Sept. 13, 1932. E. ELLINGSON 1,876,885

LOCKING MECHANISM

Filed April 8, 1930

Fig. 1.

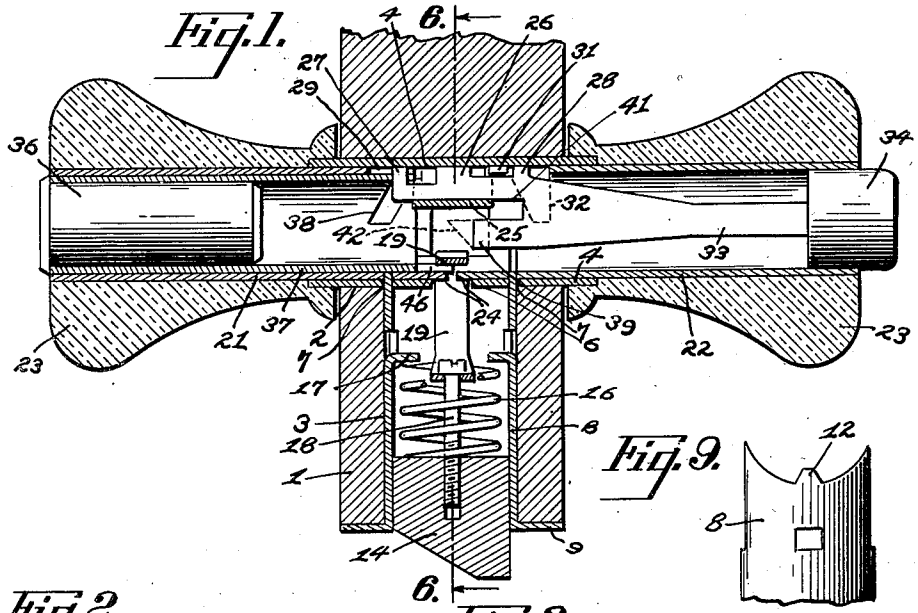


Fig. 9.

Fig. 2.

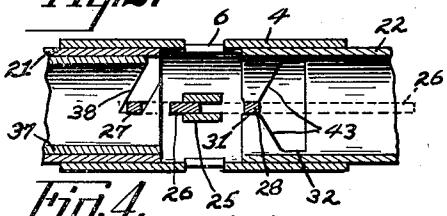


Fig. 3.

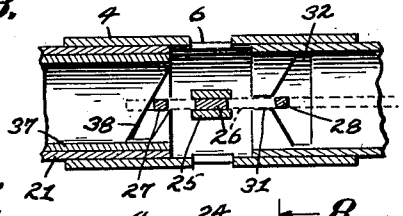


Fig. 4.

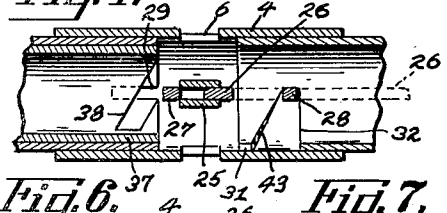


Fig. 5.

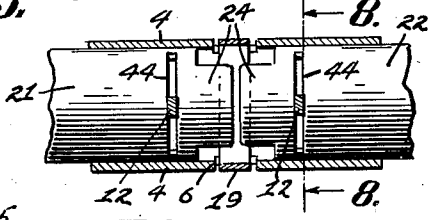


Fig. 6.

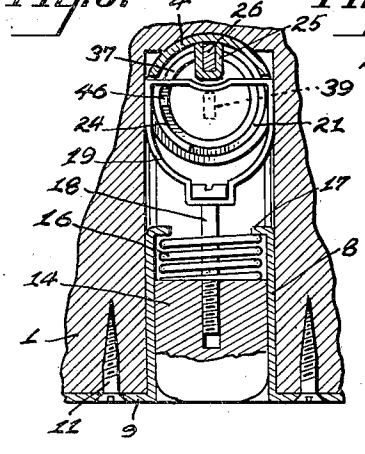


Fig. 7.

