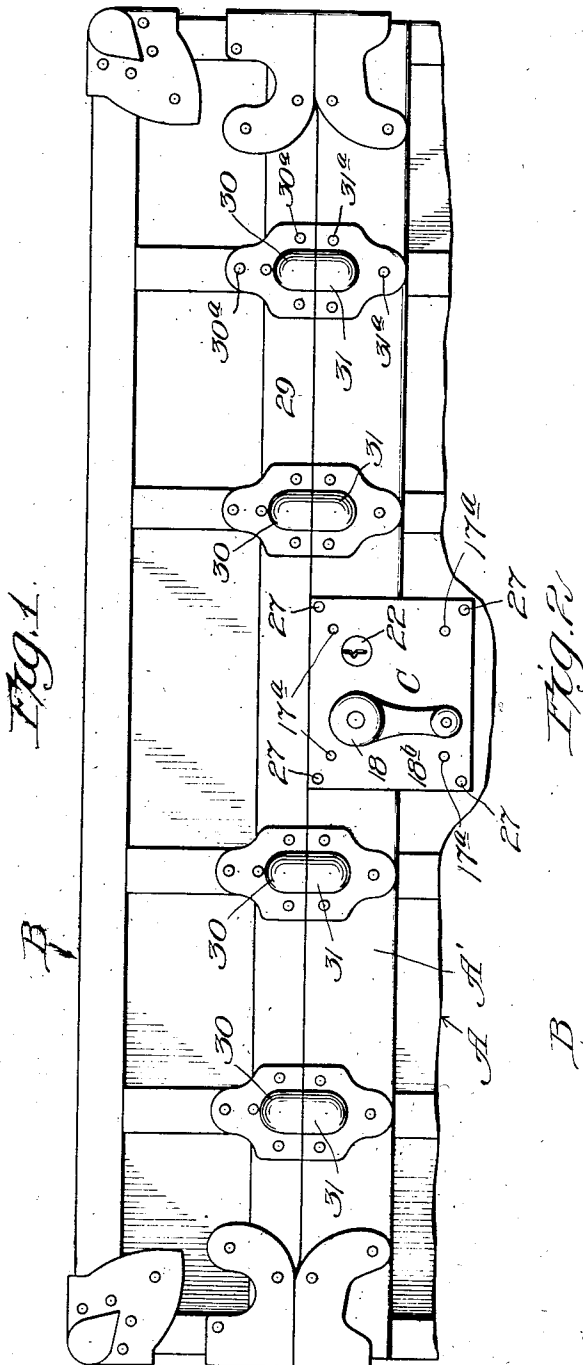
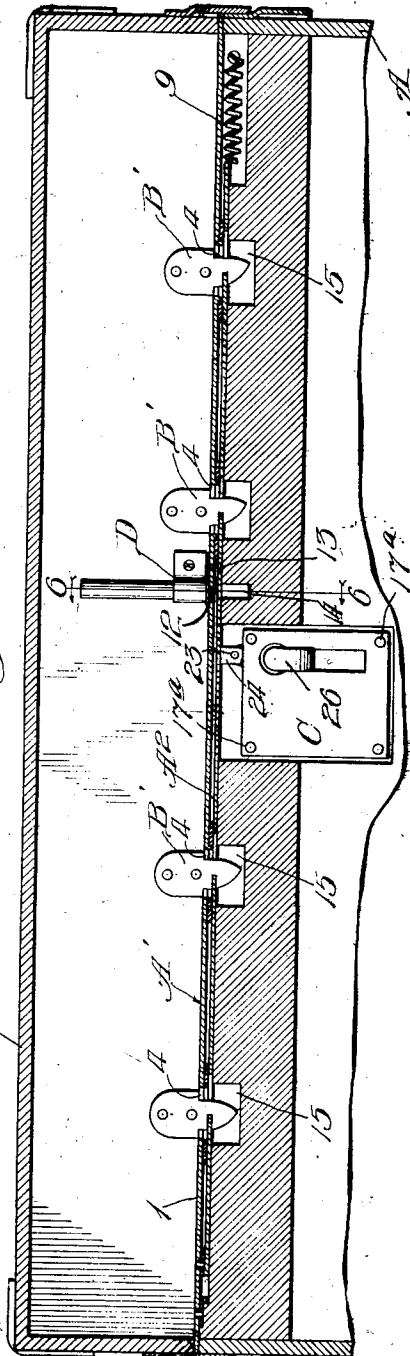


1,370,941.

