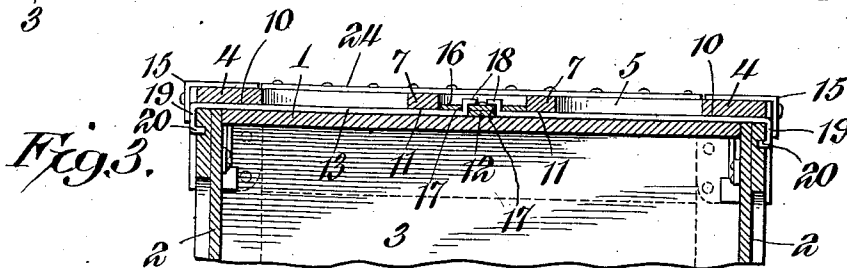
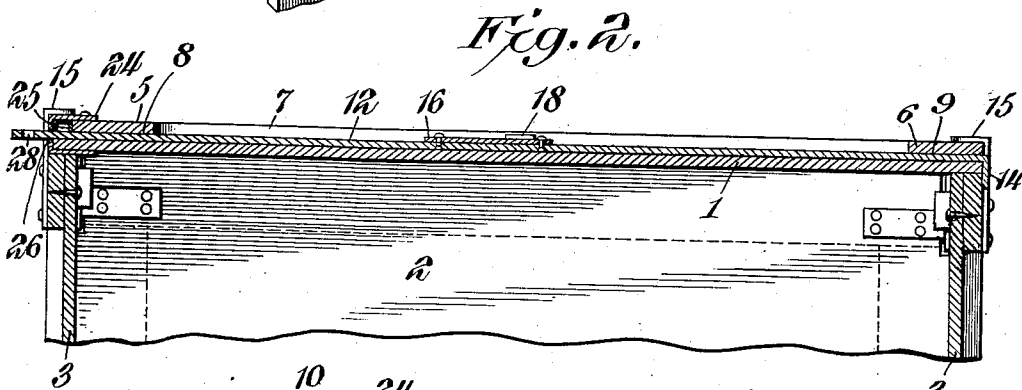
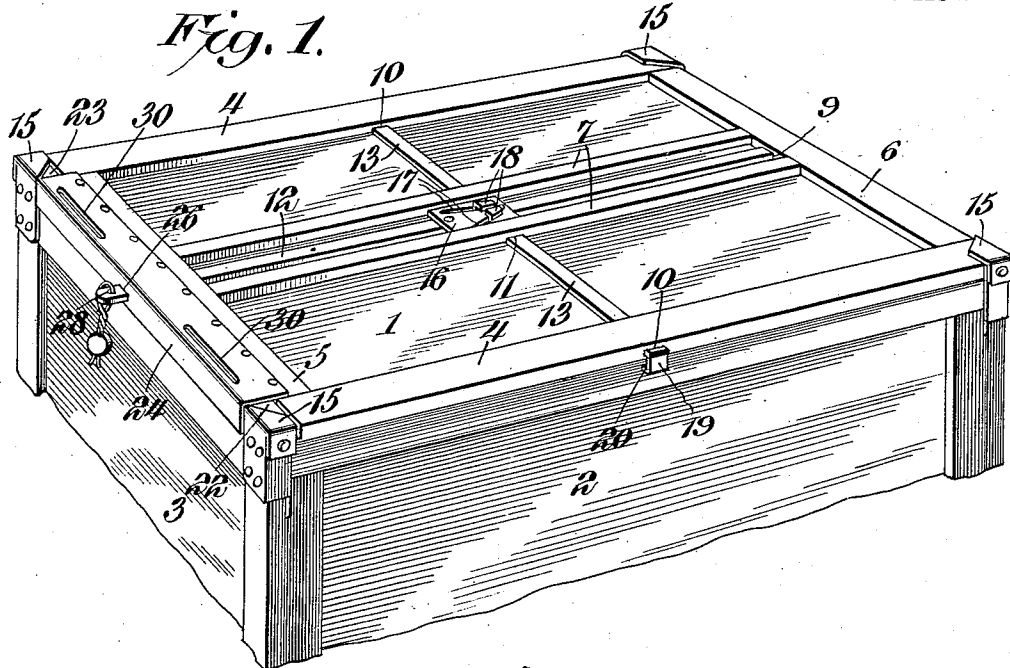


A. E. LOCKHART.
 LOCKING MECHANISM FOR COLLAPSIBLE RECEPTACLES.
 APPLICATION FILED APR. 23, 1912.

1,060,988.

