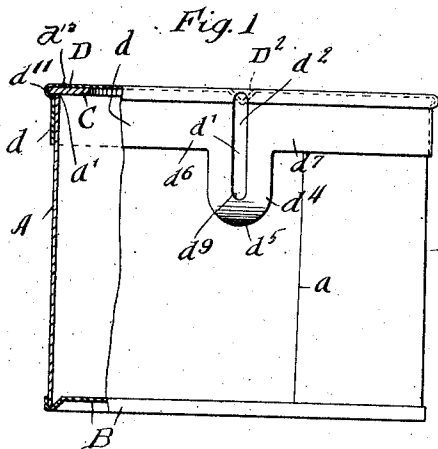
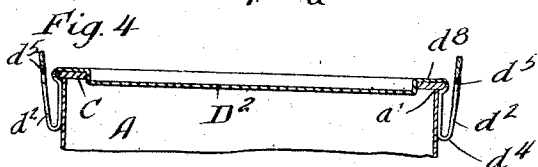
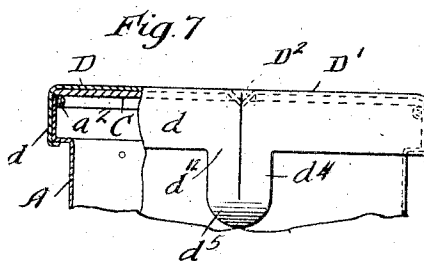
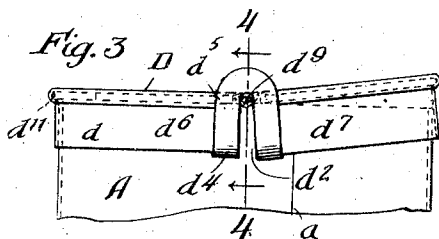
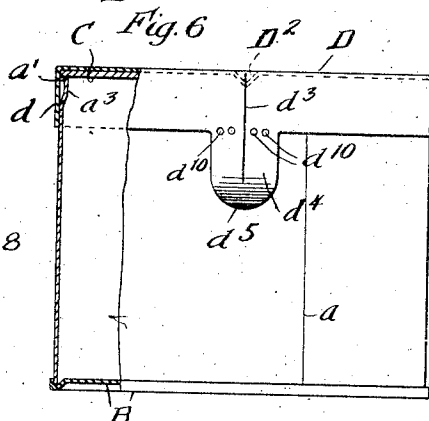
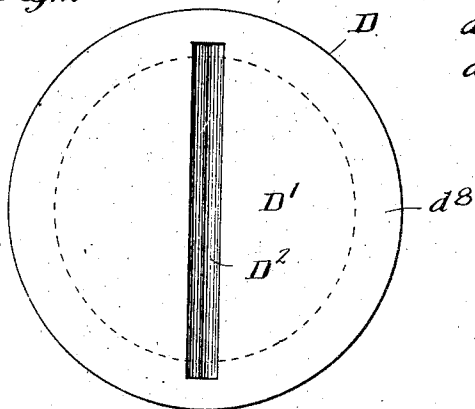


Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE W. WEBER, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

OPEN-MOUTHED FRICTION-TOP CAN OR VESSEL.

No. 893,769.

Specification of Letters Patent.

Patented July 21, 1908.

Application filed April 2, 1906. Serial No. 309,253.

To all whom it may concern:

Be it known that I, GEORGE W. WEBER, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county of New York and State of New York, have invented a new and useful Improvement in Open-Mouthed Friction-Top Cans or Vessels, of which the following is a specification.

13 My invention relates to friction top closures for cans or other vessels, and more particularly to improvements in closures for cans of the kind or class having full open mouths or upper ends, and in which no annular top is employed to receive the removable cap or cover. Heretofore in cans of this kind or class having no annular tops, so that the mouth or opening may be of substantially the full diameter of the body of the can or vessel, considerable difficulty has heretofore been experienced in practically effecting a tight and secure closure of the friction cover on the body of the can or vessel, owing to the fact that, while the cover is stamped in one piece out of a blank by suitable dies, and thus can be made uniformly of the exact diameter and size required, the bodies of the cans, being made by forming a rectangular blank into cylindrical shape and uniting its meeting ends by a side seam, the can bodies necessarily vary in size or diameter more or less, so that the required tight friction fit between the flange of the cover and the can body, necessary to effect a tight and secure closure, cannot be uniformly obtained, the can bodies sometimes fitting the cover too loosely and sometimes too tightly, and thus causing the flange of the cover to be stretched or broken.