Patented Mar. 8, 1921.

4 SHEETS—SHEET 1.



INVENTOR

John T. Binkley

BY

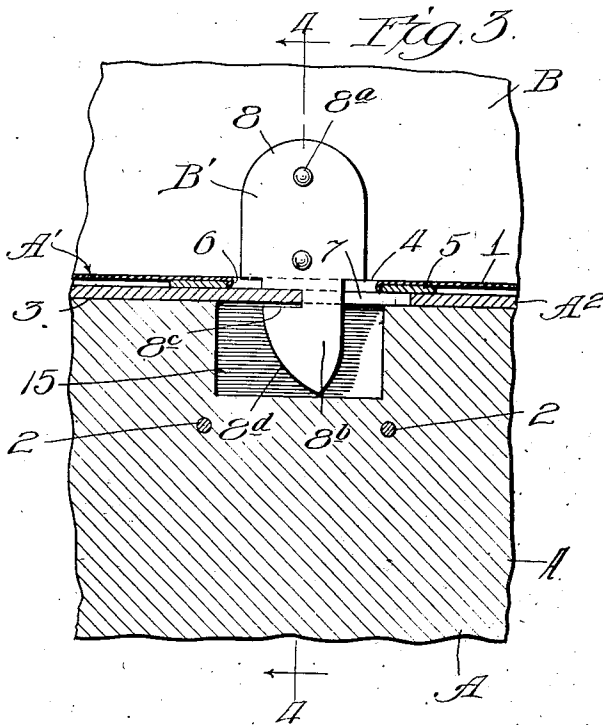
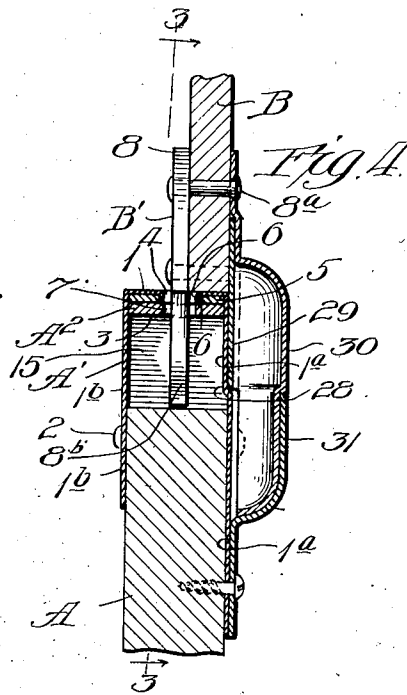
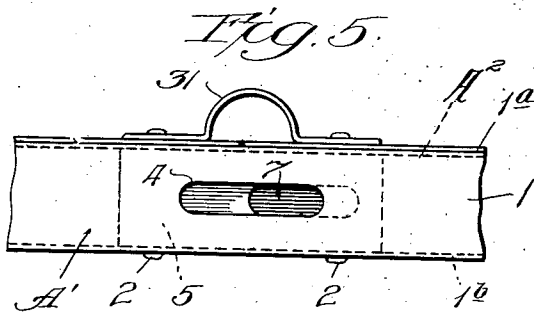
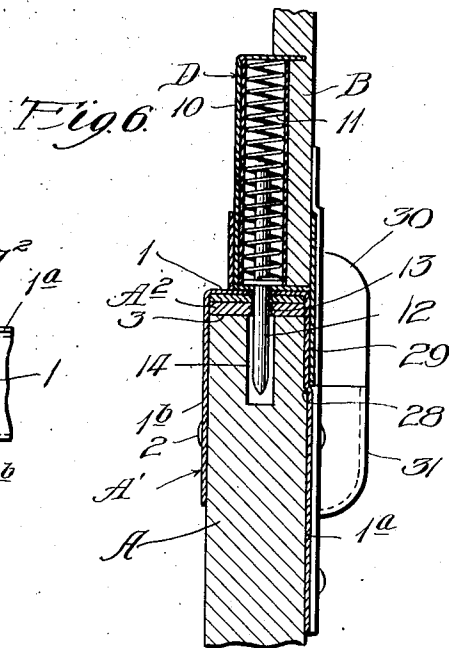
Raymond L. Lee, Hamilton & Miles
 ATTORNEYS

1,370,941.