Patented May 6, 1913.

3 SHEETS—SHEET 1.



WITNESSES

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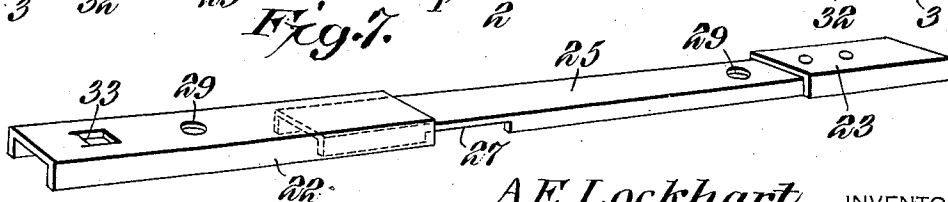
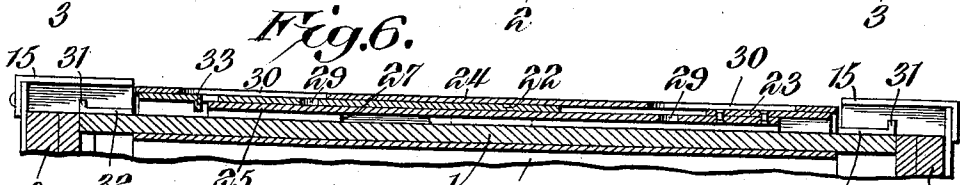
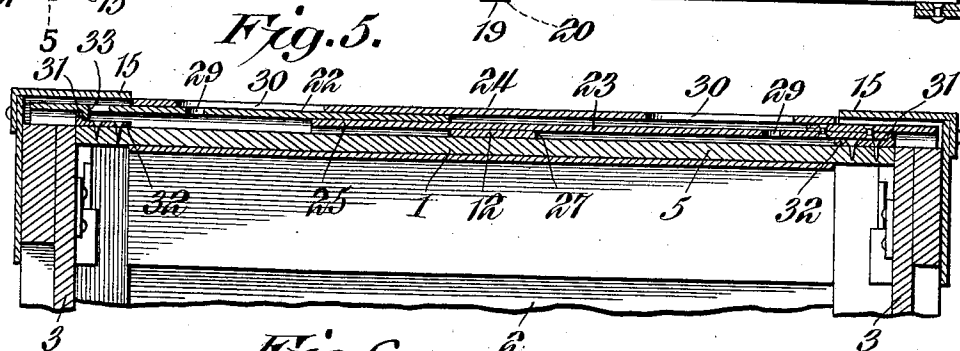
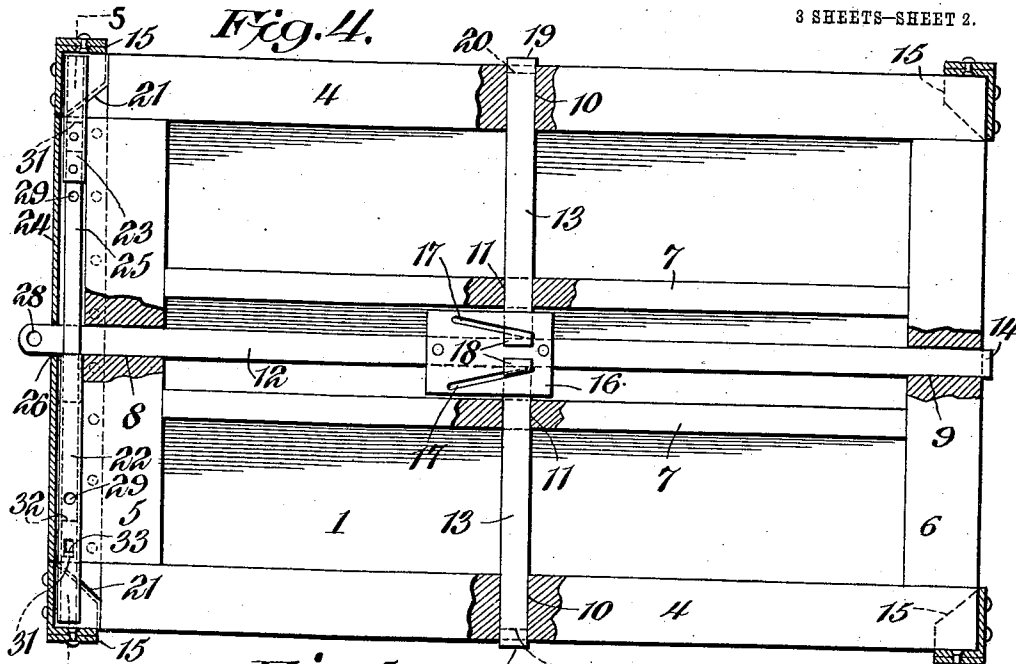
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3 SHEETS—SHEET 2.