40 The object of my invention is to provide a full open mouthed friction cover can of a simple, efficient and durable construction capable of being tightly and securely closed, and at the same time readily opened.

45 My invention consists in the means I employ to practically accomplish this object or result; that is to say, it consists, in connection with an open mouthed can body, of any suitable kind or construction, of a friction cover therefor having a flange surrounding and embracing the upper end of the can body, and furnished with a slit, slot or severance extending across the cover flange, and provided with an integral lip projecting from the lower edge of the cover flange on each

side of the slot or slit which severs or divides the cover flange, so that while the cover flange is thus made continuous by its integral projecting lip, the flange is, nevertheless, adapted to expand or open at the slot or slit to the extent necessary to cause it to accommodate itself to the unavoidable variations in the size of the can body, and thus effect a tight and secure closure. The slit or slot extending across the cover flange may also, preferably, extend into the lip which projects from the lower edge of the cover flange, simply leaving at the lower portion of the lip sufficient body of metal to give the requisite strength to the elastic or expandible band formed by the severed cover flange and the lip, and which surrounds and embraces the can body and gives the cover the requisite tight elastic grip or frictional fit thereon to properly seal the can and compress the sealing disk or gasket, which is interposed between the cover and the upper end of the can body; as by this means I am enabled to readily and conveniently open my improved can by simply bending or folding the lip upward against the cover flange, thus enabling the two parts of the cover flange on each side of the slit to spring apart and thereby loosen the grip of the cover flange on the can body so that the cover may be removed. To facilitate this operation the top of the cover may preferably be provided with a V-groove, or other channel extending diametrically across it except at the annular rim portion which compresses the sealing disk or gasket against the upper edge of the can body. If preferred however my elastic expandible friction cover with continuous lipped cover flange, having a slit or slot extending across the cover flange, may be provided with a row of perforations, a score or other weakened line extending across the lip so that the lip may be readily broken off and the continuity of the cover flange thus destroyed by entirely removing the lip which bridges the slitted, slotted or severed portion of the cover flange. Or in opening the can if desired the lip may be broken off by simply repeatedly bending it up and down without providing it with any perforations, score or weakened line to facilitate its removal. As before said however, I prefer to practice my invention without breaking off or removing the slit-bridging lip of the cover flange by simply bending it upward against the cover flange,

as before described, the slit or slot being extended part way across the lip, as I am thus enabled to again apply the cover and effect a tight closure by simply bending the lip down again.

The lip may be formed on the cover flange without requiring any increased stock or extra cost, as, in stamping out the covers from a sheet in the customary staggered layout, there is a corner space between the circular cuts which permits the projection of the lip on two sides without taking up any additional stock, the lip being cut entirely from the waste space or stock between the centers. My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown or described.

In the accompanying drawing, forming a part of this specification, Figure 1 is a side elevation, partly in vertical section, of an open mouth friction cover can embodying my invention; Fig. 2 is a plan view; Fig. 3 is a front elevation, showing the slit or slot bridging lip after it is bent up against the flange of the cover preparatory to opening the can; Fig. 4 is a partial section on line 4-4 of Fig. 3; Fig. 5 is a side elevation, partly in vertical section illustrating a modification; Fig. 6 is a side elevation, partly in vertical section, illustrating a further modification. Fig. 7 illustrates a modification in which my improvement is applied to a vessel having an external shoulder on the body thereof.

In the drawing A represents the can body having the customary side seam a , B the lower head or bottom, C the sealing disk or gasket, and D the friction cover. The can body A has an open upper end or mouth a^1 , preferably of the full diameter or substantially the full diameter of the body. This upper end a^1 may, if desired, have a roll, fold, or rounded shoulder a^2 , as shown in Fig. 5, to give a better seat or bearing for the upper end of the can against the sealing disk or gasket C. Or, if preferred, the upper end of the can body may be slightly contracted in diameter, as indicated at a^3 in Fig. 6. Ordinarily however I prefer to make the upper end or sealing seat a^1 of the can body plain or straight, as indicated in Fig. 1.

The lower head or bottom B of the can may be secured to the can body by any suitable form of seam, folded or soldered, customarily used in the art.

The sealing disk or gasket C may be made of any suitable construction or material customarily employed for this purpose, such for example as paper or cardboard faced with parchment paper or other non-soluble surface, which is tasteless or not injurious to the material contained in the can or vessel.