J. T. BINKLEY,
LOCKING MECHANISM.
APPLICATION FILED DEC. 10, 1919.

Patented Mar. 8, 1921.

4 SHEETS—SHEET 2.



INVENTOR
John T. Binkley

BY
R. G. Smith, Lee, Christman & Miles
ATTORNEYS

1,370,941.

J. T. BINKLEY.
LOCKING MECHANISM.
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4 SHEETS—SHEET 3.

Fig. 7.

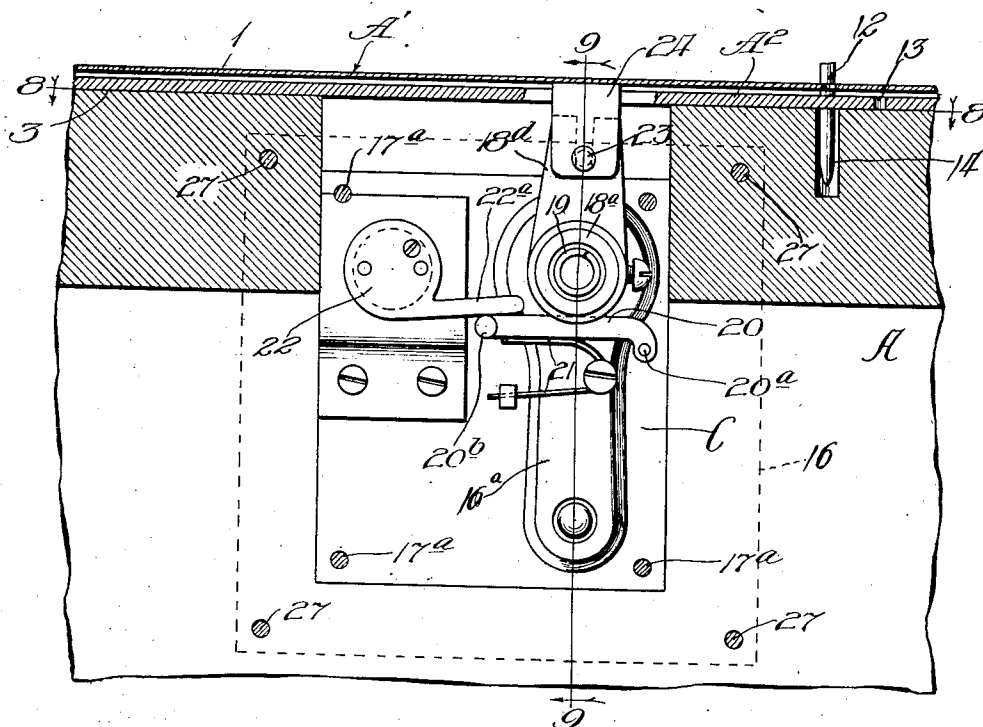
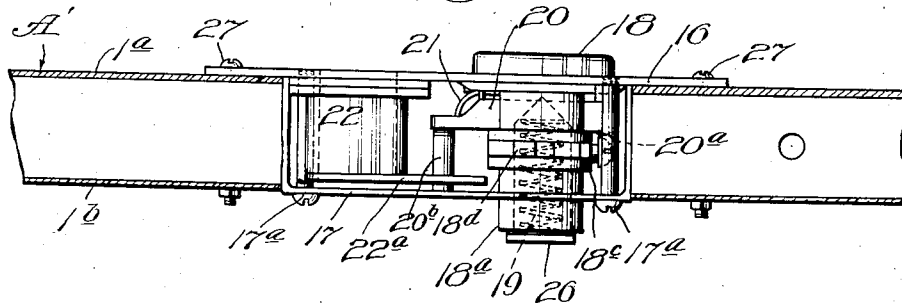


Fig. 8.