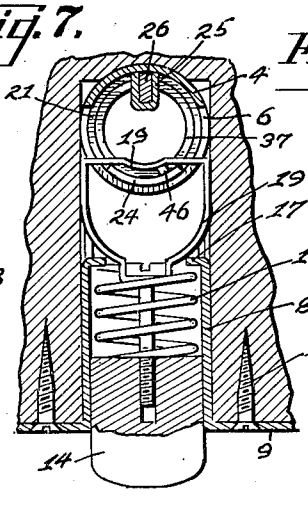
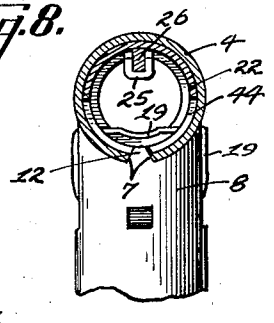


Fig. 8.



INVENTOR
ELLING ELLINGSON
BY Arthur L. Lee.
ATTY.

Patented Sept. 13, 1932 1,876,885

UNITED STATES PATENT OFFICE

ELLING ELLINGSON, OF SAN FRANCISCO, CALIFORNIA

LOCKING MECHANISM

Application filed April 8, 1930. Serial No. 442,588.

The present invention relates to improvements in locking mechanisms, and its principal object is to provide a mechanism of the character described that is particularly simple in construction and may be easily assembled. More particularly it is an object of the present invention to provide an improved means for holding the different sections of a locking mechanism in assembled relation.

My invention relates particularly to a locking mechanism in which a lock casing and a bolt casing are arranged in intersecting mortises within a door or the like, and it is one of the principal objects of the invention to provide simple interlocking means between the two casings whereby one of the casings is held against end-wise and rotary motion, while the other casing is held against rotary motion.

It is further proposed to provide an interlocking arrangement between a bolt mounted in the bolt casing and an operating member mounted in the lock casing whereby the bolt casing is yieldingly held against end-wise movement, and a further feature of the invention is to arrange the interlocking means between the two casings in such a manner that the same also serves as a means for preventing end-wise motion of the operating member for the bolt.

A further object is to provide an improved mechanism of the character described wherein knobs are mounted in independently operative positions upon opposite sides of a door, and are effectually supported and maintained in accurate alinement.

A further object is to provide an improved device wherein the knob bearings are entirely enclosed within the door and by which the use of face plates and exposed securing elements is entirely eliminated.

Another object is to provide an improved locking mechanism wherein a bolt is arranged to be operated by means of knobs upon opposite sides of a door or by a key actuated member mounted within one of the knobs, the actuating connection of each of the knobs and of the key actuated member with the bolt being entirely independent of each other.

A further object is to provide an improved means for mounting and dismounting the knobs.

Another object is to provide an improved locking mechanism operative to secure a latch bolt in extended or retracted positions as desired.

A further object is to provide an improved mechanism of the character described in which a locking member is operative between certain positions manually from one side of the door, and from a further double locking position by means of key actuated mechanism operative from the opposite side of the door.

A still further object is to provide a locking mechanism of simple and improved construction and operation in which the moving parts are of simple and rugged construction, and in which the several parts are effectually held in operative relation.

I accomplish these and other objects by means of the improved device disclosed in the drawing forming a part of the present application wherein like characters of reference are used to designate similar parts throughout the specification and drawing, and in which,

Fig. 1 is a transverse section of my improved locking mechanism as mounted upon a door;

Figs. 2, 3, and 4 are broken sectional views of the lock casing and knob sleeves showing various positions of the locking elements;

Fig. 5 is a broken section view of the lock casing showing the ends of the knob sleeves therein in elevation;

Figs. 6 and 7 are broken sectional views taken upon the line 6—6 of Fig. 1 in the direction indicated;

Fig. 8 is a broken sectional view taken upon the line 8—8 of Fig. 5 in the direction indicated; and

Fig. 9 is a broken side elevation of the inner end of the bolt casing.

Referring to the drawing, the numeral 1 is used to designate in general a door having a transverse mortise 2 and a mortise 3 formed in the edge of the door to intersect with the

mortise 2. The mortises 2 and 3 are of cylindrical form and of the same size whereby both mortises may be forced with the same bit.

