A. C. PRINCE.

LOCK.

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1,400,908. Patented Dec. 20, 1921.

Fig. 1

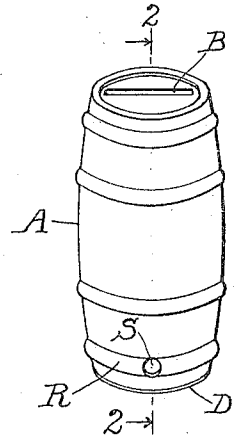


Fig. 3.

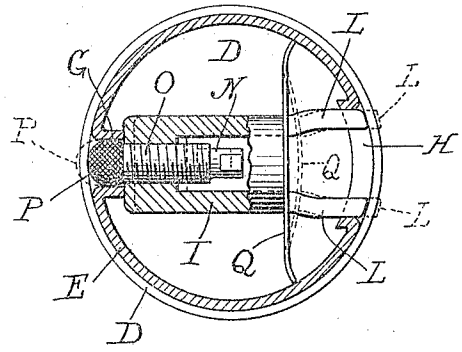


Fig. 2.

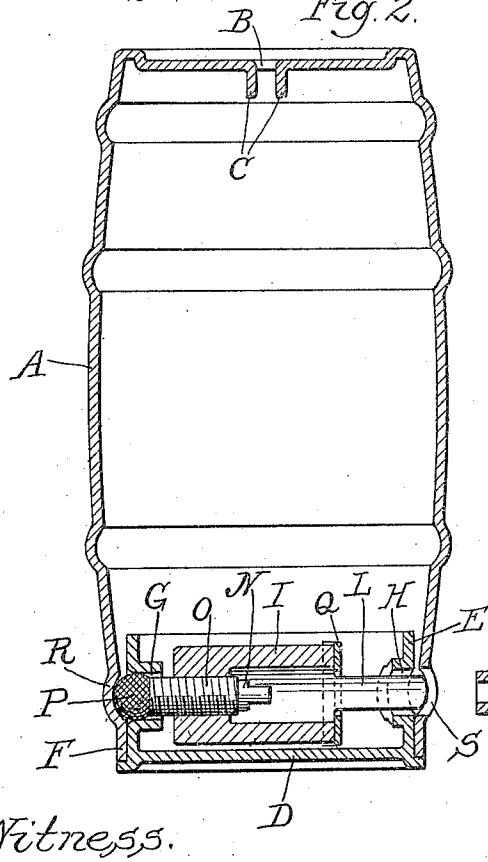
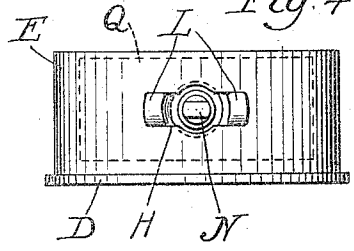
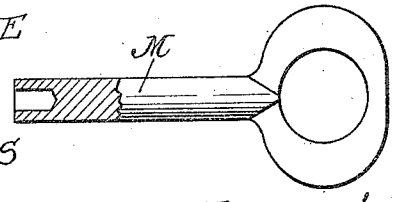


Fig. 4.





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LOCK.

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To all whom it may concern:

Be it known that I, ARTHUR C. PRINCE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Locks, of which the following is a specification.

My invention relates to an improvement in locks, and has for its object to provide locking or securing means whereby a door, or the closure of an aperture may be locked to the door frame or the aperture in which it lies, at a plurality of opposed points, and by the same locking operation.

I illustrate my invention as applied to a closure for a small bank, but it is obvious that it might be used in the doors of safes, pay telephones, slot machines, and any other such closures, of various sizes, which are subjected to the likelihood of frequent tampering.

I illustrate my invention more or less diagrammatically in the following drawings, wherein:

Figure 1 is an elevation of a bank, to which my invention is applied;

Fig. 2 is a vertical section on an enlarged scale, on the lines 2—2 of Fig. 1;

Fig. 3 is a view of the lid, with parts cut away showing the locking mechanism.

Fig. 4 is the side elevation of the bank lid.

Like letters and numbers represent like parts throughout the drawings.

A is a bank body illustrated and shaped like a small barrel, the bottom of the barrel being slotted, as at B, for admission of the coins to be kept therein. The sides of the slot are upturned within the bank, as at C, C, to provide inwardly projecting flanges on either side of the slot.