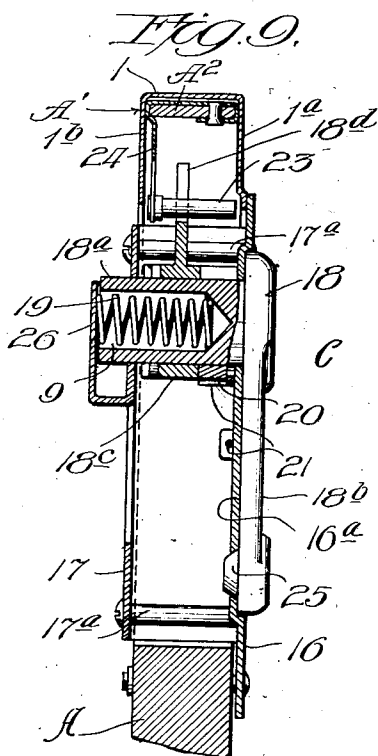
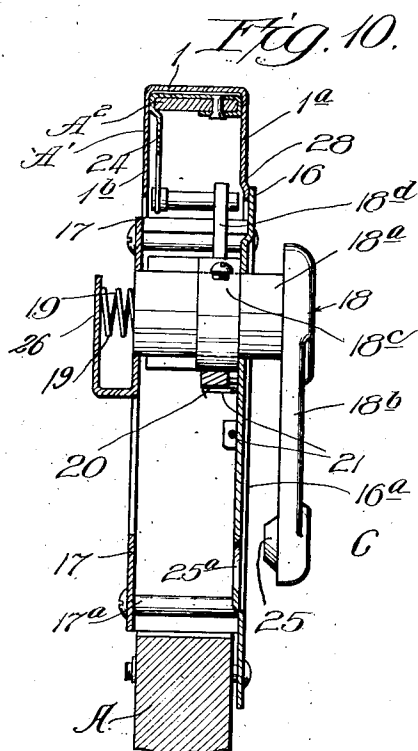
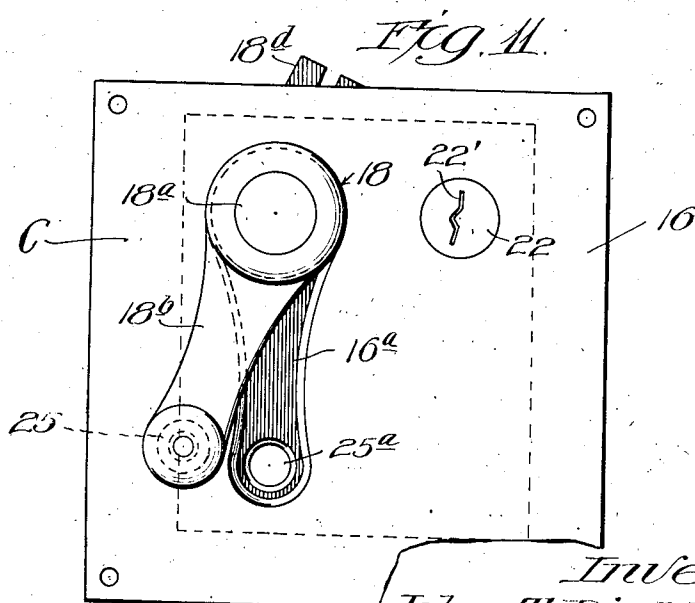
Inventor:
John T. Binkley
by *Nyrenforth, Lee, Christman & Miles*
Attys

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4 SHEETS—SHEET 4.



Inventor
John T. Binkley
by *Nymphath, Sec. Christman & Moseley*

UNITED STATES PATENT OFFICE.

JOHN T. BINKLEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO HENRY LICKLEY & COMPANY,
OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

LOCKING MECHANISM.

1,370,941.

Specification of Letters Patent.

Patented Mar. 8, 1921.

Application filed December 10, 1919. Serial No. 343,941.

To all whom it may concern:

Be it known that I, JOHN T. BINKLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Locking Mechanism, of which the following is a specification.

