

No. 658,984.

Patented Oct. 2, 1900.

L. A. FRANK.
LOCK FOR VESSEL COVERS.

(Application filed Jan. 24, 1900.)

(No Model.)

Fig. 1.

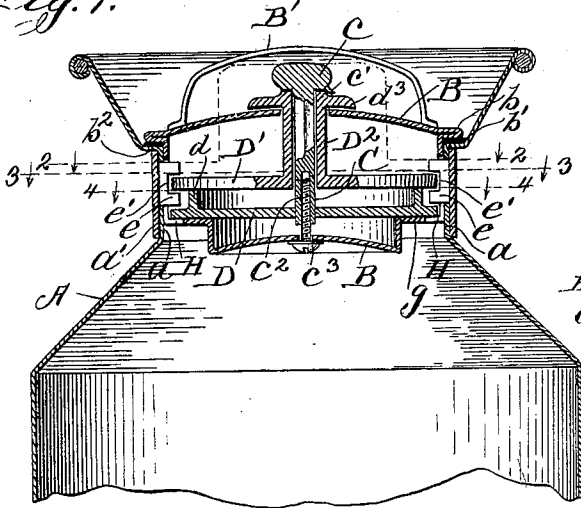


Fig. 2.

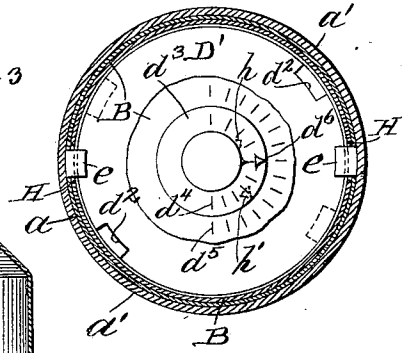


Fig. 3.

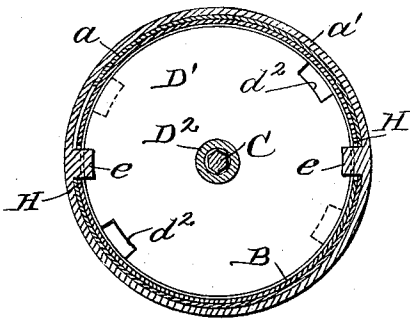


Fig. 4.

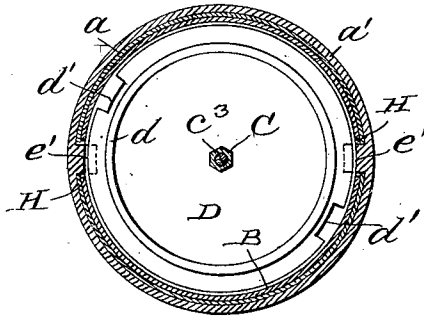


Fig. 5.

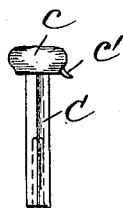
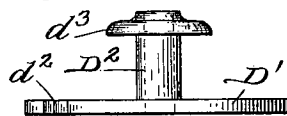


Fig. 6.



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LOCK FOR VESSEL-COVERS.

SPECIFICATION forming part of Letters Patent No. 658,984, dated October 2, 1900.

Application filed January 24, 1900. Serial No. 2,617. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. FRANK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locks for Vessel-Covers, of which the following is a specification.

This invention relates to improvements in permutation or combination locks, and while it is more especially adapted for the covers of cans, jars, and other vessels having necks, yet it is applicable to covers of various kinds of receptacles; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The object of my invention is to provide locks for securing covers on vessels in such a manner that the cover cannot be removed except by a person having a knowledge of the combination of the lock and which shall be simple and inexpensive in construction, strong, durable, and easily operated by the initiated, so as to permit of the removal of the cover or of locking it in position.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the upper portion of a can or vessel, showing the cover thereof secured in position by means of my lock. Fig. 2 is a plan view, partly in section and partly in elevation, taken on line 2 2 of Fig. 1, looking in the direction indicated by the arrows and showing a portion of the top of the cover for the vessel. Fig. 3 is a plan sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a similar view taken on line 4 4 of Fig. 1, showing the lower locking-disk in elevation. Fig. 5 is a detached view in elevation of the stem or spindle to which the lower locking-disk is secured, and Fig. 6 is a similar view of the upper locking-disk and its stem or spindle.

Similar letters refer to like parts throughout the different views of the drawings.

A represents a vessel, which may be made of any suitable size, form, and material, but which in the present instance is shown as having a neck or contracted upper portion, in which is located a cover B, which is hol-

low and is of a size and form to fit snugly in the upper portion of the vessel and to extend some distance thereinto. The upper portion of the cover B is preferably provided with an annular flange *b* to rest on a washer *b'*, interposed between said flange and the annular shoulder *b²*, with which the upper portion of the vessel is sometimes provided, which construction I may employ to more tightly close the mouth of the vessel. The top of the cover is also usually provided with a handle *B'*, used for its removal and insertion. Extending through a suitable opening in the central portion of the top of the cover is a spindle C, which I have shown in the drawings as being hexagonal in cross-section and as having on its upper end a knob *c*, provided with a pointer or index *c'* about its lower portion. The lower end of the stem C is formed with a socket *c²* to receive a screw *c³*, which passes loosely through the bottom of the cover, as is clearly shown in Fig. 1 of the drawings.