Fittingly closely within the opposite end of the body is the cap D which has an inwardly projecting rim E adapted to engage the edge of the bank body F, and inclose the locking mechanism. The cap is perforated at diametrically opposed points, as at G and H, the perforation G being substantially circular and the perforation H being oval or otherwise elongated. Lying within the cap is the hollow cylinder I, centrally screw threaded to receive the screw J and having a plurality of projections L L, adapted to penetrate the aperture H, leaving a space between them sufficient for the penetration of the key M. The screw N is composed of a screw threaded body O, adapted to penetrate the screw threaded interior of the cylinder I, which is shaped to receive the key or socket wrench M. The opposite end of the screw comprises a head P preferably roughened or knurled, which is adapted to penetrate the aperture G, when the screw is rotated in the proper direction. Compressed between the rim of the cap and the cylinder H, is the spring Q adapted normally to force it in the direction of the aperture G. The body of the bank, adjacent the cap is surrounded by a projection or corrugation R which serves as a lock or socket to receive the locking members L L, and P, when the screw is rotated in the proper direction to force their extension. The bank body is perforated as at S to permit the insertion of the key M.

This description is to be taken as diagrammatical and merely illustrative of the application of my invention to a specific device. It is obvious that various changes could be made in number, size, shape and relation of parts, without departing from the spirit of my invention.

The leaf spring might be replaced by a spiral spring, surrounding the interior locking cylinder. The locking end of the screw might be modified in form and might engage a small cup shaped aperture rather than the corrugation shown, and a multitude of minor mechanical changes might be made, to adapt the invention to doors or lids of other sizes and shapes.

The use and operation of my invention are as follows:— I illustrate a locking means which is particularly adapted for small banks. When the lid is inserted into the bank and the key is passed through the aperture in the bank body into the center of the locking cylinder and is rotated in the proper direction, the result is, the extension of the screw-threaded locking pin, which presses against the opposed side of the bank. As the extension continues, and since the sides of the bank are rigid, the locking cylinder into which the pin is screw-threaded, is forced, against the resistance of the spring, in the opposite direction, and its locking members are forced through the opposed aperture and into locking relation with the corrugation about the bank.

When the screw-threaded locking pin is in normal position, withdrawn into the cylin-

der, the spring keeps the opposed locking members out of contact with the bank body, leaving the closure unlocked. When the combined length of the cylinder and screw is increased by their relative movement, caused by the rotation of the screw, the spring yields to permit the projection of the locking members of the cylinder. But since it does not yield until the end of the screw begins to press against the side of the bank, it insures that at least one locking member will be in place, even though the locking rotation is not completed.

The pressure of the spring and the nurling of the screw end insure strong, frictional contact with the side of the bank, which will not be affected by rattling or picking at the bank.

When the locking rotation is completed, the cap is firmly clamped within the bank, and only the actual destruction of the upper part of the bank will permit the locking members to release their hold, since their combined length is actually greater than the diameter of the opening at the top of the bank.

The slot at the bottom of the bank, which could of course, be made in the side of the bank, if desired, is surrounded by an upturned edge which makes removal of the coins by shaking the bank practically impossible. To be shaken out the coin must hit the slot, or rather the jacket formed by the inward projection about the slot, at exactly the right angle, and there is relatively small chance of any coin so escaping.

I claim:

1. Closing means for an aperture, comprising a closure, a plurality of parallel locking members mounted adjacent each other thereon, and means for increasing the combined length of said members, to lock the closure against opposed sides of the aperture.

2. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, one member adapted to penetrate and be inclosed by the other, and means for increasing the total length of said members, to lock the closure against opposed sides of the aperture.

3. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, one of said members screw threaded to penetrate a screw threaded aperture in the other, and means for rotating one of said members to increase the combined length of said members, to lock the closure against opposed sides of said aperture.

4. Closing means for an aperture, comprising a closure, a plurality of locking members mounted adjacent each other thereon, and means for increasing the combined length of said members, to lock the closure against opposed sides of the aperture, by moving one member axially in relation to the other.

5. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, one member adapted to penetrate and be inclosed by the other, and means for increasing the total length of said member, to lock the closure against opposed sides of the aperture, by axially moving one member in relation to the other.

