

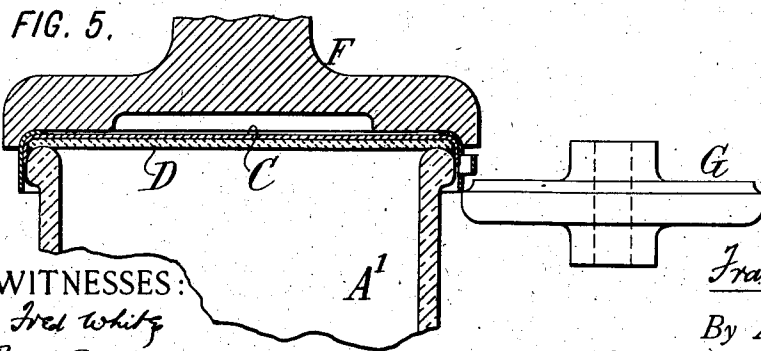
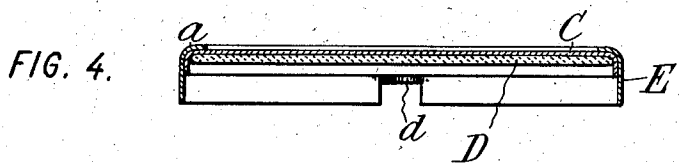
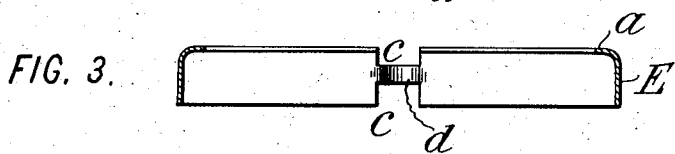
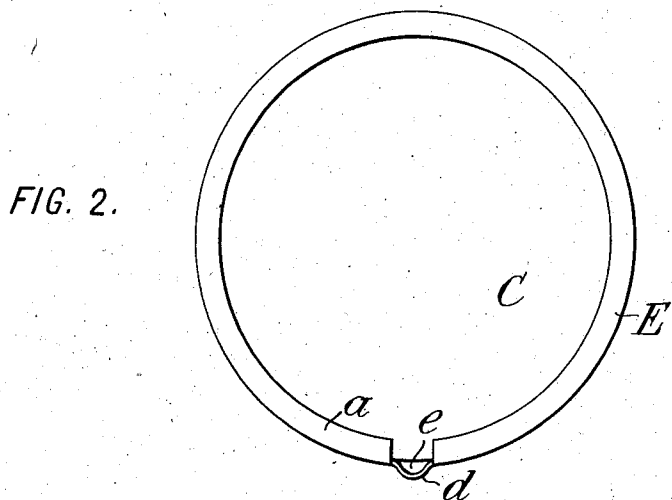
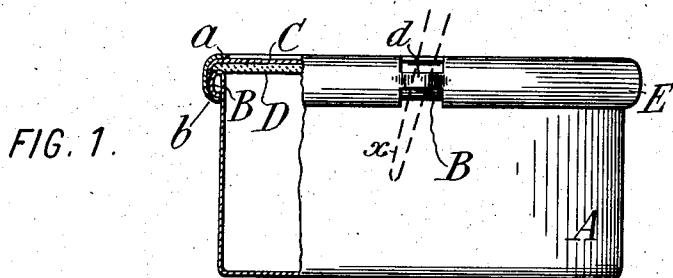
No. 751,335.

PATENTED FEB. 2, 1904.