WITNESSES

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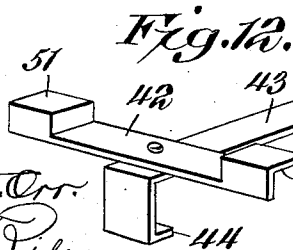
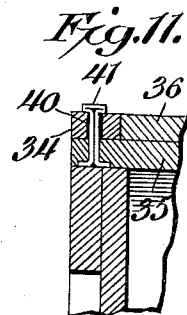
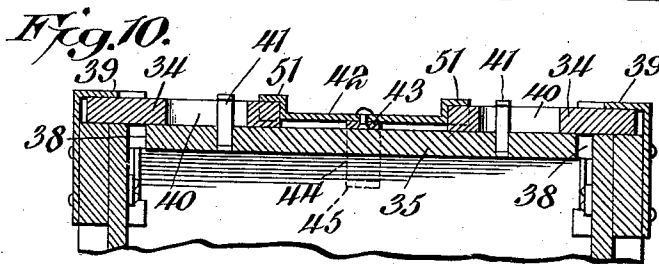
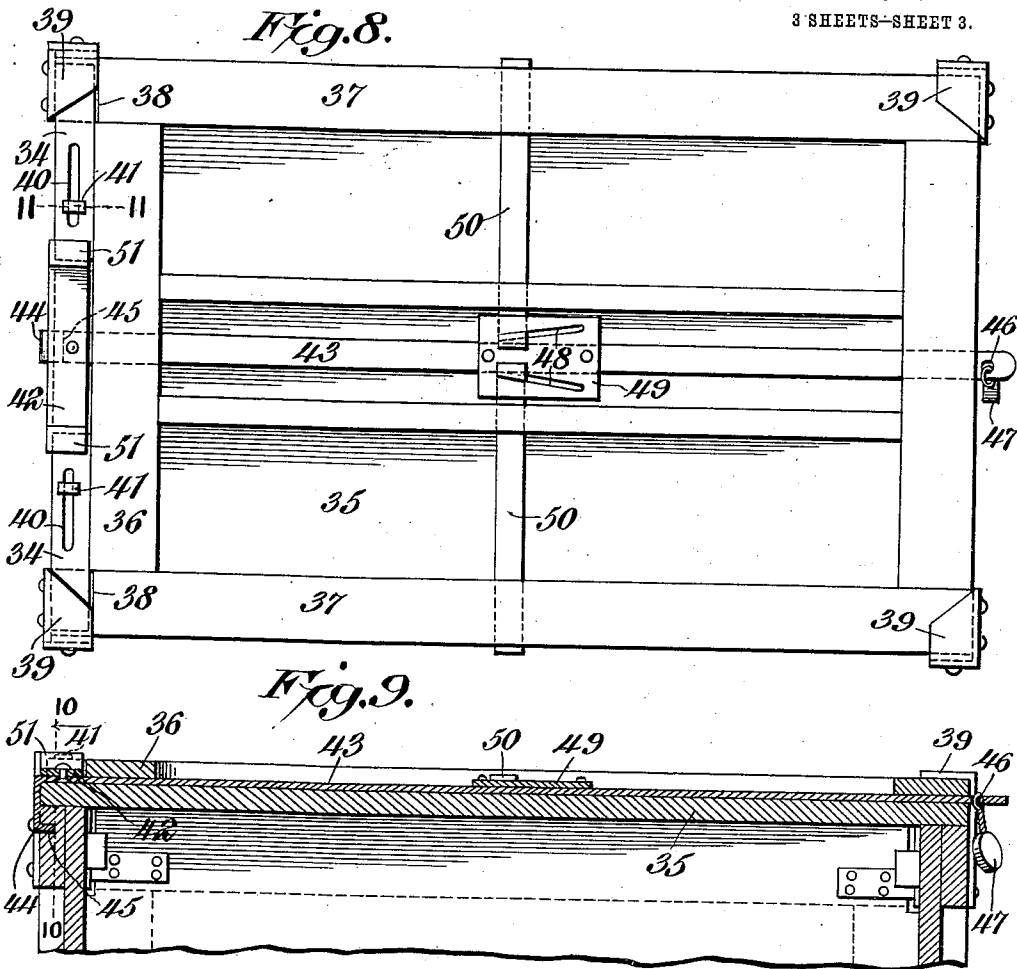
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3 SHEETS-SHEET 3.