The sheet metal cover D of the can has an integral flange d which surrounds, embraces

and tightly engages the upper portion of the can body, and is adapted to be forcibly and tightly driven upon the can body so as to engage the same with a tight grip or frictional fit sufficient to hold the sealing disk or gasket properly compressed, and thus produce a tight and secure closure of the can. This cover flange d is severed at d^1 , the severed line being preferably formed by a narrow slot d^2 , as shown in Figs. 1 and 4, or by a simple slit d^3 , as shown in Figs. 5 and 6. This cover flange although thus having a severed line extending across, or partially across, its width, is nevertheless made continuous by an integral lip d^4 projecting from its lower edge, and which bridges the severed portion of the cover flange, and thus while preserving the continuity of the cover flange, making it nevertheless elastic or expandible, so that the flange may readily accommodate itself to the variations in the size or diameters of the can bodies to which the covers are to be applied, so that the cover will always properly and tightly fit or frictionally grip the can body and thus produce a tight and secure closure. The integral lip d^4 serves not only to elastically bridge in a bent line the severance in the cover flange but also as a finger piece to loosen the cover flange on the can body, thus enabling the can to be readily opened with the fingers and without the necessity of employing any separate opening tool.

The length or depth of the slit bridging lip d^4 of the cover flange preferably somewhat exceeds the width of the cover flange d , so that when this lip d^4 is bent upward against the cover flange, preparatory to opening the can, the continuous portion d^5 of the lip at the base or lower end of the severed line or cut portion d^1 , will be substantially in line with the top face of the cover to facilitate the springing apart of the two parts d^6 d^7 of the cover flange d on each side of the severing line d^1 , as indicated in Fig. 4. To further facilitate this action the top or disk portion D^1 of the cover is, preferably, furnished with a V or other groove D^2 extending diametrically across the cover excepting at the marginal or rim portion d^8 thereof, which forms the seat or bearing for the sealing disk or gasket; this V diametric groove or channel serves somewhat as a pivot or axis for the two parts of the cover to swing or spring apart about, as will be readily understood from Fig. 4. The lower extremity of the severance d^1 may, preferably, have a rounded portion d^9 , as this construction adds to the strength and expansibility of the lip d^4 which bridges the slitted, slotted or severed end portion of the cover flange.

In the modification illustrated in Fig. 5 the integral continuous slit bridging lip d^4 of the cover flange, is provided with a score or weakened line d^{12} extending across the lip

d^4 , preferably in line with the lower edge of the cover flange, to enable the lip to be readily broken off or removed in opening the can or vessel. And in Fig. 6 a similar modified construction is shown that the weakened line is formed by a row of perforations d^5 instead of a score or weakened line.

In the modification illustrated in Fig. 7 I have illustrated my invention as applied to a jar or vessel having an external shoulder under which the lower edge of the cover flange may be bent or crimped, and in which the lip projecting from the lower edge of the cover flange and bridging the severance in the cover flange is adapted to be broken off at or near the lower edge of the cover flange simply by repeated bendings without any score or weakened line as hereinbefore mentioned.

The cover D is, preferably, furnished with a peripheral or annular recess d^6 to receive the edge or rim of the sealing disk or gasket C, the same serving to hold the sealing disk or gasket C in place, and also to give a better bearing for the upper end or gasket seat d^7 of the can body against the sealing disk or gasket, especially when the can body is made plain or straight at its upper end, as shown in Figs. 1, 3 and 4.

By providing the cover with two integral lips d^1 and two severances d^2 diametrically opposite each other and in line with the groove or channel D^2 , the cover is adapted to be very easily removed when the integral lips d^1 are bent upward against the flange d , as will be readily understood from Figs. 2, 3 and 4 of the drawing.

If desired the wall of the friction cover D may be furnished with a small vent opening d^3 to permit air to escape from the interior of the can while the friction cover is being forced home thereon, this vent opening being sealed or closed by the sealing disk or gasket C when the cover is forced completely home.

I claim:

1. In an open mouth friction top can, the combination with the can body having a seat at its upper end for a sealing disk or gasket, of a friction cover provided with a flange surrounding and embracing the upper end of the can body, and having a severance extending across it and furnished with an integral continuous lip below the lower edge of the cover flange and bridging the severance, whereby the cover flange is adapted to accommodate itself to variations in the size of the can body and tightly fit and frictionally grip the same so as to tightly and securely seal the can, the severance in the cover flange extending into the lip, and the lip being adapted to be bent upward against the cover flange to loosen the grip of the cover flange on the body, substantially as specified.

2. In an open mouth friction top can, the combination with a can body, of a friction

cover having a severed flange surrounding and embracing the can body, provided with an integral continuous lip projecting from the edge of the cover flange and bridging the line of severance in the cover flange, the line of severance in the cover flange extending into the lip, substantially as specified.

