

March 18, 1930.

W. R. SCHLAGE

1,751,101

DOOR LOCK

Filed Aug. 8, 1923

2 Sheets-Sheet 1

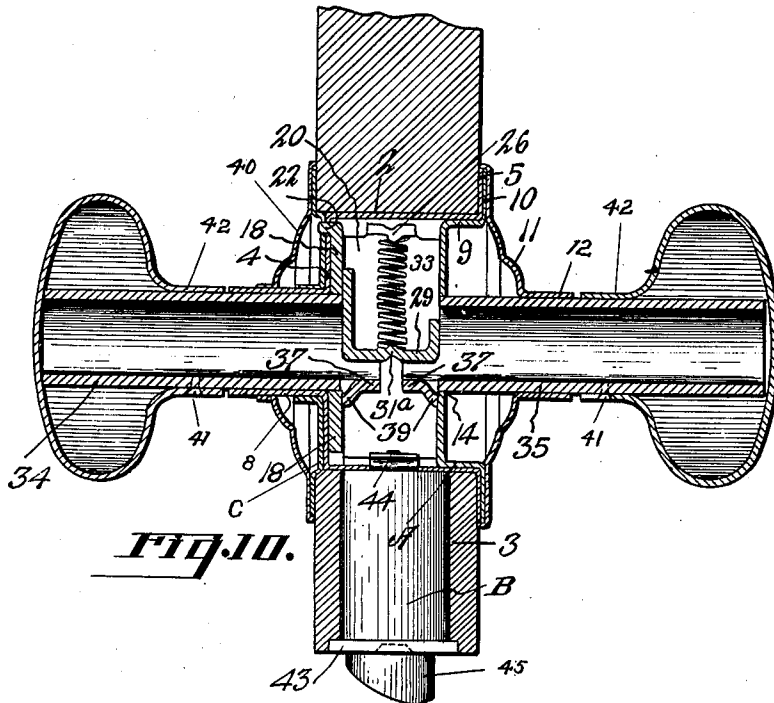


FIG. 10.

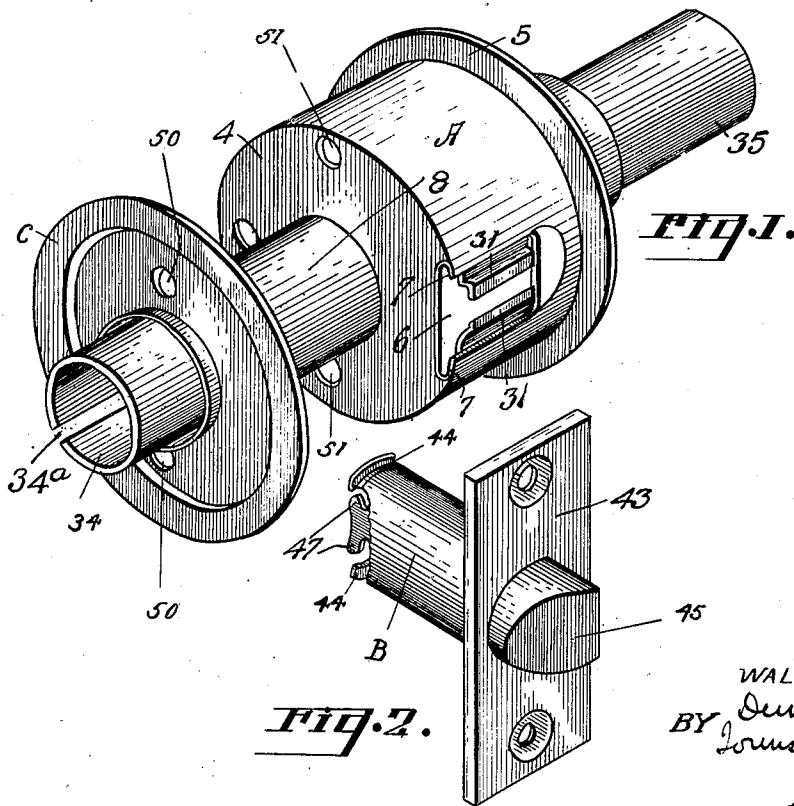


FIG. 1.

FIG. 2.