6. Closing means for an aperture, comprising a closure, a plurality of locking members mounted adjacent each other thereon, and means for increasing the combined length of said members, to lock the closure against opposed sides of the aperture, by axially moving one member in relation to the other, the locking member being yieldingly mounted in the closure.

7. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, one member adapted to penetrate and be inclosed by the other, and means for increasing the total length of said members, to lock the closure against opposed sides of the aperture, by axially moving one member in relation to the other, the locking members being yieldingly mounted in the closure.

8. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, and means for extending one of said members to engage one side of the aperture, said means adapted, when said member has reached the limit of its excursion, to extend the other of said members against the opposite side of the aperture.

9. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, and yielding means for extending one of said members to engage the sides of the aperture, said means adapted, when said member has reached the limit of its excursion, to extend the other of said members against the opposite side of the aperture.

10. Closing means for an aperture, comprising a closure, a plurality of locking members mounted thereon, means for extending one of said members to engage the sides of the aperture, and yielding means adapted, when said member has reached the limit of its excursion to permit the extension of the other of said members in the opposite direction, comprising a spring compressed between one of said members and the closure.

11. Closing means for an aperture comprising a closure, a plurality of locking members mounted thereon, means for extending one of said members to engage the sides of the aperture, and yielding means

adapted, when said member has reached the limit of its excursion to permit the extension of the other of said members in the opposite direction, comprising a spring compressed between the latter member and the closure.

12. Closing means for an aperture comprising a closure, a plurality of locking members mounted thereon and adapted to penetrate the sides of the aperture, and means for extending said locking members successively into locking position.

13. Closing means for an aperture comprising a closure, a plurality of locking members mounted thereon and one of said members screw threaded to penetrate the other of said members, and means for rotating it to increase the combined length of the two locking members, to engage the sides of the aperture.

14. Closing means for an aperture comprising a closure, a plurality of locking members mounted thereon and one of said members screw threaded to penetrate the other of said members, and means for rotating it to increase the combined length of the two locking members, to engage the sides of the aperture, comprising a key adapted to penetrate one of said locking members to contact said screw threaded member.

15. Closing means for an aperture comprising a closure, a plurality of locking members mounted thereon and adapted to penetrate the sides of the aperture, and means for extending said locking members successively into locking position, adapted to exert pressure against one of said members to extend it, and to direct such pressure against the other member, after the completion of the excursion of the first member.

16. Closing means for an aperture comprising a closure, a plurality of locking members mounted thereon and adapted to penetrate the sides of the aperture, one of said members screw threaded to penetrate the other, and means for extending both of said members by rotating one of them.

17. A locking member adapted to be advanced by rotation into locking position, comprising a screw threaded body, and a roughened head adapted frictionally to lock the member against rotation, when it is seated in locked position.

18. A bank body, and an aperture therein and closing means for the aperture, comprising a closure, a plurality of parallel locking members mounted adjacent each other thereon, and means for increasing the combined length of said members, to lock the closure against opposed sides of the aperture.

19. A bank body, and an aperture therein and closing means for the aperture, comprising a closure, a plurality of locking members mounted adjacent each other thereon, and means for increasing the combined length of said members, to lock the closure against opposed sides of the aperture, by axially moving one member in relation to the other, the locking members being yieldingly mounted in the closure.

20. A bank body and an aperture therein and closing means for the aperture comprising a closure, a plurality of locking members mounted thereon and adapted to penetrate the sides of the aperture, and means for extending said locking members successively into locking position.

21. A bank body and an aperture therein and closing means for the aperture comprising a closure, a plurality of locking members mounted thereon and adapted to penetrate the sides of the aperture, and means for extending said locking members successively into locking position, adapted to exert pressure against one of said members, to extend it, and to direct such pressure against the other member, after the completion of the excursion of the first member.

22. A bank body and an aperture therein and locking means therefor, and a locking member for the closure adapted to be advanced by rotation into locking position comprising a screw threaded body, and a roughened head adapted frictionally to lock the member against rotation, when it is seated in locked position.

23. A metal bank body, an aperture therein, closing means for the aperture comprising a closure, a plurality of locking members mounted thereon adjacent each other and a means for increasing their combined length to lock the closure against the closed sides of the bank body by moving one member axially in relation to the other, a resilient groove about said aperture adapted to receive said locking members.

Signed at Chicago, county of Cook and State of Illinois, this 8th day of February, 1921.

ARTHUR C. PRINCE.