A tubular lock casing 4 is fitted into the transverse mortise bore 2, the ends of the casing preferably having its ends extending outwardly slightly past the inner and outer faces of the door. The casing 4 is provided with a circumferential slot 6 substantially midway between its ends and extending somewhat more than half way around the casing. A pair of relatively short slots 7 are formed in the casing in spaced relation to the sides of the slot 6 and positioned midway between the ends of the slot 6.

A bolt casing 8 is fitted into the mortise bore 3. The outer end of the casing 8 is provided with a flange 9 seating upon the edge of the door and apertured to receive suitable screws 11 for securing the casing upon the door. The inner end of the casing is shaped to fit snugly against the side of the lock casing 4 along the intersection of the mortise bores 2 and 3. The inner end of the casing is provided with lugs 12 arranged to enter the slots 7 and to extend through said slots into the casing 4. The edges of the lugs 12 are preferably inclined so that the lugs taper toward their extreme ends, the inclined edges being arranged to engage the ends of the slots 7 whereby said lugs operate to turn the casing 4 to its proper position as the lugs are inserted into the slots.

A latch bolt 14 is slidably mounted within the outer end of the bolt casing 8. The bolt 14 is normally moved to outwardly extending locking position by means of a suitable spring 16 mounted within the casing in back of the bolt 14, said spring bearing against the inner side of the bolt member and being seated upon lugs 17 struck inwardly from the walls of the casing 8.

The latch bolt 14 is provided with a stem 18 extending axially inwardly into the casing 8. An actuating member 19 is mounted upon the inner end of the stem 18, said member 19 being constructed in the shape of a stirrup and extending through the slot 6 into the lock casing 4.

A pair of knob sleeves 21 and 22 extend axially into the ends of the lock casing 4 from opposite ends thereof. The sleeves 21 and 22 are tubular in form and are provided with knobs 23 of any suitable form and construction secured upon the outer ends of the sleeves in any convenient manner. The sleeves 21 and 22 fit neatly within the ends of the casing 4, the ends of said sleeves being spaced within the center portion of the casing. Extensions 24 are formed upon the inner ends of the sleeves 21 and 22, said extensions overhanging the slot 6 from opposite edges thereof and being arranged to engage the stirrup 19 for moving said stirrup to retract the bolt when either knob sleeve is turned within the casing. The ends of the extensions 24 are slightly spaced to permit either sleeve to be rotated independently of the opposite sleeve. The sleeves 21 and 22 extend axially through the knobs 23 and open outwardly through the outer ends of the knobs. The knobs 23 are preferably recessed to fit over the outwardly extending ends of the casing 4.

A locking member, designated in general by the numeral 26 is slidably mounted longitudinally within the casing 4. The locking member is guided and held against rotation by means of a U-shaped guide member 25 secured within the casing 4 opposite the slots 6 and 7. The member 26 is provided with a pair of spaced lugs 27 and 28 arranged to be received within longitudinal slots 29 and 31 formed in the ends of the sleeves 21 and 22 respectively, the slot 31 being provided with circumferentially disposed extensions 32 spaced from the inner end of the sleeve 22. The lug 27 is arranged to be moved clear of the end of the sleeve 21 and the lug 28 is arranged to be moved at the same time to match with the extensions 32 of the sleeve 22 whereby the knob sleeves may be rotated past the lugs when in an unlocking position.

The member 26 is provided with a longitudinal extension 33 extending axially through the sleeve 22 and provided at its outer end with a button 34 positioned at the end of the sleeve whereby the member 26 may be operated manually from the inside of the door.

A suitable cylinder lock 36 is mounted within the outer end of the sleeve 21, said lock being provided with a cylinder 37 extending inwardly to the inner end of the sleeve 21 and fitting neatly therein. The inner end of the cylinder 37 is provided with an inclined slot 38 arranged to engage the lug 27 whereby a rotation of the cylinder will impart axial movement to the member 26. The lock 36 may be of any suitable construction and is operated in the ordinary manner by means of a suitable key, not shown, to rotate the cylinder 37 within the sleeve 21.

The locking member 26 is provided with an extension 39 movable between the back of the guide 25 and the opposite wall of the casing 4. The extension 39 is defined by a slot 41 arranged to receive the back of the guide member, and of a width sufficient to receive the inner end of the stirrup 19 when in retracted position for securing said stirrup and the bolt actuated thereby in retracted position, if desired. The end of the extension 39 may be inclined, as shown in dotted lines at 42, to be engaged by the stirrup 19 when in certain positions whereby the movement of the stirrup when the bolt is retracted operates to move the locking member to releasing position, as hereinafter more fully explained.