WITNESSES

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LOCKING MECHANISM FOR COLLAPSIBLE RECEPTACLES.

1,060,988.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed April 23, 1912. Serial No. 692,709.

To all whom it may concern:

Be it known that I, ANDREW E. LOCKHART, a citizen of the United States, residing at Jonesboro, in the county of Craighead and State of Arkansas, have invented a new and useful Locking Mechanism for Collapsible Receptacles, of which the following is a specification.

The invention relates to improvements in locking mechanism for collapsible receptacles.

The object of the present invention is to provide for collapsible receptacles a simple, efficient and comparatively inexpensive locking mechanism, adapted to fasten the lid or cover securely to the body of the receptacle, and capable of protecting the contents thereof from petty thefts, and equipped with sealing means for preventing access to the interior of the receptacle without destroying the seal and indicating the fact that the receptacle has been surreptitiously opened.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of a portion of a collapsible box provided with locking mechanism, constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view of the same. Fig. 3 is a central transverse sectional view of the upper portion of the receptacle. Fig. 4 is a plan view, partly in section. Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 4, the transverse bolts being in their engaging position. Fig. 6 is a similar view, the parts being retracted. Fig. 7 is a detail perspective view of the slidable bolts. Fig. 8 is a plan view of a collapsible box provided with a locking mechanism, illustrating another form of the invention. Fig. 9 is a central longitudinal sectional view of the upper portion of the same. Fig. 10 is a transverse sectional view on the line 10—10 of Fig. 9. Fig. 11 is a detail sectional view on the line

11—11 of Fig. 8. Fig. 12 is a detail perspective view of one end of the longitudinally movable combined operating and locking bar, illustrating the construction of the movable keeper.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the accompanying drawings in which is illustrated the preferred embodiment of the invention, 1 designates the lid or cover arranged upon the upper edges of foldable sides and ends 2 and 3 of a collapsible receptacle, forming the subject-matter of a companion application, executed of even date herewith. The lid 1, which is reinforced at its upper face with marginal cleats 4, 5 and 6, and spaced central longitudinal cleats 7, is provided with longitudinally alined openings 8 and 9 and transversely alined openings 10 and 11, forming guides or ways for a longitudinally slidable combined locking and operating bar or member 12 and laterally slidable locking bars or members 13. The longitudinally movable bar or member 12 is provided at one end with a depending portion 14, engaging the outer face of the adjacent foldable end of the box to retain the same in engagement with the corner keepers 15, projecting above the upper edges of the box and composed of angularly related vertical sides or wings and an inwardly extending horizontal top wall or portion. These corner keepers consist of spaced portions of the corner fastening devices, described and claimed in the aforesaid application, but as the lid and the locking mechanism are adapted to be applied to any receptacle equipped with similar corner keepers, further description of the corner keepers is deemed unnecessary.