F. C. B. PAGE.
CLOSURE FOR VESSELS.
APPLICATION FILED MAR. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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INVENTOR:

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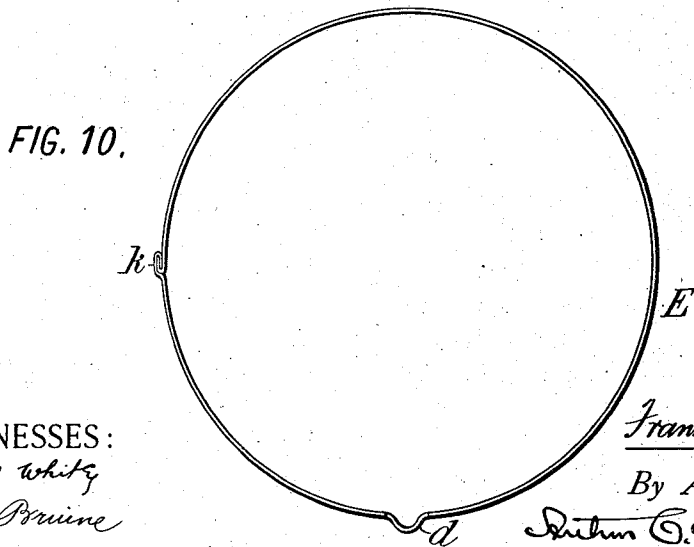
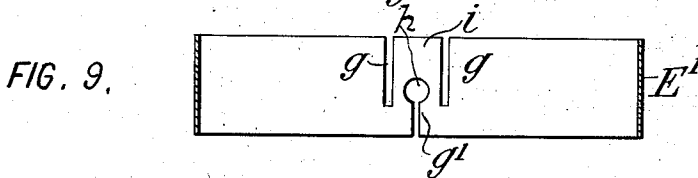
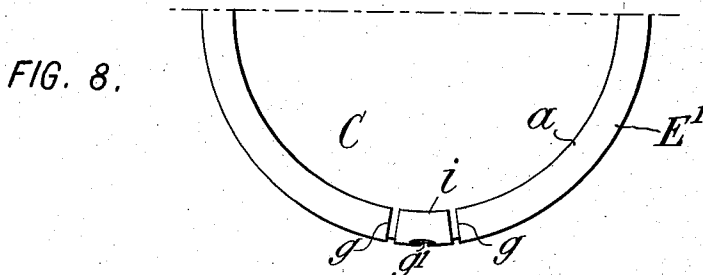
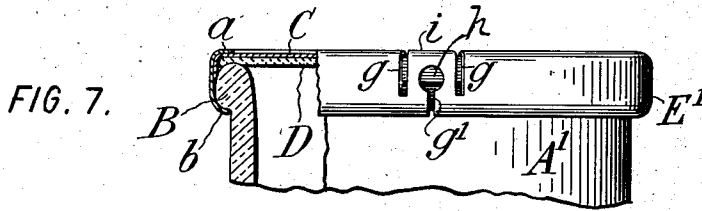
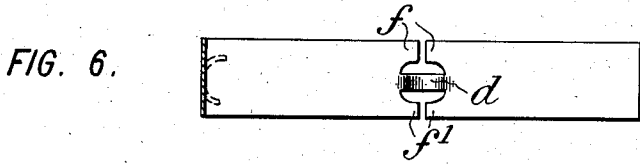
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANK C. B. PAGE, OF NEW YORK, N. Y., ASSIGNOR TO AIR TIGHT CLOSURE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CLOSURE FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 751,335, dated February 2, 1904.

Application filed March 21, 1903. Serial No. 148,820. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. B. PAGE, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Closures for Vessels, of which the following is a specification.

This invention aims to provide an improved closure for vessels—such as cans, bottles, jars, or the like—which may be readily and cheaply applied, which affords a secure closure, and which is easily opened and when once opened cannot be resealed. To these ends I provide a band circumferentially encircling the top or mouth of the vessel and which when applied is bent or crimped inward at its upper edge to overlie the cover and at its lower edge to underlie the shoulder or flange at the top or mouth of the vessel, the band being weakened at one or more points in its circumference by being cut partly through and having at or near such weakened portion a part shaped to permit ready engagement by an opening-tool, preferably by bending up a lip or strip to form an eye, through which such tool may be inserted. The band is continuous and preferably seamless and may have one edge turned in before being applied, or both edges may be turned in in the act of applying.

