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R. H. McCOY.

JAR AND FASTENER THEREFOR.

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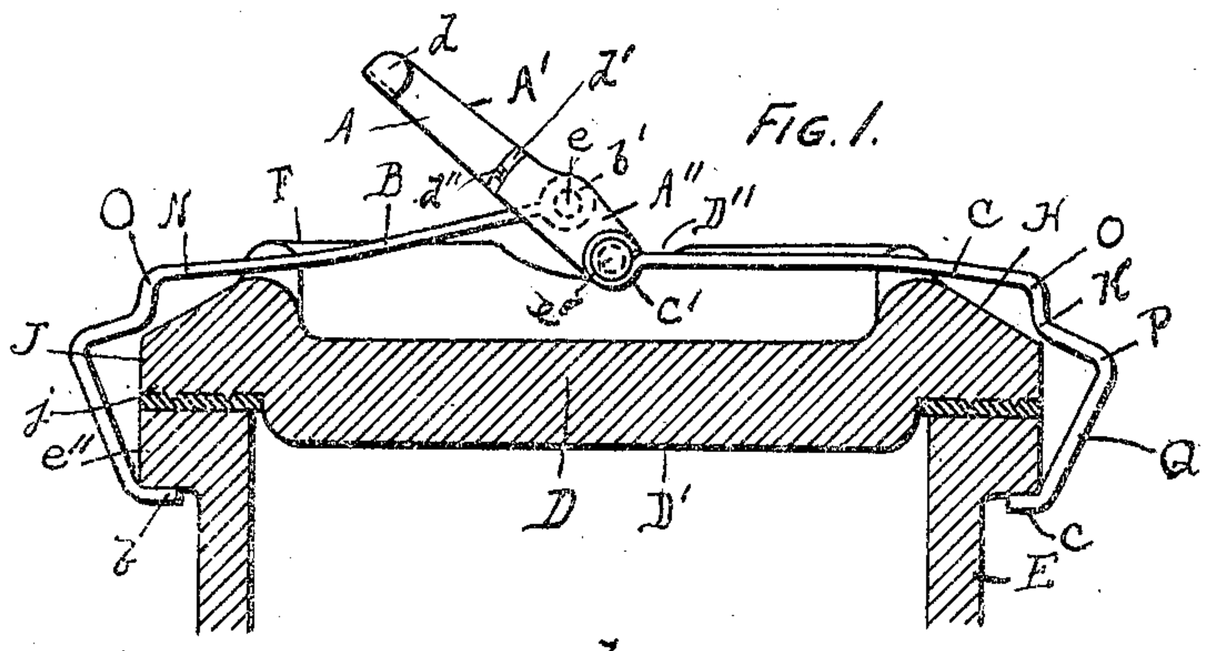