The longitudinally movable bar or member 12 is equipped at its center with a rectangular plate or slide 16, riveted or otherwise connected with the bar or member 12 and operating in the space between the central longitudinal cleats 7 and provided with angularly related longitudinally disposed converging slots 17, receiving the inner ends 18 of the laterally slidable members. The laterally slidable members have their inner ends angularly bent and extended upwardly through the slots 17 from the lower face of the slide or plate and inwardly in a horizontal direction at the upper face of the same, but the inner ends of the transversely

disposed members 13 may be connected with the slots of the slide or plate by any other suitable means, whereby when the longitudinal bar or member 12 is reciprocated, the transversely disposed bars or members will be moved inwardly and outwardly to engage them with and disengage them from the foldable sides of the box. The outer ends of the transverse bars or members 13 are provided with downwardly and inwardly extended hook-shaped engaging portions 19, which, by the inward movement of the bars or members 13, are carried into engagement with recesses 20 formed in the outer faces of the foldable sides, whereby the lid is securely fastened at its side edges to the sides of the box. The outward movement of the transversely disposed locking bars or members 13 disengages the outer terminal portions of the same from the recesses 20 and releases the side portions of the lid. While in the accompanying drawings, only a single pair of transversely disposed locking members and a single actuating slide or plate are illustrated, this side locking means may be duplicated, so that the side edges of the lid may be locked at any desired points between the ends of the receptacle, thereby enabling the lid of a large receptacle to be securely fastened to the sides thereof.

One end of the lid is directly engaged with the keepers at that end of the box, and the other end of the lid is cut away at the corners at 21 to enable it to clear the adjacent keepers in placing the lid on and removing it from the box. This end of the lid or cover is secured to the adjacent keepers by means of transverse end bolts 22 and 23, slidably mounted within a casing or housing 24, constructed of sheet metal, or other suitable material composed of upper and lower horizontal portions and a vertical connecting portion. The housing or casing, which is approximately U-shaped in cross section, is fitted on and secured to the adjacent end of the lid or cover, the upper horizontal portion being secured to the upper face of the end cleat 5 and the lower horizontal portion being fastened to the lower face of the lid or cover. The transverse end bolts 22 and 23, which are shown in the accompanying drawings as constructed of channeled metal, may be made of any suitable material, either wood or metal, or a combination of both, and the bolt 23 is provided with an inner section or portion 25 of a smaller diameter than the outer portion and fitting the interior thereof and the interior of the bolt 22. The inner and outer sections of the bolt 23 are riveted or otherwise secured together, and the channel bolt 22 fits over and slides on the inner portion or section 25 of the bolt 23. The transverse casing or housing 24 is provided in its outer vertical connecting wall with an opening 26,