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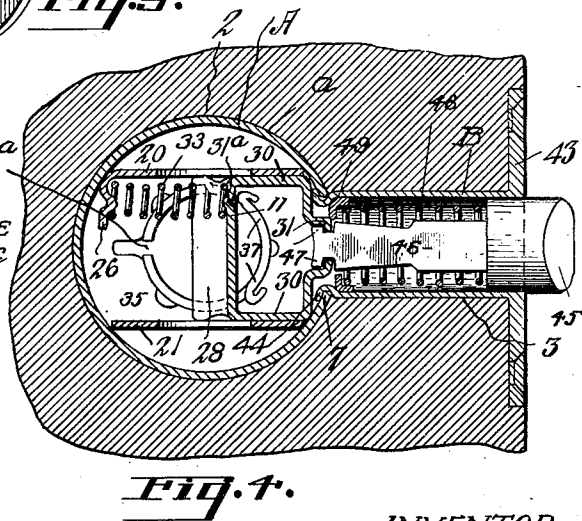
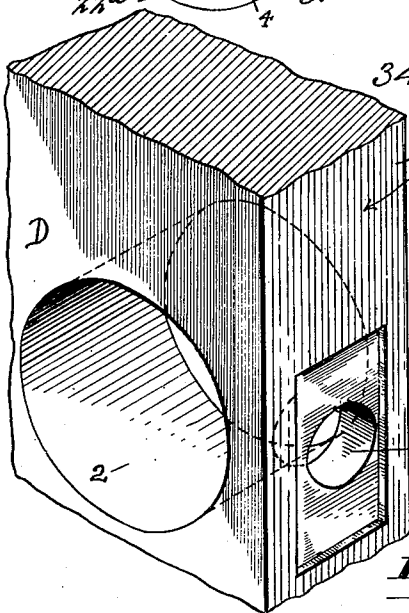
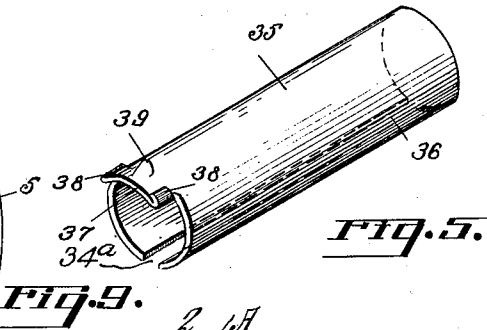
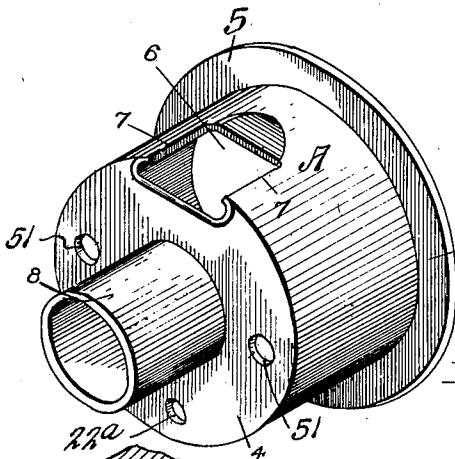
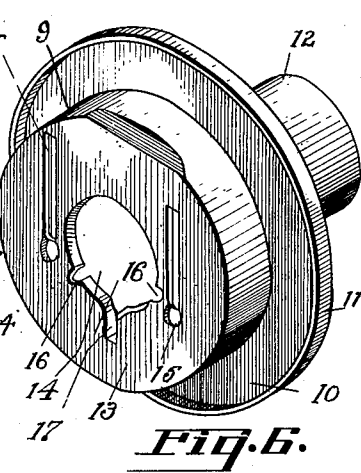
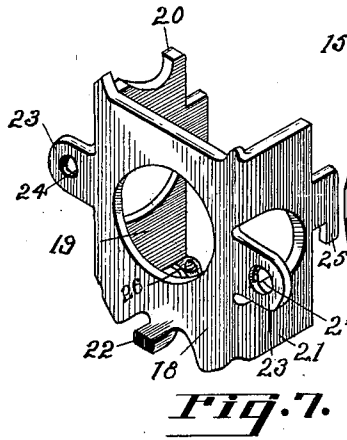
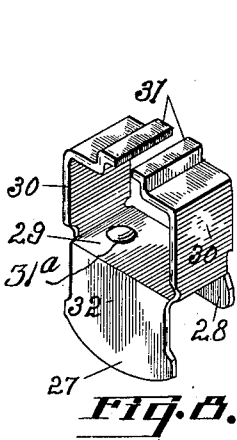
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1,751,101

DOOR LOCK

Filed Aug. 8, 1923

2 Sheets-Sheet 2



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DOOR LOCK

Application filed August 8, 1923. Serial No. 656,335.

This invention relates to locks and especially to door locks and the like.

The object of the present invention is to generally improve and simplify the construction and operation of locks of the character described; to provide a lock which is compact and substantial in construction and cheap to manufacture; to provide a lock in which the individual parts may be cut and shaped by die operations; and further to provide a lock in which assembling cost and time required for installation are reduced to a minimum.