This invention relates particularly to locking mechanism for trunks, or for analogous purposes; and the primary object is to provide strong and durable locking mechanism for such purposes, which is capable of securing the closure at several points, and which may be operated with great facility. The invention is illustrated, in its preferred embodiment, in the accompanying drawings, in which—

Figure 1 represents a broken elevational view of a trunk, or portable container, equipped with the improved locking mechanism; Fig. 2, a broken vertical sectional view, looking from the rear toward the front of the trunk; Fig. 3, an enlarged broken sectional view taken as indicated at line 3 of Fig. 4 and showing one of a series of catches, or hooks, with which the trunk closure is equipped, said catches co-acting with a longitudinally slidable lock-bar disposed in a suitable housing at the longitudinal edge of one wall of the trunk-body; Fig. 4, a broken section taken as indicated at line 4 of Fig. 3; Fig. 5, a broken plan view, showing the housing for the sliding lock-bar employed; Fig. 6, an enlarged broken sectional view taken as indicated at line 6 of Fig. 2, and illustrating a catch-device adapted to temporarily hold the lock-bar in retracted or non-locking position; Fig. 7, an enlarged broken vertical sectional view, similar to the section shown in Fig. 2, but showing the inner plate of the lock-casing removed; Fig. 8, a plan sectional view taken as indicated at line 8 of Fig. 7; Fig. 9, a broken vertical sectional view through the lock-casing, showing the parts in locked condition; Fig. 10, a similar sectional view, showing the lock-bar-actuator in the released or unlocked position; and Fig. 11, an outer face view of the lock-casing, illustrating the position of the lock-bar-actuator when it is in position to hold the lock-bar retracted so that the closure of the trunk is released.

In the construction illustrated, A represents the body of a trunk, or similar container, having the upper edge of its front wall equipped with a metallic housing A' in which is mounted a longitudinally-shiftable lock-bar A²; B, a closure connected with the body of the trunk in the usual manner (not shown), and equipped with a series of catches, or lock-members B', which co-act with the lock-bar A²; and C, key-controlled lock mechanism equipped with means for actuating the lock-bar A².

The trunk body and its closure may be constructed in any suitable manner. The longitudinal edge-portion of the front wall of the body A has applied thereto the metal housing A' for the lock-bar A². The housing A' preferably comprises a sheet-metal member of channel form, having the web-portion 1 spaced a short distance above the upper edge of the front wall of the body A, and having a depending outer flange 1^a and a depending inner flange 1^b which embrace the outer and inner surfaces, respectively, of said wall, said flanges being securely fastened to said wall, as by means of rivets 2.

The lock-bar A² rests flatwise upon, or against, the edge 3 of the front wall of the body of the trunk, being confined in the space between the web 1 and the edge surface 3, as will be clearly understood from Figs. 3 and 4. The web 1 is provided at intervals, corresponding with the spacing of the closure-carried lock-members B', with slots 4. The slots 4 are adapted to accommodate the members B'. At points corresponding with the perforations, or slots, 4, the web 1 is reinforced by small metal plates, or inserts, 5, which are provided with slots registering with the slots 4, and which are held in place by lugs, or beads, 6. These inserts reinforce the web, or upper wall, 1, of the housing A' and afford bearings for the upper surface of the sliding lock-bar A².

The lock-bar A² preferably comprises a substantial steel bar which is provided at intervals corresponding with the spacing of the members B' with slots 7. The members B' preferably comprise heavy steel members having shank-portions 8 secured by rivets 8^a to the front wall of the closure B and having catch-portions, or fingers, 8^b,

provided with bar-engaging notches 8^c. The portions 8^b are provided with beveled surfaces 8^a which are adapted, in the operation of closing the trunk, to engage the corresponding end walls of the slots 7 and shift the lock-bar A² against the force of a tension spring 9 (Fig. 2), which serves to automatically throw the lock-bar to the locking position.

10 The lock-bar A² may be retracted against the force of the spring 9 by means with which the lock mechanism C is equipped, as will be explained presently.