arranged in alinement with the longitudinally alined openings 8 and 9 and side flanges of the inner portion or section 25 of the bolt 23 and provided with opposite openings or notches 27, so that when the latter are in alinement with the openings 8 and 26 and the bolt 22 is moved outward beyond the openings 27, the longitudinally movable operating bar or member 12 may be moved outwardly for locking the transverse bolts in engagement with the keepers and for moving the laterally extending locking arms inwardly into engagement with the sides of the box and for carrying its depending portion 14 into engagement with the adjacent end wall. When the parts are in this position, the cover is securely fastened on the box and the combined bar or member is provided at the end opposite that having the engaging portion with a perforation 28, adapted to receive the wire of a seal in order that after the cover is fastened on the box the locking mechanism may be sealed to prevent access to the contents of the box without removing the seal therefrom. When the combined operating and locking bar is moved in the opposite direction, its seal receiving end is carried inwardly beyond the transverse bolts and the laterally movable locking arms or bars are disengaged from the sides of the box and the depending engaging portion 14 is carried outwardly from the box. The bolts may then be moved inwardly out of engagement with the keepers, and for this purpose they are provided with top openings 29, and the transverse housing or casing has upper and lower longitudinal slots 30 to permit a nail or any pointed instrument to be introduced into the slots for operating the transverse end bolts. When the transverse end bolts are moved inwardly out of engagement with the keepers, the openings 27 are carried out of alinement with the openings 8 and 26, and the inner portion of the bolt 22 extends across the said opening, and the longitudinal bar or member 12 is held against outward movement.

The outward movement of the bolts is limited by stops 31, consisting of lugs or flanges extending upwardly from plates 32, arranged within the casing or housing and secured to the upper face of the end cleat 5. One of the stops 31 is engaged by the outer end of the section or portion 25 of the bolt 23, and the other bolt 22 is provided with a depending lug or flange 33, formed integral with the channel bolt 22 and extending downwardly and inwardly from the top thereof. Any other suitable means, however, may be employed for limiting the movement of the transverse end bolts.

In Figs. 8 to 12 inclusive of the accompanying drawings is illustrated another form of the invention, in which a pair of trans-

versely slidable bolts 34 is mounted at one end of the lid or cover 35 at the outer side edge of the transverse end cleat 36, the side cleats 37 being terminated substantially flush with the outer side edge of the cleat 36, and the lid or cover being provided with corner notches 38 to clear the adjacent corner keepers 39. The bolts, which are designed to be constructed of wood, or other suitable material, are provided with longitudinal slots 40 and are secured to the lid or cover by means of fastening devices 41, piercing the lid or cover and extending through the slots and having flat heads at their upper ends to engage the upper faces of the transverse bolts at opposite sides of the slots 40. The fastening devices, which may be of any preferred form, are shown in the drawings as constructed of a single piece of metal bent to form the fastening device, the terminals of the metal being spread or bent in opposite directions at the inner or lower face of the cover, as clearly illustrated in Fig. 11 of the drawings.

The corner keepers are constructed similarly to the corner keepers heretofore described, and the bolts 34 are slidable transversely to engage their outer portions with the fixed corner keepers, and the said bolts are locked in engagement with the fixed keepers 39 by a movable keeper 42, riveted or otherwise connecting to and constituting a part of the combined operating and locking member 43. The combined operating and locking member, which is arranged the reverse of that shown in Figs. 1 to 7 inclusive, is provided at its end adjacent to the transverse bolts with a depending hook 44 for engaging a notch or recess 45 in the outer face of the adjacent end of the box. The other end of the longitudinally movable member 43 is provided at its other end with a perforation 46, adapted to receive the wire of a seal 47. The said member 43 is movable in the opposite direction from the member 12 to unlock or release the lid or cover, and the converging slots 48 of the plate or slide 49 are reversed, so that the laterally movable locking members 50 will be actuated in the proper direction by the sliding movements of the longitudinal member 43. The laterally movable locking members are constructed and arranged similar to those heretofore described.

The movable keeper, which is constructed of sheet metal or other suitable material, consists of terminal casings 51 and a connecting portion, which is riveted or otherwise connected at its center with the longitudinally movable member. The terminal casings 51 are open at the outer ends and at the inner side, and they fit over and embrace the inner ends of the transversely movable bolts and form stops for holding the outer portions of the bolts in engage-

ment with the fixed keepers. When the longitudinally disposed member 43 is moved in one direction, it releases the transverse bolts and slides the laterally movable locking members outwardly from engagement with the sides of the box, and a reverse movement of the longitudinally disposed member engages the laterally movable members 50 with the sides of the box and interposes the keeper between the transverse bolts. As the inner and outer ends of the transverse bolts are arranged within the keepers, the latter are securely held in their engaging position.