One form which my invention may assume is exemplified in the following description and illustrated in the accompanying drawings, in which—

Fig. 1 is a perspective view of the latch actuating unit, said view also showing the clamping plate.

Fig. 2 is a perspective view of the latching unit.

Fig. 3 is a perspective view of a door showing the manner in which the holes are drilled to receive the lock.

Fig. 4 is a cross-section through a door showing the latch actuating unit and the latching unit in position and interlocked with relation to each other.

Fig. 5 is a perspective view of one of the spindles.

Fig. 6 is a perspective view of the housing cover.

Fig. 7 is a perspective view of the retractor guide.

Fig. 8 is a perspective view of the retractor.

Fig. 9 is a perspective view of the lock housing.

Fig. 10 is a horizontal longitudinal section through the lock and the door.

Referring to the drawings in detail, and particularly to Figs. 1 and 2, A indicates in general the latch actuating unit and B the latching unit. These units are adapted to be separately installed in a door and each contains a complete self-contained mechanism. The latch actuating unit is installed transversely of a door, while the latch unit B is installed endwise of the door or, in other words, at right angles to the latching unit. The re-

spective housings are cylindrical in cross-section and in order to prepare a door, it is only necessary to bore a pair of holes as indicated at 2 and 3 with an ordinary brace and bit, the hole 2 being provided for the reception of the housing or unit A, and the hole 3 for the housing or unit B. The unit B is secured by screws which pass through a keeper plate forming a part of the latching unit B, as will hereinafter be described, while the latching unit A is secured by means of a clamping plate C, as will hereinafter be described.

The latch actuating unit is perhaps best illustrated in Figs. 1, 4, 5, 6, 7, 8 and 9. It consists of the housing A, one end of which is closed by an integral end plate 4. The housing is cylindrical in cross-section and one end is open, the open end being provided with an annular flange 5 which is adapted to engage one of the faces of a door, as will hereinafter be described. The housing A is otherwise cut to form a slot 6, which forms a pair of retaining flanges 7. It is furthermore provided with an end bearing 8 which forms a support and journal for one of the spindle sections hereinafter to be described. The latch actuating unit also employs a housing cover such as shown in Fig. 6. This cover consists of a shallow cup shaped member 9 which terminates in an annular flange 10, the exterior diameter of the cup shaped member 9 being such that it may be inserted endwise in the open end of the housing A, thereby forming a cover for one end. The housing cover also serves as a support for an escutcheon plate 11 which terminates in a bearing 12. This bearing forms a journal and support for one of the spindle sections hereinafter to be described; that is, a divided spindle is employed, one spindle being carried by the journal member 12, and the other spindle by the journal or bearing member 8. The end of the housing cover is practically closed by an end plate 13. This plate, however, is provided with a central opening 14 through which the cooperating spindle passes and it is also provided with two longitudinally disposed slots 15. The central opening 14 is notched at the points indicated at 16 and 17

which serve a function hereinafter to be described.

Adapted to be supported by the housing cover shown in Fig. 6, is a retractor guide such as shown in Fig. 7. This guide consists of an end plate 18 in which is formed a central opening 19 through which one of the spindle members extends. Formed as an integral part of the end plate 18 are side plates 20 and 21, and also formed integral with the end plate are an aligning lug 22 and a pair of side lugs 23. These lugs are drilled and tapped as shown at 24 and their function will hereinafter be described. Formed integral with the side plates 20 and 21 are interlocking lugs 25, and formed integral with the lower end of the side plate 20 is a spring supporting lug 26. Adapted to be received by the retractor guide shown in Fig. 7 and guided thereby is a retracting member generally indicated in Fig. 8. This member consists of a side plate 27 and a secondary side plate 28; these plates being connected by a horizontally disposed plate 29. Formed integral with this plate are two upwardly extending end plates 30, and formed integral with these plates are retracting fingers such as indicated at 31. The intermediate or connecting plate 29 is raised at the point indicated at 31^a. This raised portion aligns with the spring lug 26 and a spring is interposed between the members 26 and 32 as indicated at 33 in Figs. 4 and 10.