The front wall of the closure B is 15 equipped on its inner surface with a catch device D adapted to engage the lock-bar after it has been manually retracted in the operation of unlocking the trunk, the purpose being to enable the operator to employ 20 both hands, if desired, to open the lid of the trunk. The device D comprises a housing 10 secured to the inner surface of the front wall of the closure B; a spring 11 in said housing; and a plunger 12 working through 25 the lower end of said housing 10 and adapted to extend through a perforation 13 with which the lock-bar is provided. The perforation 13 is so placed that it will only be engaged by the plunger 12 when the 30 lock-bar is fully retracted against the force of the spring 9. The lock-bar is released from the plunger 12 when the trunk-lid is opened; and when the trunk-lid is closed, the lock-bar having in the meantime been 35 shifted by the spring 9, the lower end of the plunger will ride upon the upper surface of the lock-bar as the lock-bar is automatically shifted when the lid of the trunk is closed. It will be understood that in the 40 operation of closing the lid, the beveled surfaces 8^a of the lock-members B' engage the ends of the slots 7 and shift the lock-bar against the force of the spring 9, and the spring then returns the lock-bar to the locking position shown in Figs. 2 and 3. The 45 upper edge-portion of the front wall of the trunk-body is provided with a hole, or perforation, 14, into which the plunger 12 may extend when the hole 13 is brought into registration with the plunger by shifting the 50 lock-bar to the fully retracted position. The upper edge-portion of the front wall of the trunk-body is provided, also, with recesses, or slots, 15, which accommodate the catch- 55 portions of the lock-members B'.

The lock mechanism C comprises an outer casing-plate 16 and an inner casing-plate 17, which are connected by rivets 17^a; a bodily-shiftable lock-controlled rock-member, or lever, 18, adapted to shift the lock-bar A² against the force of the spring 9, said 60 member 18 comprising a heavy stud, or rock-shaft, 18^a, equipped at its outer end with an actuating handle 18^b, and equipped with 65 in the lock-casing with a rigidly-secured

collar 18^c which carries a yoke 18^d adapted to actuate the lock-bar A²; a spring 19 which serves to project or force outwardly the member 18 to a position shown in Fig. 10, after said member 18 has been released 70 by a suitable key; a dog, or detent, 20, connected by a pivot 20^a with the front wall of the lock-casing, and adapted, when the member 18 is pressed inwardly to the position shown in Fig. 9, to engage the collar 18^c and 75 lock the member 18, the free end of the member 20 being provided with an inwardly projecting stud 20^b, serving as a trip-arm; a spring 21 which tends to throw the dog 20 to the locking position; and a key-controlled barrel 22 mounted in the lock-casing 80 and having its inner end equipped with a trip-arm 22^a which is adapted to engage the trip-arm 20^b of the dog 20 and effect release of the member 18, thereby permitting the spring 19 to throw the member 18 85 forward to a position where it can be employed to actuate the lock-bar A² against the force of the spring 9.

The slot of the yoke 18^d engages a stud 90 23 carried by a depending arm 24 which is rigidly secured to the lock-bar A². The stud 23 is of sufficient length to be always in engagement with the slot of the yoke 18^d, as 95 will be understood from Figs. 9 and 10.

The front plate 16 of the lock-case is provided with a recess, or depression, 16^a, which conforms in outline to and is adapted to 100 accommodate the lever, or handle, 18^b. The free end of the handle 18^b is provided on its inner side with a beveled stud 25 which is adapted to be centered in a socket 25^a constituting a counter-sink, or perforation, at the lower end of the main recess 16^a. The 105 purpose is to insure the proper centering of the lever 18^b as the member 18 is pressed into the locked position.

The spring 19 is received in a bore 9 with which the stud 18^a is provided, and the inner end of the spring bears against a member 26, which is illustrated as formed integrally with the inner wall of the lock-case. 110

The key, or barrel, 22, is located a suitable distance from the bar-actuating member 18 and is provided with a key-slot 22^a. 115 Suitable dogs, or tumblers, of any desired type (not shown) are employed to lock the barrel 22 with relation to the lock-case. When the key is inserted, the tumblers are disengaged and the barrel may be turned by 120 means of the key, thus causing the trip-arm 22^a to effect release of the dog 20 through the medium of the trip-arm 20^b. Thus, the member 18 is released from the dog 20 and forced outwardly by the spring 19 to the 125 position shown in Fig. 10. When the member 18 is thus released and in the projected position, the operator may turn the handle 18^b to the position shown in Fig. 11, thus shifting the lock-bar so as to disengage it 130

from the catches B'. This permits the trunk-lid to be thrown open.