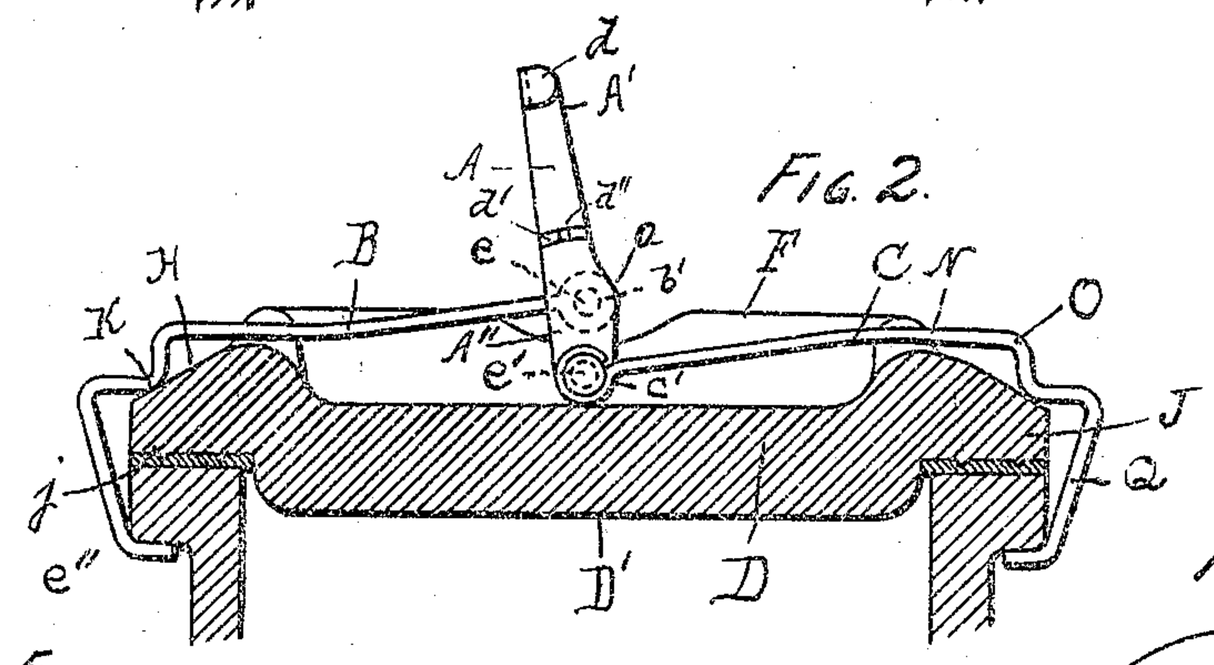

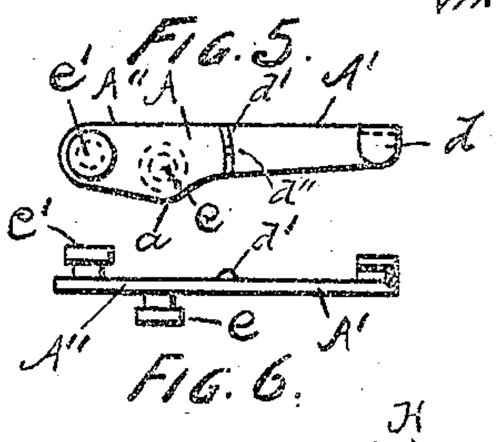

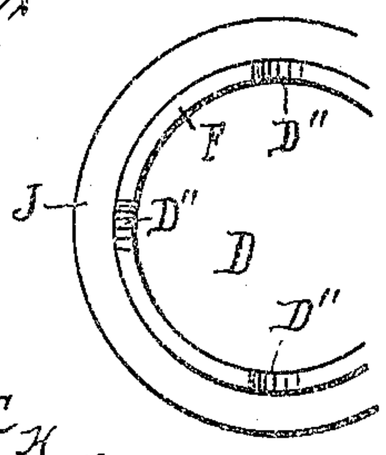

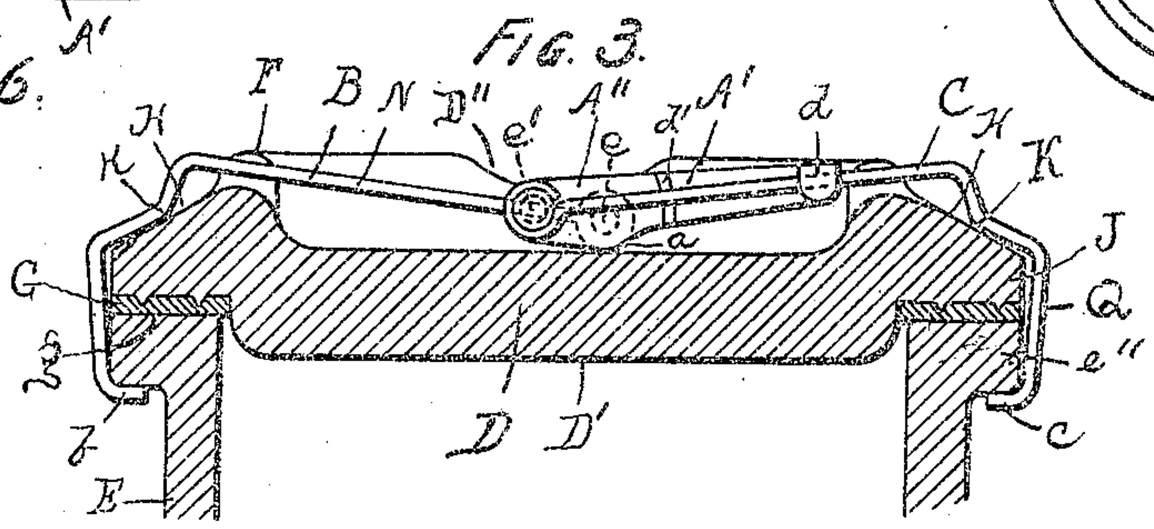

FIG. 6.

Witnesses
H. C. Hastings.
E. L. Richards.

Inventor
R. H. McCoy,
By his Attorneys,
H. W. Richards.

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UNITED STATES PATENT OFFICE.

ROLLAND H. McCOY, OF MONMOUTH, ILLINOIS.

JAR AND FASTENER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 793,734, dated July 4, 1905.

Application filed January 12, 1905. Serial No. 240,806.

To all whom it may concern:

Be it known that I, ROLLAND H. McCOY, a citizen of the United States, residing at Monmouth, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Jars and Fasteners Therefor, of which the following is a specification.

My present invention relates more particularly to devices for securing the covers or lids of jars or bottles to the necks thereof, first by an inferior or minor degree of pressure and finally by a superior degree thereof, and to provide these means constitutes the principal object of the invention.

Another object is to provide a device of the kind in which the entire device rests when in use in a plane below that of the upper surface or rim of the lid, whereby convenience and facility in packing, shipping, and storing the jars is attained.

A further object is to provide a strong, simple, and durable spring-fastener which may be readily, quickly, and easily applied to or detached from the jar without danger of injury to the operator and without the use of tools and which will effectually hermetically seal the jar.

A still further object is to provide a device whereby when the lever is thrown over into its final position it will be automatically secured in locked placement.

With these and other ends and objects in view my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims.

Mechanism embodying the preferred constructive forms of and showing the mutual relationship and combinations of the parts forming the subject-matter of my improvements is illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a sectional view of the cover, packing-ring, and a fragment of the jar, showing the fastening device in its