The mechanism so far described practically completes the latch actuating unit, the only other members cooperating therewith being the spindle sections shown at 34 and 35 as will hereinafter be described. The parts shown in Figs. 6, 7, 8 and 9 are assembled in the following manner:

The escutcheon plate 11 is first passed over the annular flange 10 of the housing cover and it is there permanently secured by beading the flange of the escutcheon plate 11. The retractor guide shown in Fig. 7 is next secured to the housing cover by passing the lugs 25 through the slots 15 and then exerting a downward pressure on the retractor guide so as to form an interlock between the lugs 25 and the end plate 13 of the housing cover. A spring such as shown at 33 is then placed on the lug 26 and the retracting member shown in Fig. 8 is then inserted endwise and forced downwardly between the side plates 20 and 21 and the end plate 18. The spring 33 is in this manner placed under compression and will be maintained under compression when the spindle sections are inserted. The retractor is, however, manually held in position until these sections are inserted. The spindles are identical in construction and are best illustrated in Fig. 5. Each spindle consists of a tubular section 36, on one end of which is formed a pair of retracting lugs 37. The ends of the lugs are turned up as in-

dicated at 38 to strengthen and reinforce the same, and a retaining lug 39 is also formed on each spindle section to secure the spindles against endwise removal, the lugs 39 being formed by pressing the metal upwardly as indicated at 39 by die action or otherwise.

The tubular spindles are preferably formed from sheet steel or the like by means of dies. The forming dies leaves a slot or keyway such as shown at 34^a which extends from end to end of each spindle. In actual operation the knobs are provided with lugs not here illustrated which enter the keyways and thus secure the knobs against rotation, the set screws indicated at 41 being merely employed for the purpose of securing the knobs against endwise removal.

The housing cover as previously stated is provided with a central opening 14 which is notched at the points indicated at 16 and 17. The interior diameter of the opening 14 is identical to the exterior diameter of the spindle section 35 and it would thus be impossible to insert the spindle as the retaining lugs 39 and the upturned ends 38 project beyond the exterior diameter of the spindle. It is for these reasons that the notches 16 and 17 are formed. The notches 16 receive the upturned or reinforced ends 38 of the retracting lugs 39. Thus, when it is desired to insert the spindle 35, it is only necessary to pass it through the bearing member 12 and then to align the lugs 38 and 39 with the notches 16 and 17. The spindle member may then be passed through the opening 14 and thus enters the retractor guide shown in Fig. 7. The retracting lug 37 will in that instance lie above the plate 29 and will engage the same the moment the retractor is manually released as the spring 33 will force the retractor upwardly into engagement with the retracting lug 37. The retracting lug thus secures and retains the retractor in the retractor guide, and furthermore limits the outward movement of the retractor. After the spindle 35 has been inserted, it is next necessary to insert the spindle 34. This spindle is identical to the spindle 35 or, in other words, identical to the spindle shown in Fig. 5. The spindle 35 is passed through the opening 19 and although the interior diameter of the opening 19 is identical to the exterior diameter of the spindle, it is possible to insert the spindle without providing notches such as shown at 16 and 17 as the spindle may be tipped to pass the lugs 38 and 39 through the opening. Tipping of the opposite spindle cannot take place as it must first pass through the bearing 12 before it can be inserted or passed through the opening 14 of the housing cover. After the spindle 34 has been inserted, the clamping plate C is applied and similarly an escutcheon plate such as shown at 40. (See Fig. 10.) The knobs are then finally applied and these

may be secured in any suitable manner or as here shown by set screws 41.

The assembly of the several parts forming the latch actuating unit is accomplished as follows:

The retractor guide shown in Fig. 7 is attached to the cover member shown in Fig. 6 by passing the lugs 25 through the slots 15 and forcing the retractor guide downwardly so that an interlock is formed between the lugs 25 and the cover member. Spring 33 is then placed on the spring-supporting lug 26 and the retractor shown in Fig. 8 is pushed downwardly on top of the spring between the end walls 21 of the retractor guide, the upper end of the spring being guided by depression in the plate 29 of the retractor. One of the spindle members is then inserted through the bearing 12 of the cover section and the spindle is turned to a position where the lugs 38 and 39 will register with the slots 16 and 17 respectively. The spindle may thus be pushed through the opening 14 and it is then rotated a one-half revolution, the retractor being in the meantime depressed to permit the spindle to be pushed through into position. After the spindle has been inserted, the retractor may be released as its upward movement will be limited by engagement of the plate 29 of the retractor with the projection 37 of the spindle. The second spindle is then applied through the opening 19 of the retractor guide by tilting it sufficiently to permit the lugs 38 and 39 to pass through the opening. Next, the housing A is applied by slipping the bearing 8 over the last-named spindle and continuing to push it inwardly over the spindle until it covers the retractor guide and the retractor, and until it seats on the annular seating shoulder of the cover member. The knobs are then applied and secured by the set-screws and the assembly of the latch-actuating unit is completed.

By referring to Fig. 8 it will be noted that the retractor is provided with a plate 27. This plate forms a guide for the retractor within the retractor guide, and it also limits downward movement of the retractor within the retractor guide, as the lower end of the plate 27 engages the interior surface of the housing A when it has been moved downwardly within the retractor guide a certain distance.