The edges of the slot extensions 32 adja-

cent the inner end of the sleeve 22 are inclined as at 43 whereby the sleeve may be turned and the inclined edges moved to engage the lug 28 and move the member 26 longitudinally to releasing position.

To assemble my improved locking mechanism, the lock casing 4 is inserted into its mortise bore 2 with the slots 6 and 7 opposite the opening into the mortise 3. The knob sleeves 21 and 22, with the knobs 23 and the locking member 26 and lock 36 assembled thereon, are then applied upon the ends of the casing 4, the member 26 being inserted into the guide 25. The bolt casing 8, with the bolt 14 and its actuating stem and stirrup assembled thereon, is inserted into the mortise 3, the stirrup being moved into the slot 6 of the casing 4 by pressing the latch bolt inwardly manually before the knob sleeves 21 and 22 are moved inwardly sufficiently to cause the extensions 24 to extend over the slot 6. The sleeves 21 and 22 are then moved inwardly to their extreme positions with the extensions 24 extending into the stirrup 19. The bolt casing 8 is then pressed inwardly to its extreme position with the lugs 12 entering the slots 7 and extending through said slots into circumferential slots 44 formed in the sleeves 21 and 22, as best shown in Figs. 5 and 8 of the drawing, thereby preventing axial movement of the casing 4 and the sleeves 21 and 22. The slots 44 are made of sufficient length to permit rotation of the sleeves 21 and 22 through approximately 180° of movement. The casing 8 is then secured by the screws 11 applied through the flange 9 into the edge of the door, thereby effectually securing the entire device upon the door.

In operation, the locking member 26 normally occupies a position with the lug 27 clear of the slot 29 and the lug 28 opposite the extensions 32 of the slot 31, whereby either knob sleeve 21 and 22 may be rotated past the lugs 27 and 28. When it is desired to lock the door against opening from the outside without interfering with the free opening of the door by the knob upon the inner side of the door, the button 34 is pressed inwardly, thereby causing the member 26 to be moved longitudinally within the casing 4 and moving the lug 27 into the slot 29 of the sleeve 21, thereby locking the sleeve 21 against rotation and preventing the outer knob from being rotated to operate the latch. This position is herein referred to as the normal or single locking position, and is illustrated in Fig. 3 of the drawing. By turning the inner knob, the extension 24 of the sleeve 22 is moved to actuate the bolt and move the same to a releasing position whereby the door may be opened. This rotative movement of the sleeve 22 causes the lug 28 to be engaged by the inclined edges of the slot extensions 32, thereby moving the member 28 longitudinally to its unlocking position, as shown in Fig. 4 of the drawing.

To lock the door against opening from either side, the locking member 26 is first moved manually to the normal locking position shown in Fig. 3, the lug 27 thereby being moved into the end of the slot 29 and at the same time into the open end of the inclined slot 38 of the lock cylinder. When now the lock cylinder 37 is turned within the sleeve 21 by means of a proper key inserted into the lock 36, the slot 38 engages the lug 27 and moves the member 26 longitudinally to the double locking position shown in Fig. 2 of the drawing, thereby moving the lug 28 into the slot 31 near the end of the sleeve 22. In this position, the lug 27 engages the slot 29 and prevents rotation of the outer sleeve 21, and the lug 28, engaging the slot 31, prevents rotation of the inner sleeve 22. At the same time, the extension 39 is moved to extend in back of the stirrup 19, thereby preventing the bolt from being retracted.

To unlock the door, the cylinder 37 is turned by means of the lock 36 in a reverse direction, thereby forcing the member 26 longitudinally to its normal locking position. A further rotation of the cylinder 37 by means of the lock key, causes an extension 46 carried upon the inner end of the cylinder 37 and extending into the stirrup 19, to engage and move said stirrup to retract the bolt, the initial movement of the cylinder causing the extension 46 to be moved from the right hand side of the stirrup, as viewed in Figs. 6 and 7, to the left hand side, and the further movement causing the stirrup to be retracted into the casing 4 to actuate the bolt. The lock cylinder 37 may be turned independently, or if desired, the knob sleeve 21 may be turned as shown in Fig. 6 to actuate the bolt after the locking member is receded from its double locking position.