first or released position; Fig. 2, a similar view showing the fastening device in its second position, the lever being turned to such degree that it exerts some, I may say a primary, degree of pressure on the lid or cover; Fig. 3, a similar view showing the fastening device in its final or locked position and as exerting a maximum degree of pressure on the lid or cover; Fig. 4, a top plan of the lid or cover, partly broken away; Fig. 5, a side elevation of the lever, and Fig. 6 a plan thereof seen from below.

The same reference-letter refers to the same part in the different figures of the drawings.

The fastening device comprises three parts—viz., the lever A and the opposed transverse arms B and C, which arms when in position extend across the lid or cover D of the jar E and are turned downwardly at their distal ends *b* and *c*, respectively, to fit snugly beneath a shoulder *e''*, surrounding the neck of the jar at its upper portion. If preferred, this shoulder may be dispensed with and the ends of the arms be fitted into an annular groove about the neck into oppositely-disposed openings therein or secured in any desired or preferred manner thereto.

The lever A, which may be fabricated in any desired or preferred manner, consists of a power-arm A′ and a weight-arm A″, slightly broader than the power-arm, which is cut away so that it may rest lower than that of the upper portion F of the lid D. At or near the outer extremity of the power-arm a clip *d* is turned over and downwardly therefrom and serves to prevent the two centers from going too far past each other to prevent lateral movement of the lever and to prevent the outer end of the lever being depressed to an undesirable degree. Near the juncture of the arms of the lever is a transverse rib *d'*, having laterally across it a locking-groove *d''*. Bosses *e e'* are either fixed or loosely riveted to opposite sides of the weight-arm A″ and in different lateral and longitudinal planes thereon. To be more explicit, the boss *e'* is located at the end of the weight-arm and centrally laterally thereof, while the boss *e* is located at the imaginary point of juncture of the weight-arm and the power-arm and to one side thereof or eccentrically.