Figure 1 of the accompanying drawings is an elevation of a tin can to which my closure is applied, the view being partly in vertical mid-section. Fig. 2 is a plan of the can or vessel shown in Fig. 1. Fig. 3 is a diametrical section of the band before being applied. Fig. 4 is a similar section of the band and cover attached together before being applied. Fig. 5 is a diametrical section showing the cover and band in place on the mouth of a bottle or jar and illustrating the means for and method of applying the closure. The remaining figures illustrate modifications. Fig. 6 is a diametrical section of a band of cylindrical form adapted to be turned in at both its upper and lower edges. Fig. 7 is a fragmentary elevation, partly in section, showing a modified form of band applied to close a bottle or jar. Fig. 8 is a half-plan of Fig. 7. Fig. 9

is a diametrical section of the band used in Figs. 7 and 8 before being applied. Fig. 10 is a plan view of the same.

Referring to the drawings, let A designate the vessel to which the closure is to be applied, the mouth or rim thereof being formed with an external shoulder B.

C is a comparatively loose temporary cover for use after the band has been destroyed, preferably of sheet metal, and which is preferably formed with a downwardly-turned circumferential flange, as shown.

D is a disk of packing material—such as paper, rubber, or the like—which may be used or not.

E is the fastening or sealing band.

The band E is made of sheet metal and is a continuous circumferential band, which for vessels of small diameter will ordinarily and preferably be seamless, but for those of large diameter it may be formed of a strip bent into cylindrical form and having its ends united by any suitable seam. The band may be made of cylindrical form, as shown in Fig. 6, or preferably it may be made with one edge, and preferably the upper edge, turned in to form a flange *a*, as shown in Fig. 3. Preferably the band is made of close fit with the cover, so that the cover can be entered into the band, as shown in Fig. 4, and will then be held frictionally thereto, so that the two can be handled as one piece.

In applying the closure the cover is placed upon the vessel with the band around the cover. Pressure is then brought to bear to force the cover and band tightly down upon the mouth of the vessel, and while maintaining the pressure the lower edge of the band is then crimped or spun in to tightly embrace the shoulder on the vessel and hold the cover and vessel firmly together. When the closing operation is complete and the external pressure removed, the band by reason of its upper flange *a* overlying the cover and its lower flange *b* underlying the shoulder B serves to hold the cover so tightly pressed upon the vessel as to maintain the requisite degree of compression of the packing to prevent any possible leakage. To attain this result, the lower

flange of the band is turned in under considerable pressure.

Fig. 5 shows one suitable means for applying the band shown in Figs. 3 and 4. In this case the vessel is a bottle or jar A'. The cover and band are pressed down by a chuck or follower F. The vessel and chuck are rotated by well-known means, and a crimping-roll G is moved toward the vessel, thereby turning in the lower edge of the band to form the flange b.

To enable the band to be readily broken and removed, so that the cover may be taken off, the band is weakened at some suitable point by cutting into or through it for a suitable distance. Preferably it is notched out on opposite sides at c c, Fig. 3, so as to leave a narrow tongue of metal d of sufficient strength to preserve the circumferential continuity of the band. This tongue is preferably bent outward, as shown in Fig. 2, to form an opening e, through which a tool can be inserted, as indicated in dotted lines at x in Fig. 1. By turning or twisting this tool the strip d is easily broken, whereupon the band, being no longer held circumferentially, loosens its hold and is easily pulled off to free the cover.

The forming of the notches c leaves a wide space on the top of the can which is not covered by the upper flange a of the band, and in case this is objectionable the metal may be cut away in the form shown in Fig. 6, whereby ears f f are formed which will substantially or may entirely close this space, and similar ears f' may be formed beneath.

Figs. 7, 8, and 9 show another closure wherein the band, here lettered E', is weakened by forming opposite slits or cuts g g', the middle cut being preferably formed with an enlargement or hole h. Between the two cuts g g' is formed an ear i, which when the band is applied partly overlies the cover C, forming part of the flange a. To open the vessel, it is only necessary to force a suitable opening-tool, such as a knife-blade, under the ear i and pry it up, whereby the metal weakened between the slits or on opposite sides of the hole h is easily broken or stretched, so as to liberate the band. The opening-tool may be applied by thrusting it into the hole h, if preferred. In effect the eye e between the bowed portion of the strip and the cover and the eye h, formed directly in the band, are substantial equivalents.