3. In an open mouth friction top can, the combination with a can body, of a friction cover having a severed flange surrounding and embracing the can body, provided with an integral continuous lip projecting from the lower edge of the cover flange and bridging the line of severance in the cover flange, the line of severance in the cover flange extending into the lip to an extent substantially equaling the width of the cover flange, and the cover flange being adapted to be bent upward to loosen the grip of the cover flange on the body, substantially as specified.

4. In an open mouth friction top can, the combination with a can body, of a friction cover having a severed flange surrounding and embracing the can body, provided with an integral continuous lip projecting from the edge of the cover flange and bridging the line of severance in the cover flange, and furnished with means for loosening the grip of the cover flange on the body, the severance of the cover flange extending into the lip, substantially as specified.

5. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with a severance and an integral projecting lip bridging the severance in the cover flange, the severance in the cover flange being a slot extending into the lip, substantially as specified.

6. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with a severance and an integral projecting lip bridging the severance in the cover flange, the severance in the cover flange being a slot extending into the lip to an extent substantially equaling the width of the cover flange, and the lip being adapted to be bent upward to loosen the grip of the cover flange on the body, substantially as specified.

7. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with a severance and an integral projecting lip below the lower edge of the cover flange and bridging the severance extending across it to its lower edge in the cover flange, a sealing disk or gasket interposed between the body and the cover, and the cover having a peripheral recess to receive the rim or edge of the sealing disk said integral lip acting also as a finger piece for loosening the cover flange on the can body, substantially as specified.

8. In an open mouth friction cover can or

vessel, the combination with the body of a friction cover having a flange surrounding and embracing the body and furnished with a severance across the flange, and an integral lip projecting from the lower edge of the flange on both sides of the severance in the flange, said severance in the flange extending into the lip, substantially as specified.

9. In an open mouth friction cover can or vessel, the combination with the body, of a friction cover having a flange provided with a severance and an integral projecting lip below the lower edge of the cover flange and bridging the severance extending across it to its lower edge in the cover flange, and a sealing disk or gasket interposed between the body and the cover, said cover having an annular peripheral recess to receive the edge of the sealing disk or gasket, said integral lip acting also as a finger piece for loosening the cover flange on the can body, substantially as specified.

10. In an open mouth friction cover can or vessel, the combination with the body, of a friction cover having a flange provided with a severance and an integral projecting lip bridging the severance in the cover flange, and a sealing disk or gasket interposed between the body of the cover, said cover having in its top a groove or channel extending across it, substantially as specified.

11. In an open mouth friction cover can, the combination with a can body, of a friction cover having a severed flange surrounding and embracing the can body, provided with an integral continuous lip projecting from the edge of the cover flange and bridging the line of severance in the cover flange, the line of severance in the cover flange extending into the lip, and the cover flange being adapted to be bent upward to loosen the grip of the cover flange on the body, and the top of the cover having a groove or channel across it to facilitate the loosening of the cover upon the can body when the lip is bent upward, substantially as specified.

12. In an open mouth friction cover can or vessel, the combination with the body, of a friction cover having a flange provided with a severance and an integral projecting lip bridging the severance in the cover flange, the severance in the cover flange being a slot extending into the lip, and the lip being adapted to be bent upward to loosen the grip of the cover flange on the body, and the top

of the cover having a groove or channel across it to facilitate the loosening of the cover upon the can body when the lip is bent upward, substantially as specified.

13. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with diametrically opposite severances and diametrically opposite projecting lips bridging the severances in the cover flange, and a groove in the top of the cover extending across the same in line with said severances, substantially as specified.

14. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with diametrically opposite severances and diametrically opposite projecting lips bridging the severances in the cover flange, and a groove in the top of the cover extending across the same said severances in the cover flange extending into said lips to an extent substantially equaling the width of the cover flange, substantially as specified.

15. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with diametrically opposite severances and diametrically opposite projecting lips bridging the severances of the cover flange, and a sealing disk or gasket interposed between the body and the cover, said severances extending into said lips, and said lips being adapted to be bent upward to loosen the cover flange on the body, substantially as specified.

16. In an open mouth friction top can or vessel, the combination with the body, of a friction cover having a flange provided with diametrically opposite severances and diametrically opposite projecting lips bridging the severances in the cover flange, and a sealing disk or gasket interposed between the body and the cover, said severances extending into said lips, said lips being adapted to be bent upward to loosen the cover flange on the body, and said cover having in its top a diametric channel in line with said severances, said severances in the cover flange extending into said lips to an extent substantially equaling the width of the cover flange, substantially as specified.

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