The lock-case is firmly secured to the flanges of the housing A' and the front wall of the trunk-body by means of rivets 27.

It is preferred to off-set the outer flange 1^a of the housing A', as indicated at 28, to accommodate an overlapping steel binding strip 29, with which the front wall of the trunk closure is equipped. Also, it is preferred to equip the front wall of the closure B with a series of dowels 30 which are adapted to engage a corresponding series of sockets 31, with which the upper edge-portion of the front wall of the trunk-body is equipped. The dowels and sockets may comprise suitably stamped sheet-metal members which are provided with flanges secured, respectively, by rivets 30^a and 31^a to the closure of the trunk and the body of the trunk. When the lid is closed, the dowels 30 simply slide into the sockets 31 in the manner shown in Fig. 4. It is unnecessary to provide locking means for the dowels, inasmuch as the trunk is locked interiorly at corresponding points by the lock-bar A² engaging the members B', which are disposed directly back of the dowels.

The operation may be stated briefly: When it is desired to open the trunk, a key is inserted in the barrel 22, thereby disengaging the tumblers. Rotation of the key turns the barrel 22, and, through the medium of the arm 22^a, effects release of the dog 20, thus permitting the spring 19 to force the member 18 to the projected position shown in Fig. 10. The operator then grasps the handle 18^b and by turning or rotating the stud 18^a causes the yoke 18^d to retract the locking bar A² against the force of the spring 9. The catch-device D secures the lock-bar in the fully retracted position. The operator is then free to use both hands in lifting the trunk-lid. When the trunk-lid is lifted, the spring 9 returns the lock-bar to the locking position; and when the trunk-lid is closed again, the lock-members B' cause the lock-bar to be automatically shifted, and the spring 9 returns the lock-bar into locking engagement with the members B'. The operator then forces the actuating member 18 inwardly against the force of the spring 19, and the member 18 is automatically locked in the closed position by the dog 20 springing into position outside the collar 18^c.

It will be noted that the housing for the lock-bar forms a strong reinforcement for the upper edge of the front wall of the trunk-body; also that the lock-bar is disposed parallel with the upper edge of the front wall of the trunk-body; also that the lock-members B' are rigidly carried by the lid, or closure, of the trunk and have catch-
portions adapted to project into the lock-

bar housing and shift the lock-bar, the spring 19 serving to return the lock-bar automatically to the locking position. Thus the trunk closure is securely fastened automatically to the body of the trunk when the lid of the trunk is closed; and when the bar-actuating member 18 is pressed inwardly to the position shown in Fig. 9, it becomes automatically locked in this position, so that the lock-bar cannot be shifted again to release the members B' of the closure until a key is employed to release the barrel 22 and turn the same to effect release of the bar-actuating member 18.

The construction described is simple, durable, and may be manipulated with the greatest facility. The device provides thoroughly practicable means for securely locking a trunk closure at a plurality of points.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitation should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I regard as new and desire so secure by Letters Patent is:

1. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members projecting from the edge-portion of one of said walls and provided with lock-bar engaging shoulders, a shiftable lock-bar mounted at the edge-portion of the other wall and provided with a plurality of shoulders adapted to engage said first-named shoulders, a spring serving automatically to throw said lock-bar to the locking position, said lock-members being provided with means for automatically shifting said lock-bar in the operation of closing the container, and an exteriorly accessible key-controlled actuating member mounted on the wall which carries said lock-bar and serving to actuate the lock-bar in the operation of releasing it from said lock-members.

2. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members projecting from the edge-portion of one of said walls and provided with lock-bar engaging shoulders, a shiftable lock-bar mounted at the edge-portion of the other wall and provided with a plurality of shoulders adapted to engage said first-named shoulders, a spring serving automatically to throw said lock-bar to the locking position, said lock-members being provided with means for automatically shifting said lock-bar in the operation of closing the container, a spring-projected lever adapted to retract said lock-bar, and key-controlled means adapted to lock said lever when it is forced inwardly against the spring.

3. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members projecting from the edge-portion of one of said walls and provided with lock-bar engaging shoulders, a shiftable lock-bar mounted at the edge-portion of the other wall and provided with a plurality of shoulders adapted to engage said first-named shoulders, a spring serving automatically to throw said lock-bar to the locking position, said lock-members being provided with means for automatically shifting said lock-bar in the operation of closing the container, a bodily-shiftable rock-lever adapted to retract said lock-bar, and key-controlled locking means for said rock-lever.
4. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members projecting from the edge-portion of one of said walls and provided with lock-bar engaging shoulders, a shiftable lock-bar mounted at the edge-portion of the other wall and provided with a plurality of shoulders adapted to engage said first-named shoulders, a spring serving automatically to throw said lock-bar to the locking position, said lock-members being provided with means for automatically shifting said lock-bar in the operation of closing the container, an outwardly movable rock-lever comprising a pivot-stud equipped with means for retracting said lock-bar and a handle rigidly mounted on the outer end of said stud, and key-controlled means adapted to engage said stud, and lock said rock-lever in the inwardly pressed position.
5. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members carried by one of said walls and projecting from the edge thereof, a shiftable lock-bar mounted on the other wall and provided with means for interlockingly engaging said lock-members, and a key-controlled spring-projected rock-lever mounted in said last-mentioned wall and adapted to move in an axial direction and adapted also to turn to actuate said lock-bar.
6. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members carried by one of said walls and projecting from the edge thereof, a shiftable lock-bar mounted on the other wall and provided with means for interlockingly engaging said lock-members, a lock-case mounted in said last-mentioned wall and having its outer face provided with a depression, a spring-projected rock-lever mounted in said lock-case and equipped with means for actuating said lock-bar and equipped also with an arm adapted to engage said depression, and key-controlled means mounted in said lock-case and adapted to secure said rock-lever when it is in the inwardly-shifted position.
7. The combination with a container comprising sections having walls adapted to close together, of a plurality of lock-members projecting from one of said walls, a shiftable lock-bar mounted at the edge-portion of the other of said walls and provided with means for interlockingly engaging said lock-members, a lock-case mounted in the last-mentioned wall, a spring-projected rock-lever comprising a pivot-stud equipped with means for actuating said lock-bar and having its outer end equipped with a rigid-actuating arm, said pivot-stud being provided with a shoulder, a dog mounted in said lock-case and adapted to engage said shoulder when said rock-lever is shifted inwardly, and key-controlled means mounted in said lock-case and adapted to release said dog.
8. The combination with a container comprising sections having walls adapted to close together, a plurality of lock-members carried by one of said walls, a lock-bar housing forming an edge-portion for the other of said walls, a shiftable lock-bar in said housing provided with means for interlockingly engaging said lock-members, a spring adapted to throw said lock-bar to the locking position, and key-controlled exteriorly accessible actuating means mounted in said last-mentioned wall and adapted to retract said lock-bar.
9. The combination with a pair of container sections having walls adapted to close together, of a plurality of lock-members carried by one of said walls, a spring-actuated lock-bar mounted at the edge-portion of the other wall and provided with means for interlockingly engaging said lock-members, a spring-projected bodily-shiftable rock-member carried by the second-named wall and adapted to retract said lock-bar, a spring-held dog adapted to engage said rock-member and lock it in its inwardly-pressed position, and a key-controlled barrel provided with a trip-arm adapted to release said dog.
10. The combination with a pair of container sections having walls adapted to close together, of a plurality of locking members carried by one of said walls, a spring-actuated lock-bar carried by the other wall and provided with means for interlockingly engaging said lock-members, said lock-bar being equipped with a rigidly attached stud, a lock-case mounted in said last-named wall, a rock-lever mounted in said lock-case and equipped with a yoke engaging said stud, and key-controlled means adapted to lock said rock-member to said lock-case.
11. The combination with a pair of container sections having walls adapted to

close together, of a plurality of lock-members projecting from one of said walls, a spring-actuated lock-bar slidably mounted at the upper edge of the other wall and provided with a plurality of slots, said lock-members having beveled extremities adapted to shift said lock-bar, a key-controlled actuating member adapted to retract said lock-bar, and a catch device mounted on said first-mentioned wall and adapted to engage said lock-bar after retraction thereof and hold the lock-bar out of engagement with said lock members during the operation of separating said walls. 10

JOHN T. BINKLEY.