Fig. 10 shows a band which instead of being seamless is made with a lock-seam k in the manner well known to sheet-metal workers and which may be soldered or not. The seam or lock-joint may be made at any convenient point of the circumference.

The closure provided by my invention is very cheaply made and very easily and expeditiously applied to a filled vessel. It affords a perfectly secure and leak-tight joint capable of withstanding all the strains of transportation and storage. It is easily and instan-

taneously opened and when once opened has the advantage that it cannot be again sealed, whereby an important security is afforded against the fraudulent refilling of vessels or packages.

My invention is to be distinguished from those closures in which a strip is bent into circular form with its opposite edges turned in to form flanges, being then applied around the top of a vessel and its ends drawn together and soldered. With such a fastening-strip it is difficult or impossible to so apply it as to hold the cover pressed forcibly down upon the mouth of the vessel, and it is difficult to apply such strip, and the necessity for soldering its ends is a serious practical disadvantage. My invention is also to be distinguished from those closures in which a sheet-metal ring is passed down over the cover and can-top and has its lower edge, which is notched at intervals, turned in to form ears underlying a shoulder on the can and which ears have to be bent out in order to open the can, the bending out of such ears being a tedious and difficult process and leaving the ring intact, so that the can can be fraudulently refilled and reclosed by again bending in the ears.

My invention is susceptible of considerable modification in its mechanical details without departing from its essential features as herein indicated.

No claim is made in the present application specifically covering the feature of a band formed of a flat strip with its ends brought together and united, as shown in Fig. 10, the same being claimed in a divisional application, Serial No. 179,159, filed October 30, 1903.

I claim as my invention—

1. A vessel having an external shoulder, a loose temporary cover therefor having a downwardly-turned circumferential flange, and a continuous circumferential band of sheet metal having its edges bent inward to form flanges overlying the cover and underlying said shoulder to hold the cover pressed tightly on the vessel, said band weakened at a point in its circumference and adapted to be readily broken at such weakened point to release the cover.

2. A vessel having an external shoulder, a cover therefor, and a continuous circumferential band of sheet metal having its edges bent inward to form flanges overlying the cover and underlying said shoulder to hold the cover pressed tightly on the vessel, said band being weakened at a point in its circumference, and an eye being provided to receive an opening-tool adjacent to such weakened point whereby it may be readily broken at such point.

3. A vessel having an external shoulder, a loose temporary cover therefor having a downwardly-turned flange, and a continuous circumferential band of sheet metal having its edges bent inward to form flanges overlying

the cover and underlying said shoulder to hold the cover pressed tightly on the vessel, said band cut partly through from opposite sides whereby it is weakened, and adapted to be readily broken at such weakened point to release the cover.

4. A vessel having an external shoulder, a cover therefor, and a continuous circumferential band of sheet metal having its edges bent inward to form flanges overlying the cover and underlying said shoulder to hold the cover pressed tightly on the vessel, said band cut partly through from opposite sides whereby it is weakened, and a narrow strip is formed, and said strip bowed outward to form an eye to receive an opening-tool whereby the band may be readily broken.

5. A continuous circumferential band of sheet metal for holding the cover on a vessel, cut partly through at a point in its circumference whereby it is weakened, and shaped to provide an eye to receive an opening-tool

adjacent to such weakened point whereby such weakened portion may be readily broken.

6. A continuous circumferential band of sheet metal for holding the cover on a vessel, cut partly through from opposite sides to form notches with a narrow strip between, and said strip bowed outwardly.

7. A seamless drawn band of sheet metal for holding a cover on the mouth of a vessel, so weakened at a point in its circumference that at such point it may be readily broken, and shaped to provide an eye to receive an opening-tool adjacent to such weakened point whereby it may be quickly torn to permit its removal.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK C. B. PAGE.

Witnesses:

ARTHUR C. FRASER,
THEODORE T. SNELL.