What is claimed is:—

1. In a locking device of the class described, the combination with a lid or cover, of a longitudinally movable operating bar extending along the lid or cover from one end of the same to the other end thereof and having a depending engaging portion at one end and provided at an intermediate point with a slide having converging slots, and laterally movable operating bars slidably connected with the slots and actuated by the same, said locking bars extending from the slide to the opposite edges of the cover and provided with depending approximately L-shaped engaging portions having inwardly extending terminals.

2. A locking device of the class described including laterally movable locking bars, a longitudinally movable operating bar connected with and actuating the laterally movable locking bars and provided at one end with engaging means, and transverse bolts located adjacent to the other end of the locking bar, the latter being movable into and out of the path of the transverse bolts for holding the same in an extended engaging position and for permitting the bolts to be moved inward.

3. A locking device of the class described including laterally movable locking bars, a longitudinally movable operating bar connected with and actuating the locking bars and provided at one end with engaging means, a transverse casing located at the other end of the operating bar and having an opening to permit the operating bar to extend through it, and transverse bolts mounted in the casing and arranged to be locked in an extended engaging position by the operating bar, the latter being provided with a seal receiving opening adapted to be carried beyond the casing.

4. A locking device of the class described including laterally movable locking bars, a longitudinally movable operating bar connected with and actuating the laterally movable bars, a transverse casing arranged at one end of the longitudinally movable bar and provided with slots, and transverse bolts slidable in the casing and arranged to be locked in an extended position by the operating bar, the bolts being provided at the

said slots with openings adapted to be engaged by an instrument for operating the bolts.

5 5. A locking device of the class described including a transverse casing having an opening, bolts slidable in the casing and arranged in overlapping relation and movable inwardly on each other, one of the bolts having an opening and the other terminating at its inner end at the opening when the bolts are in their extended engaging position, and an operating bar slidable in the casing and through the bolt opening for locking the bolts in their extended position.

10 6. A locking device of the class described including a transverse casing, bolts slidable in the casing and arranged in overlapping relation, stops arranged within the casing for limiting the outward movement of the bolts, and a longitudinally movable bar provided at one end with engaging means and having its other end arranged at and movable through the casing for locking the bolts in their extended position.

25 7. In a locking device of the class described, the combination with keepers designed to be arranged at the corners of a receptacle, and a lid or cover having one of its ends directly engaging the keepers at one end of the receptacle, the corners of the cover being cut away at the other end to clear the other keepers, transversely slidable bolts mounted on the cover at the cut away end thereof for engaging the adjacent keepers, and means for locking the bolts in their extended position.

30 8. In a locking device of the class described, the combination with keepers designed to be arranged at the corners of a receptacle, and a lid or cover having one of its ends directly engaging the keepers at one end of the receptacle, the corners of the cover being cut away at the other end to clear the other keepers, transversely slidable

bolts mounted on the cover at the cut away end thereof for engaging the adjacent keepers, and a longitudinally movable bar mounted on the lid or cover and provided at one end with engaging means and having its other end arranged to lock the bolts in their extended position.

9. In a locking device of the class described, the combination with keepers designed to be arranged at the corners of a receptacle, and a lid or cover having one of its ends directly engaging the keepers at one end of the receptacle, the corners of the cover being cut away at the other end to clear the other keepers, transversely slidable bolts mounted on the cover at the cut away end thereof for engaging the adjacent keepers, laterally movable locking bars mounted on the lid or cover, and a longitudinally movable combined operating and locking bar connected with and actuating the said locking bars and provided at one end with engaging means and having its other end arranged at the transverse bolts and movable into and out of the path of the same and adapted to lock the bolts in their extended position.

10. A locking device of the class described including a cover, transverse bolts located at one end of the cover and slidably mounted thereon, laterally movable locking bars, and a combined operating and locking member connected with the laterally movable locking bars and movable between the transverse bolts for maintaining the same in their extended engaging position.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ANDREW E. LOCKHART.

Witnesses:

C. B. GREGG,

H. H. HOUGHTON.