While I have shown the stem C hexagonal in shape in cross-section and provided with a socket in its lower end to receive a screw, yet I may make it of other shape and provide the screw with a socket to receive the lower end of the stem or otherwise loosely secure the lower end to the bottom of the cover. The lower locking-disk D is provided with a central opening of a form to correspond with that of the stem C and for the purpose of receiving the same, and preferably has on its upper surface an annular flange *d*, on which the upper locking-disk D' may rest. The periphery of the disk D is provided with two recesses *d'*, preferably diametrically opposite each other, to pass over the lugs *e*, each of which is formed with a recess *e'* to receive and engage the upper locking-disk D', and which lugs are secured on the inner surface of the mouth of the vessel and preferably diametrically opposite each other, as is clearly shown in Figs. 1 and 2 of the drawings. In the present instance I have shown the neck *a* of the vessel as being provided with openings to receive lugs *e*, which in the present instance are shown as being secured to a reinforcing-band *a'*, surrounding the neck; but it is apparent that I may secure the lugs on the inner surface of the open end of the vessel in any suitable manner. The upper locking-disk D' is provided in its periphery with re-

cesses d^2 , preferably diametrically opposite each other, to allow said disk to pass the upper portion of the lugs e into the recess e' thereof. The disk D' is shown in the drawings as being made integral with the stem D^2 , which is hollow and has on its upper portion an annular flange or knob d^3 to rest on the top of the cover B or just above the same, as is shown in Fig. 1 of the drawings; but said disk and flange may be made of separate pieces from the stem D^2 and suitably secured thereto. The upper surface of the knob or flange d^3 is provided with a graduate scale d^4 , and the upper surface of the top of the cover B is likewise provided with a similar scale d^5 , (see Fig. 2 of the drawings,) which scales may be provided with numerals and are employed for the purpose of indicating to what point each of the dials or knobs c and d^3 shall be turned in order to bring the recesses d' and d^2 of the locking-disks into alinement with each other and in such a position as to pass the lugs e in the opening of the vessel when it is desired to remove the cover. The stem C passes through the hollow stem D^2 , and the dial or knob c of the former stem rests on top of the knob d^3 or above the same, so that the index or pointer c' will extend slightly over the knob or flange d^3 on the stem of the upper locking-disk, so that when either of said knobs is turned the pointer or index c' will indicate on the graduate scale d^4 of the dial or knob d^3 , which is provided on its upper surface with an index d^6 to indicate on the graduate scale d^5 on the top of the cover.

In Fig. 1 of the drawings I have shown the locking-disk D as resting on an annular shoulder g , formed by contracting the lower portion of the vessel-cover, in which case it is not necessary to fix said disk to its stem; but instead of using this construction of the cover I may fix the disk on its stem by any desired means. By using a stem C of hexagonal shape in cross-section or of other shape than cylindrical it is apparent that the disk D will turn therewith, and when it is desired to change the combination of the lock the screw engaging the bottom of the stem C may be removed, when the said stem may be withdrawn from the opening in its disk and slightly turned and reinserted, when a new combination will be formed. To insert the cover in the opening of the vessel, it is necessary to bring the recesses d' and d^2 in the locking-disks into alinement, which may be done by turning the dial or knob c so that its index c' will indicate a point at about h and by turning the dial or knob d^3 so that its index d^6 will indicate a point at about h' , in which positions the recesses in the peripheries of the disks will be in alinement to allow them to pass the lugs e , when by turning either disk slightly in either direction the position of the recesses therein will be changed, so that the disks will engage the lugs and prevent the removal of the cover. To unlock and remove the cover, the same operation must be repeated.

While I have shown the cover provided with two locking-disks, yet I may omit one of them or may employ more than two if it is desired to make the combination more complex.

The walls of the cover are provided with vertical slots or depressions H to receive the lugs e on the inner surface of the opening of the vessel.

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

1. The combination with a vessel having in its opening inward projections, each provided with a recess, of a cover to close the opening, a hollow stem rotatably located in the cover and having at its upper end a dial or knob, a disk having recesses in its periphery and located on the lower portion of said stem, a stem rotatably located in the hollow stem and having at its upper end a knob or dial, and its lower portion formed angular in cross-section, and a disk mounted on the lower portion of the stem, which extends through the hollow stem and having recesses in its periphery, substantially as described.

2. The combination with a vessel having projections in its opening, of a cover having a hollow extension to fit in said opening, and provided on its top with a graduate scale, said extension being closed at its bottom and provided with an annular shoulder, a hollow stem rotatably located in the cover and having at its upper end a dial or knob provided with a graduate scale and an index, a disk having recesses in its periphery and located on the lower portion of said stem, a stem rotatably located in the hollow stem and having on its upper end a knob or dial provided with an index, and a disk mounted on the lower portion of the stem which extends through the hollow stem and having recesses in its periphery and resting on the annular shoulder at the bottom of the said extension, substantially as described.

3. The combination with a vessel having in its upper portion an annular shoulder, and below said shoulder, openings in its walls, of a reinforcing band encircling the upper portion of the vessel and provided with projections extending through said openings, a cover having an annular flange to rest on said shoulder, a hollow stem rotatably located in the cover, and having at its upper end a dial or knob, a disk having recesses in its periphery and located on the lower portion of said stem, a stem rotatably located in the hollow stem, and having at its upper end a knob or dial, and its lower portion formed angular in cross-section, and a disk mounted on the lower portion of the last-named stem, and having recesses in its periphery, substantially as described.

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