If it is desired to hold the bolt in a retracted position, the bolt is pressed inwardly manually to its full retracted position. The lock 36 is then turned by means of its key to move the locking member 26 to its full or double locking position, thereby moving the extension 39 into the stirrup and preventing the bolt from being returned to its normal latching position.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the device is of course subject to modification in numerous details of construction and arrangement without departing from the spirit of my invention. I therefore do not wish to be restricted to the specific details illustrated and described, but desire to avail myself of all modifications which may fall within the scope of the appended claims.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:—

1. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; and a locking member mounted within the lock casing and movable to engage and disengage the sleeves as desired.

2. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; and a locking member mounted within the lock casing, said member being movable from an unlocking position, permitting free rotation of both knob sleeves, to single and double locking positions locking one or both of said sleeves against rotation as desired.

3. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing: a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member mounted within the lock casing, said member being movable from an unlocking position, permitting free rotation of both knob sleeves, to single and double locking positions locking one or both of said sleeves against rotation as desired; and key actuated means mounted in one of the knobs and engaging the locking member to move said member to desired positions.

4. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member mounted within the lock casing, said member being movable from an unlocking position, permitting free rotation of both knob sleeves, to single and double locking positions locking one or both of said sleeves against rotation as desired; key actuated means mounted in one of the knobs and engaging the locking member to move said member to desired positions; and manually operated means mounted within the opposite knob and connected to the locking member to move the same between certain positions independently of the key actuated means.

5. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member mounted within the lock casing, said member being movable from an unlocking position, permitting free rotation of both knob sleeves, to single and double locking positions locking one or both of said sleeves against rotation as desired; key actuated means mounted in one of the knobs and engaging the locking member to move said member to desired positions; manually operated means mounted within the opposite knob and connected to the locking member to move the same between certain positions independently of the key actuated means; and means carried by the locking member and movable to engage the bolt stem to secure the bolt in receded position.

6. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing

and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member slidably mounted within the casing, one end of said member extending longitudinally through the sleeve of the inner knob and being manually operable therethrough; key actuated means mounted within the outer knob to engage and move the locking member from the outer side of the door; and locking lugs formed upon the locking member and movable to engage slots formed in the knob sleeves to lock the knobs against rotation.

7. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member slidably mounted within the sleeve of the inner knob and being manually operable therethrough; key actuated means mounted within the outer knob to engage and actuate the locking member; means connected to the lock casing to hold the locking member against rotation; an outer knob locking lug formed upon the locking member and movable to engage a longitudinal groove in the outer knob sleeve to lock said sleeve and knob against rotation; and an inner knob locking lug formed upon the locking member and movable to engage a groove in the inner knob sleeve to lock said inner sleeve and knob against rotation, said groove having circumferential extensions permitting rotation of the said sleeve when the locking member is in certain positions.

8. A locking mechanism comprising a lock casing mounted transversely through the door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member slidably mounted within the sleeve of the inner knob and being manually operable therethrough; key actuated means mounted within the outer knob to engage and actuate the locking member; means connected to the lock casing to hold the locking member against rotation; an outer knob locking lug formed upon the locking member and movable to engage a longitudinal groove in the outer knob sleeve to lock said sleeve and knob against rotation; an inner knob locking lug formed upon the locking member and movable to engage a groove in the inner knob sleeve to lock said inner sleeve and knob against rotation, said groove having circumferential extensions permitting rotation of the said sleeve when the locking member is in certain positions; the inner edges of said groove being inclined to engage the locking lug and move said lug and member from a locking position to an unlocking position.