The arms B and C, which are in all re-

spects identical and which are preferably of spring-wire, are formed by turning their inner ends about the respective bosses *e'* and *e* to form eyes *b' c'*, thence extending them outwardly to near the outer edges of the lid to form transverse members N, thence at O downwardly at an angle to a point P, thence downwardly to form substantially vertical arms Q, and thence inwardly at such an angle that they will form ends or lugs *b c*, which approximately parallel the upper outwardly-extended members N of said arms.

The jar may be of any ordinary construction having means of attachment or securement thereto of the ends or lugs *b c* of the arms of the fastener and having a seat *g* for any suitable packing-ring or gasket G, which latter may be of any desired form or configuration in its cross-section.

The lid D comprises a main or body portion D', depending into the mouth of the jar and having a plane surface, an upwardly-extended annular portion F, an inclined bearing-face H, and a peripheral flange J, having a face *j*, and intersecting the portion F are oppositely-disposed defiles or valleys D''.

To operate the device, the parts being in the relative positions shown at Fig. 1 and no pressure or force being exerted on the gasket and lid, the lever may be thrown up into the position shown at Fig. 2. The arm B being fulcrumed on the boss *e* and the arm C fulcrumed on the boss *e'*, (thus constituting a compound lever,) their ends formed by the eyes *b'* and *c'* will be brought into closer relationship and the points K K of the arms brought into sliding contact with the inclined way or face H of the lid, and because of the strain exerted on the portions *b c* of the transverse arms a pressure is exerted at right angles to the horizontal plane of the cover, thus exerting sufficient downward pressure to permit of the air being exhausted from the jar without any of the other contents being disturbed or withdrawn therefrom. In this position neither arm B or C will exert more force than the other to draw the free end of the lever in the direction of its trajectory, or, in other words, the lever will be held by said arms at a center while they are exerting an equal draft or pulling force, and by reason of the end of the weight-arm contacting the surface of the lid it will be held in such position until forced therefrom by the operator. The lever being then thrust into its final or locked position, Fig. 3, the bosses or pintles will have been drawn past the center and past each other, the vertical members will have been drawn to contact a portion of the jar, (but not the lid,) the points K K will have been drawn higher on the inclined face H, the convex projection *a* of the lever A will be pressed against a substantially central portion of the lid, and an extreme downward force or force vertically to the horizontal plane of the cover be exerted thereon, whereby the gasket will be compressed to its utmost limit and the jar be hermetically sealed. In other words, the length of the arms remains constant, (see Figs. 1 and 3,) as does the distance between their points *b* and *c;* but by drawing their inner ends to pass the dead-center and past each other the distance between the points of pressure is considerably shortened and the device becomes automatically locked.

The valleys D'' in the rim of the cover are diametrically opposite each other and serve a double purpose: First, they permit the transverse arms to lie in a position where they can be readily adjusted to the jar before force is exerted on the lever, and, second, after the parts have been brought to their locked positions they permit said arms, and thereby the power-arm, of the lever to lie in a horizontal plane not higher than that of the upper portion of the lid, so that the jars may be stored, packed, or shipped one on top of another without danger of breakage from falling or toppling over.

I have hereinbefore stated that the vertical members when the fastener is in its locked position contact a portion of the jar, but not the lid. Neither do the horizontal portions of the arms contact the lid at any point whatever, the only point of contact of said arms being that where the points K K rest and press on the inclined way or face H. Thus constructed and combined there is no tendency of the outer ends to become disengaged from the jar, as would be if the way or face H were not inclined or if the horizontal or the vertical portions of the arms contacted the upper and outer edge of the lid.

As shown at Fig. 3, the rib *d'* of the lever contacts one of the arms of the fastener, which latter engages the locking-groove *d''* and will be held thereby in its locked position until released by the operator.

It will be seen that because of the contact-points of strain being past the center a tendency to depress the outer end of the power-arm arises and that the clip *d*, contacting one of the transverse arms and its downward movement being limited thereby, will prevent said end of the lever being depressed farther than is desirable, while at the same time it will be automatically locked in position.