The upper shoulders of the end plates 30 also engage the interior surface of the casing A and thereby limit upward movement within the retractor guide. Such upward movement is also limited by the lugs 37 on the respective spindles, but if the spindles are removed, the upper shoulders of the end walls 30 of the retractor serve the function of limiting the upward movement.

By referring to Figs. 7 and 9, it will be noted that the retractor guide is provided with a lug 22 and that the housing A (see Fig. 9) is provided with an opening 22^a. The

lug 22 passes through the opening 22^a when the housing is placed in position with relation to the cover member shown in Fig. 6 and the retractor guide.

The entrance of the lug 22 in the opening 22^a is of importance, as it maintains a predetermined position between the housing and the retractor guide. That is, the upper portion of the housing A is slotted as shown at 6 in Fig. 9 and this must be maintained in a central position above the retractor guide so that the fingers 31 of the retractor may extend through the same. This completes the description of the latch actuating unit and a brief description of the latching unit indicated at B is, therefore, thought proper.

This latching unit is best illustrated in Figs. 2 and 4. It consists of a housing B cylindrical in cross section which carries a keeper plate 43. The rear end of the housing terminates in a pair of lugs 44 which are adapted to pass under the retaining flanges 7 when the locking units are assembled as will hereinafter be described. Slidably mounted in the housing B is a latch such as shown at 45, and forming an extension thereof is a latch actuating plate 46. This plate terminates in a pair of lugs 47 and these lugs are adapted to be engaged by the fingers 31 of the retractor shown in Fig. 8 when the respective units of the lock are assembled. The latch 45 is normally projected by means of a spring 48. This spring is mounted within the housing B and is interposed between an end plate 49 and the latch proper, the end plate 49 being secured in the end of the housing by flanging over or beading the inner end of the housing. The end plate 49 is furthermore provided with a slot through which the latch actuating plate 46 extends, this slot forming a guide and a bearing for the latch actuating plate. The latching unit is completely assembled in the factory and when assembled forms a complete self-contained unit as shown in Fig. 2. The latch 45 and the plate 46 are first assembled and inserted in the housing B. The spring 48 is then inserted and finally the end plate 49 which is secured by flanging over or beading the end of the housing. Thus assembled the unit is complete and it is not attached to the housing A before the lock is to be installed in a door. This is accomplished as follows:

The latching unit B is first inserted through the opening formed in the door as shown in Fig. 3, the length of the housing B being such that the lugs 44 and 47 project a slight distance into the transverse opening 2. One of the knobs of the latch actuating unit A, together with the escutcheon plate 40 and the clamping plate C, is then removed from the unit A and this is inserted endwise through the opening 2 in the direction of arrow c. (See Fig. 3.) When thus inserted retaining flanges 7 pass over the lugs 44 and

the fingers 31 on the retracting unit at the same time will pass over the lugs 47 of the latch actuating plate. The housings of the respective locking units are thus interlocked and the mechanism contained in the respective housings are at the same time interlocked. It is now only necessary to secure the respective units against removal and this is accomplished by passing screws through the keeper plate 43 of the latching unit and by applying the clamping plate C on the latch actuating unit.

It should be remembered that the flange 5 of the lock housing A engages one face of the door when it is inserted and that the clamping plate C engages the opposite face of the door. This plate is provided with two drilled openings as indicated at 50. These openings align with openings 51 formed in the end plate 4 of the housing A, and these openings in turn align with the lugs 23 of the retractor guide. These lugs as previously stated are drilled and tapped, and it is therefore only necessary to insert a pair of screws through the aligned openings 50 and 51 and, similarly, to pass them through the threaded openings 24. When a threaded engagement is established the screws are tightened and the clamping plate C is thus drawn tightly against one face of the door, while the flange 5 of the housing A is drawn tightly against the opposite face of the door. These screws secure the latch actuating unit in the door and the screws which pass through the keeper plate 43 secure the latching unit in the door, the latching unit being also secured by the lugs 44 and the retaining flanges 7. The escutcheon plate 40 may now be applied and similarly the knob and the installation of the lock is thus completed.

The present application is more or less illustrated in several copending applications. The interlock between the housings, formed by the retaining flanges 7 and the lugs 44, being shown in my copending application entitled "Door locks" filed August 20, 1923, S. N. 658,245, and the interlock between the contained mechanisms formed by the fingers 31 and the lugs 47 being also illustrated and claimed in this application. The clamping plate C, together with the screws passing therethrough, which has a threaded engagement with the end plate of the housing 4 is illustrated and claimed in my copending application entitled "Door locks" filed August 2, 1923, Serial No. 655,218. The specific construction of the latch 45 and the latch actuating plate connected therewith are shown and claimed in my copending application entitled "Door latch" filed August 2, 1923, Serial No. 655,220. It should therefore be understood that the present application is merely drawn to cover the features not disclosed in the previous applications, these features

being the construction of the spindles; the housing A, the housing cover 9, the retractor guide 18, the retractor shown in Fig. 8, the mechanism actuated thereby, and the manner of assembling and connecting the respective parts.