9. A locking mechanism comprising a lock casing mounted transversely through a door; a bolt casing mounted within the edge of the door and engaging the lock casing; a bolt slidably mounted within the bolt casing and provided with a stem extending into the lock casing; a pair of knobs rotatably mounted upon the ends of the lock casing and provided with sleeves extending into the casing into actuating engagement with the bolt stem; means engaging the knob sleeves within the casing to prevent axial movement of said sleeves relative to the casing and to permit rotation of said sleeves for actuating the bolt; a locking member slidably mounted within the sleeve of the inner knob and being manually operable therethrough; key actuated means mounted within the outer knob to engage and actuate the locking member; means connected to the lock casing to hold the locking member against rotation; an outer knob locking lug formed upon the locking member and movable to engage a longitudinal groove in the outer knob sleeve to lock said sleeve and knob against rotation; an inner knob locking lug formed upon the locking member and movable to engage a groove in the inner knob sleeve to lock said inner sleeve and knob against rotation, said groove having circumferential extensions permitting rotation of the said sleeve when the locking member is in certain positions; and an inclined edge formed upon the locking member to be engaged by the bolt stem when moved inwardly to move the locking member to an unlocking position when said bolt is receded.

10. In a locking mechanism, a lock casing mounted transversely through a door; and a bolt casing mounted in the edge of the door and provided with lugs engaging slots formed in the lock casing to secure said casing within the door, said lugs being tapered toward their outer end, and the edges of said lugs engag-

ing the ends of the slots to turn the lock casing to its proper position within the door.

11. In a locking mechanism, a lock casing mounted transversely through a door; a bolt casing mounted in the edge of the door and provided with lugs entering through slots formed in the lock casing to secure said casing against axial movement with the door; and knob sleeves rotatably mounted within the ends of the lock casing, said knob sleeves having circumferential slots engaged by the inner ends of the lugs to hold said sleeves against axial movement and to permit limited rotative movement of said sleeves relative to the lock casing.

12. In a locking mechanism, a lock casing mounted transversely through a door; a pair of knob sleeves rotatably mounted within the ends of the casing; and means engaging slots formed in the sleeves within the ends of the casing to hold the sleeves against axial movement and to permit limited rotative movement of the sleeves independently of each other.

13. In a locking mechanism, a lock casing mounted transversely through a door; a pair of knob sleeves rotatably mounted within the ends of the casing; means engaging slots formed in the sleeves within the ends of the casing to hold the sleeves against axial movement and to permit limited rotative movement of the sleeves independently of each other; a locking member slidably mounted within the casing and provided with lugs movable to engage slots formed in the knob sleeve to lock one or both of said knobs against rotation as desired; and means carried by the casing to prevent rotation of the locking member.

14. In a locking mechanism, a lock casing mounted transversely through a door; knob sleeves mounted within the ends of the casing, said sleeves being independently rotatable from opposite sides of the door; a bolt slidably mounted within the edge of the door; bolt actuating means connected to the bolt and engaged by the sleeves for receding the bolt when either knob is turned; a locking member slidably mounted within the casing and provided with lugs movable to engage slots formed in the sleeves to lock one or both of said sleeves against rotation; and an extension carried by the locking member and movable to engage the bolt actuating means to secure said bolt in receded position.

15. In a locking mechanism, a tubular lock casing mounted transversely thru a door and provided with a pair of spaced slots; a pair of tubular knob sleeves rotatably mounted within the lock casing extending from the approximate center to opposite ends thereof and provided with slots registering longitudinally with the slots in the lock casing; and a bolt casing mounted within the edge of the door and provided with lugs extending thru the registered slots of the lock casing and the knob sleeves to secure the same in assembled relation within the door.

16. In a locking mechanism, a tubular lock casing mounted transversely thru a door and provided with a pair of spaced slots; a pair of tubular knob sleeves rotatably mounted within the lock casing extending from the approximate center to opposite ends thereof and provided with slots registering longitudinally with the slots in the lock casing; and a bolt casing mounted within the edge of the door and provided with lugs extending thru the registered slots of the lock casing and the knob sleeves to secure the same in assembled relation within the door, said slots in said knob sleeves being longer than the slots in the lock casing whereby partial rotation of said sleeves within said lock casing may be permitted.

17. In a locking mechanism, a lock casing mounted transversely through a door, a knob sleeve extending into the lock casing, and a bolt casing mounted within the edge of the door and provided with means extending into engagement with the lock casing and with the sleeve therein to secure the same in assembled relation upon the door.