The advantages of the invention arise from its simplicity and strength, from the ease with which the parts are placed in operative combination, from the compound lever and its attachments, from the fact that all the mechanical or operative parts lie in a horizontal plane lower than that of those non-mechanical, and from the fact that a plurality of degrees of pressure may be exerted on the lid and gasket.

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

1. A lever for jar-fasteners comprising an

integral power-arm and weight-arm, and eccentrically-arranged bosses on opposite sides of the latter arm.

2. A jar-fastener comprising a compound lever having a power-arm and a weight-arm, bosses fixed to the weight-arm on opposite sides, one at one end and the other near the opposite end thereof, and spring fastening-arms operatively connected with said bosses.

3. A lever for jar-fasteners comprising a power-arm and a weight-arm, bosses on opposite sides of the lever, and a transverse rib on one arm of said lever, said rib having a locking-groove laterally thereof.

4. A jar-fastener comprising a pair of transverse arms, a compound lever located centrally thereof and operatively engaged therewith, said lever having a power-arm and a weight-arm, a rib extending across the breadth of said power-arm and having a transverse locking-groove.

5. A jar-fastener comprising a compound lever having an integral power-arm and weight-arm, a boss at the point of juncture of said arms, a boss near the outer end portion of said weight-arm and on the opposite side thereof, a transverse arm pivoted to said first-named boss and extending in one direction therefrom, and a transverse arm pivoted to said last-named boss and extending in an opposite direction to that of said first-named arm, said bosses lying in eccentric planes.

6. A jar-fastener comprising a centrally-located compound lever having a longer arm and a shorter arm, a boss on one side of the shorter arm at its juncture with the longer arm, a boss near the outer end of the shorter arm, on the opposite side thereof, and oppositely-disposed transverse arms pivoted to said bosses whereby the pivotal point of each becomes the fulcrum of the other.

7. In combination, a jar and cover, a compound lever, transverse arms operatively engaged with said lever and adapted to engage a part of said jar, a clip at one end of said lever, and a rib having a locking-groove intermediate said lever.

8. A device of the character described comprising a jar, a lid, a gasket, a compound lever having bosses on opposite sides thereof, and transverse arms adapted each to engage one of said bosses at one end and the upper portion of the jar at the other end.

9. In a device of the character described, a lid or cover comprising a depending body portion having a plane horizontal upper central surface, an upwardly-extended annular portion having valleys intersecting its face, and a peripheral flange having an inclined upper bearing-face.

10. In combination with a jar and cover, a centrally-disposed compound lever having a power-arm and a weight-arm, bosses fixed to the weight-arm on opposite sides, one at one end and the other near the opposite end thereof, a packing-ring, and transverse arms adapted to be engaged at their inner ends with said bosses and at their outer ends with the jar.

11. In combination, a jar, a lid, transverse arms adapted for engagement at their outer ends with the jar, a lever having a power-arm and a weight-arm, bosses on said weight-arm, said bosses in pivotal engagement with the inner ends of the transverse arms and eccentrically located in such positions that they will draw in opposite directions on said arms, and one of said bosses lying in a higher horizontal plane than the other when the device is in its locked position.

12. In combination, a jar, a lid, a compound lever having a power-arm and a weight-arm, bosses fixed to and on opposite sides of the weight-arm eccentrically thereof, and spring fastening-arms engaged at their outer ends with a portion of the jar, their inner ends engaged with said bosses, whereby when the lever is given an incomplete throw a minor degree of pressure is exerted on the lid vertically thereof, and when given a complete throw a maximum degree of pressure is exerted in the same direction.

13. A device of the character described comprising a jar, a lid having an inclined face, a centrally-disposed compound lever, bosses on said lever, transverse arms adapted to respectively engage said bosses at their inner ends, and an angular portion of said arms to contact the lid on the inclined face thereof but not elsewhere, and the outer extended ends of said arms to engage the neck of the jar.

In testimony whereof I have subscribed my name to this specification in presence of two subscribing witnesses.

ROLLAND H. McCOY.

Witnesses:
C. S. RICHARDS,
F. C. HASTINGS.