By referring to Fig. 10, the function of the retaining lugs 39 will perhaps be best understood. One of the lugs engages the inner face of the end plate 18 of the retractor guide and thus secures the spindle 34 against endwise removal. The opposite lug formed on the spindle 35 engages the end plate 13 of the housing cover and thus secures this spindle against endwise removal. It might be stated that the retaining lug 39 on the spindle 35 always assumes a position opposite to the notch 17 when the lock is assembled and in operation, and it is only turned into alignment with the notch 17 when assembling the lock or when it is desired to remove the spindle for repair or otherwise. In fact it cannot be turned into alignment with the notch 17 except after removal of the retracting member. The retracting lugs formed on the respective spindles and shown at 37 engage the upper face of the plate 29 of the retracting member when the lock is assembled and either spindle may therefore be turned to retract the retracting member. The spring 33 functions to extend the retractor and also to return the spindles, together with the knobs carried thereby, to normal position. The spring 48 in the latching unit serves the same purpose and it might therefore be stated that one spring might be broken without materially affecting the operation of the lock as both springs function in unison and serve the same purpose.

The lock here illustrated is particularly designed to permit all parts to be cut, shaped and formed by die operations; this being important as it materially reduces the cost of manufacture. The parts are again formed to permit quick and ready removal during manufacture and as such further reduces the cost of manufacture. The lock is also constructed to permit quick installation in doors and as such has met with great favor as an ordinary brace and bit is all that is required when the two openings are drilled in the door. These openings should, obviously, be aligned and centered before they are drilled, but any slight variation between the centers is not of material importance as lateral movement of one unit with relation to the other is permitted due to the form of interlock provided between the contained mechanisms and the housings.

While certain features of the present invention are more or less specifically illustrated, I wish it understood that various changes in form and proportion may be re-

sorted to within the scope of the appended claims. Similarly, that the materials and finish of the several parts employed may be such as the experience and judgment of the manufacturer may dictate or various uses may demand.

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

10 1. In a lock of the character described, an end plate, a retractor guide detachably secured thereto and a housing attachable to the end plate and securing the retractor against removal.

15 2. In a lock of the character described, a housing cover, a retractor guide detachably secured thereto, and a housing adapted to be received by the cover member, said housing enclosing and securing the retractor guide against removal.

20 3. In a lock of the character described, a housing cover comprising an end plate having a central bearing opening formed therein, and a pair of parallel slots disposed one in each side of the bearing opening, an offset annular shoulder on the plate, an annular flange on the shoulder, a retractor guide, and hook shaped lugs on said guide insertible in the slots of the end plate and adapted
25 to interlock therewith.

30 4. In a lock of the character described, a retractor guide, said guide comprising an end plate, a pair of side plates disposed at right angles thereto and parallel with relation to each other, said end plate having a bearing opening formed therein for the reception of the lock spindle, and a pair of hook shaped lugs formed one on each side plate.

35 5. In a lock of the character described, a retractor guide, said guide comprising an end plate, a pair of side plates disposed at right angles thereto and parallel with relation to each other, said end plate having a bearing opening formed therein for the reception of a lock spindle, and a pair of hook shaped lugs formed one on each side plate, said side and end plates being substantially rectangular in shape.

40 6. In a lock of the character described, a retractor guide, said guide comprising an end plate, a pair of side plates disposed at right angles thereto and parallel with relation to each other, said end plate having a bearing opening formed therein for the reception of a lock spindle, a pair of hook shaped lugs formed one on each side plate, said side and end plates being substantially rectangular in shape, and a pair of securing lugs having threaded openings formed therein, said lugs being flush with the face of the end plate and forming a part thereof.

7. In a lock of the character described, a retractor guide, said guide comprising integral end and side plates, the end plate

being disposed at right angles to the side plates, a hook shaped lug on the inner end of each side plate, and a spring supporting lug forming a part of one of the side plates and disposed at the lower end thereof.

8. In a lock of the character described, a retractor guide, said guide comprising integral side and end plates, the end plate being disposed at right angles to the side plates, a hook shaped lug on each side plate, a spring supporting lug forming a part of one of the side plates and disposed at the lower end thereof, and a pair of securing lugs forming a part of the end plate and having threaded openings formed therein for the reception of
70 securing screws.