18. In a locking mechanism, a lock casing mounted transversely through a door, a knob sleeve extending into the lock casing, said sleeve having a circumferential slot alined with an opening formed in the lock casing, and a bolt casing mounted within the edge of the door and provided with means extending through the casing opening into engagement with the slot of the sleeve to secure said casing and sleeve in assembled relation.

19. In a locking mechanism, a lock casing mounted transversely through a door, a knob sleeve extending into the lock casing, a bolt casing mounted within the edge of the door and provided with means extending into interlocking engagement with the lock casing and with the sleeve therein to hold the same in operative assembled relation, a bolt slidably mounted within the bolt casing and provided with a stem and yoke extending into the lock casing, an actuating extension carried by the end of the sleeve and engaged within the yoke, and a spring seated within the bolt casing and in engagement therewith and with the bolt, said spring being compressed to exert an outward pressure upon the bolt and an inward pressure upon the bolt casing, whereby the bolt casing is held in interlocking engagement with the lock casing and the sleeve and the yoke is held seated upon the actuating extension.

20. In a lock mechanism for a door having intersecting mortice bores, a cylindrical casing mounted in the transverse bore to form bearing for a rotatable member slidably mounted therein and having a lug engaging slot and means for receiving a bolt stem

formed in one side thereof, a bolt casing slidable in the other bore having a lug extending therefrom adapted to engage within the slot to secure the said cylindrical casing against movement within its bore and the slots engaging the lug to secure the bolt casing against rotative movement within its bore, a bolt slidably mounted within the bolt casing, means connecting the bolt to the rotatable member for operation thereby and spring means urging the bolt outward and the bolt casing inward in its bore whereby the lug is held in engagement with the slot.

21. In a lock mechanism for a door having intersecting mortice bores, a cylindrical casing mounted in the transverse bore to form bearing for a rotatable member slidably mounted therein, and having a lug engaging slot and means for receiving a bolt stem formed in the casing, a bolt casing slidably mounted in the other bore having a lug extending through the slot and means formed on the rotatable member and engaged by the said lug within the cylindrical casing to prevent withdrawal of the said rotatable member from the casing and permitting rotation thereof for actuating a bolt slidably mounted in the bolt casing and operatively connected to the rotatable member.

22. In a lock mechanism for a door having intersecting mortice bores, a cylindrical casing mounted in the transverse bore to form bearing for a rotatable member insertable from the open end of the cylindrical casing, a slot and means for receiving a bolt stem formed in the casing, a bolt casing mounted in the other bore having a lug engaged within the slot to secure the cylindrical casing within its bore and the slot engaging the lug to hold the bolt casing against turning within its bore, a bolt slidable in the bolt casing having a stem extending into the cylindrical casing, an aperture formed in the stem to receive one end of the rotatable member when inserted into operative position within the cylindrical casing and means carried by the bolt casing preventing withdrawal of the rotatable member.

23. A locking mechanism comprising a bolt casing having a bolt retractible therein, and spring means urging the bolt outward, a lock casing arranged transversely to the bolt casing and having an operating element for the bolt revolvable therein, a connection between the operating element and the bolt adapted to urge the bolt casing upon the lock casing and a connection between the two casings adapted to hold the operating element and the lock casing against axial movement and the two casings against rotative movement.

24. A locking mechanism comprising a bolt casing having a bolt retractible therein, a lock casing arranged transversely to the bolt casing and having an operating element for the bolt revolvable therein and a slidable connection between the two casings forming means for holding the operating element against axial movement.

25. A locking mechanism comprising a lock casing having lug receiving openings, a bolt casing extending transversely thereto and having lugs receivable in the openings, a bolt slidable in the bolt casing, a bolt actuating member rotatably carried by the lock casing and being operatively connected to the bolt, and a spring for yieldingly holding the bolt in contact with the actuating member and the bolt casing pressing against the lock casing.

26. In a locking mechanism, a lock casing having a bolt and a lug receiving opening, a bolt casing having a lug receivable in the lug opening, a bolt slidable in the bolt casing, a bolt operating member rotatable in the lock casing, and being operatively connected to the bolt, said member having a slot for slidably receiving the lug, said lug preventing longitudinal movement of the operating member in the lock casing.

It witness whereof, I hereunto set my signature.

ELLING ELLINGSON.