9. In a lock of the character described, a retracting member, said member comprising a bearing plate, guide plates formed integral therewith and bent at right angles thereto
75 in a downward direction, and a pair of upwardly extending retracting fingers forming a part of the bearing plate and bent upwardly therefrom.

10. In a lock of the character described, the combination with a housing cover and a retractor guide carried thereby, of means for detachably securing the retractor guide to the housing cover, a housing adapted to be received and supported by the housing cover, said housing enclosing and securing the retractor guide against removal, and a lug on the retractor guide adapted to extend through an opening formed in the housing cover to insure a predetermined position between the housing, the retractor guide and the housing cover.
85 100

11. In a lock of the character described, a housing cover comprising an end plate which is circular in shape, said end plate having a central bearing opening formed therein, an offset annular shoulder on the plate, an annular flange forming a part of said shoulder, an escutcheon plate adapted to be supported by and secured to the annular flange, and a bearing member on said escutcheon plate in axial alignment with the bearing opening in the end plate.
105 110

12. In a lock of the character described, a housing cover comprising an end plate which is circular in shape, said end plate having a central bearing opening formed therein, an offset annular shoulder on the plate, an annular flange forming a part of said shoulder, an escutcheon plate adapted to be supported by and secured to the annular flange, a bearing member on said escutcheon plate in axial alignment with the bearing opening in the end plate, a housing member cylindrical in cross-section adapted to be received by the annular shoulder of the housing cover and supported thereby, an end plate in the opposite end of the housing, and a bearing member in said end plate in axial alignment with the bearing opening in the end
115 120 125 130

plate and the bearing member of the escutcheon plate.

13. In a lock of the character described, a housing having a bearing member formed in one end thereof, a housing cover adapted to be received by the opposite end of the housing and forming a closure therefor, a bearing member on said housing cover, a retractor guide mounted within the housing, a retracting member slidably mounted in said guide, a spindle carried by the housing cover and journaled therein, a spindle carried by the housing bearing and journaled therein, and a retracting lug on the inner end of each spindle engageable with the retractor.

14. In a lock of the character described, a housing having a bearing member formed in one end thereof, a housing cover adapted to be received by the opposite end of the housing and forming a closure therefor, a bearing member on said housing cover, a retractor guide mounted within the housing, a retracting member slidably mounted in said guide, a spindle carried by the housing cover and journaled therein, a spindle carried by the housing bearing and journaled therein, a retracting lug on the inner end of each spindle engageable with the retractor, and means on each spindle for securing the same against endwise removal with relation to their respective bearing members.

15. In a lock of the character described, a tubular spindle, one end being extended to form a retracting lug and a raised lug on the spindle to secure the same against endwise removal when in place in the lock.

16. In a lock of the character described, a spindle comprising a tubular member, one end of the spindle being extended to form a retracting lug and the ends of the lug being folded to reinforce the same, and a raised portion on the spindle adjacent the retracting lug and centrally disposed with relation to the same.

17. In a lock of the character described, a housing member, having a slot formed in one side thereof, said housing member being substantially closed at one end and open at the other end, a housing cover adapted to form a closure for the open end of the housing, a retractor guide supported by the housing cover and disposed in alignment with the slot in the housing, a retracting member slidably mounted in the guide and also disposed in alignment with the slot in the housing, a spring interposed between the guide and the retractor to normally project the retractor into engagement with the housing, a pair of fingers on the retractor, and a latch engaged thereby and adapted to be projected and retracted by the retractor.

18. In a lock of the character described, a housing member having a slot formed in one side thereof, said housing member being substantially closed at one end and open at the

other end, a housing cover adapted to form a closure for the open end of the housing, a retractor guide supported by the housing cover and disposed in alignment with the slot in the housing, a retracting member slidably mounted in the guide and also disposed in alignment with the slot in the housing, a spring interposed between the guide and the retractor to normally project the retractor into engagement with the housing, a pair of fingers on the retractor, a latch engaged thereby and adapted to be projected and retracted by the retractor, a pair of spindles, one extending through each end of the housing and independently operable, and a lug on the inner end of each spindle and engageable with the retractor to impart movement thereto.

19. In a lock of the character described, a housing member having a slot formed in one side thereof, said housing member being substantially closed at one end and open at the other end, a housing cover adapted to form a closure for the open end of the housing, a retractor guide supported by the housing cover and disposed in alignment with the slot in the housing, a retracting member slidably mounted in the guide and also disposed in alignment with the slot in the housing, a spring interposed between the guide and the retractor to normally project the retractor into engagement with the housing, a pair of fingers on the retractor, a latch engaged thereby and adapted to be projected and retracted by the retractor, a pair of spindles, one extending through each end of the housing and independently operable, a lug on the inner end of each spindle and engageable with the retractor to impart movement thereto, and means on the inner end of each spindle for securing the same against endwise removal.

20. In a lock of the character described, a latching unit, said unit comprising a cylindrical shaped, elongated housing, a pair of lugs formed on the inner end of the housing, a keeper plate on the outer end of the housing, a closing plate on the inner end of the housing, a latch slidably mounted in the housing, and a spring interposed between the closing plate and the latch to normally project the latch.

21. In a lock of the character described, a latching unit, said unit comprising a cylindrical shaped, elongated housing, a pair of lugs formed on the inner end of the housing, a keeper plate on the outer end of the housing, a closing plate on the inner end of the housing, a latch slidably mounted in the housing, a spring interposed between the closing plate and the latch to normally project the latch, a latch actuating plate secured to the latch and projecting through the closing plate, and a pair of lugs formed on the inner end of the latch actuating plate.

22. In a lock of the character described,

a housing having a bearing member formed in one end thereof, a housing cover adapted to be received by the opposite end of the housing and forming a closure therefor, a bearing member on said housing cover, a retractor guide mounted within the housing, a retracting member slidably mounted in said guide, a spindle extending through one of the bearing members, and a retractor lug on the spindle engageable with the retractor.

23. In a lock of the character described, a housing cover, a retractor guide detachably secured thereto, a housing adapted to be received by the cover member, said housing enclosing and securing the retractor guide against removal, and a retracting member guided and slidably mounted interiorly of the retractor guide.

24. In a lock of the character described, a housing cover, a retractor guide detachably secured thereto, a housing adapted to be received by the cover member, said housing enclosing and securing the retractor guide against removal, a retracting member guided and slidably mounted interiorly of the retractor guide, and means for limiting movement of the retracting member within the retractor guide.

25. In a lock of the character described, a housing cover comprising an end plate having a central bearing opening formed therein and a pair of parallel slots disposed one on each side of the bearing opening, a retractor guide and hook-shaped lugs on said guide insertible in the slots of the end plate and adapted to interlock therewith.

26. In a lock of the character described, a retractor guide, said guide comprising integral end and side plates, said side plates being disposed at substantially right angles to the end plate, a hook-shaped lug on each side plate, a slotted housing cover adapted to receive said lugs to secure and support the retractor guide, a housing member also adapted to be supported by the housing cover, said housing having an opening formed therein, and a lug on the retractor guide adapted to enter said opening to maintain a fixed position between the housing, the housing cover and the retractor guide.

27. In a lock of the character described, a housing cover comprising an end plate which is circular in shape, said end plate having a central bearing opening formed therein, an offset annular shoulder on the plate, an annular flange forming a part of said shoulder, and an escutcheon plate adapted to be supported by and secured to the annular flange.

28. In a lock of the character described, a housing cover comprising an end plate which is circular in shape, said end plate having a central bearing opening formed therein, an offset annular shoulder on the plate, an annular flange forming a part of said shoulder,

an escutcheon plate adapted to be supported by and secured to the annular flange, a housing member cylindrical in cross-section adapted to be received by the annular shoulder of the housing cover and supported thereby, and a bearing member in said housing in axial alignment with the bearing opening in the end plate.

29. In a lock of the character described, an assembled housing and cover each having a bearing, a retractor guide mounted within the housing, a retracting member slidably mounted in said guide, a spindle journaled in the bearing of the housing, a second spindle journaled in the cover bearing, a retracting lug on the inner end of each spindle and engageable with the retractor, said retracting lugs limiting the movement of the retractor in one direction, and means on the retractor engageable with the housing and limiting movement of the retractor in the opposite direction.

30. In a lock of the character described, an assembled housing and cover each having a bearing, a retractor guide mounted within the housing, a retracting member slidably mounted in said guide, a spindle journaled in the bearing of the housing, a second spindle journaled in the cover bearing, a retracting lug on the inner end of each spindle and engageable with the retractor, said retracting lugs limiting the movement of the retractor in one direction, means on the retractor engageable with the housing and limiting movement of the retractor in the opposite direction, and means insuring a predetermined position between the retractor, the retractor guide and the housing.

31. In a lock of the character described, an assembled housing and cover each having a bearing, a retractor guide mounted within the housing, a retracting member slidably mounted in said guide, a spindle journaled in the bearing of the housing, a second spindle journaled in the cover bearing, a retracting lug on the inner end of each spindle and engageable with the retractor, said retracting lugs limiting the movement of the retractor in one direction, means on the retractor limiting movement in the opposite direction, and a lug on the retractor guide extending through an opening in the housing and insuring a predetermined position between the housing, the retractor guide and the retractor.

32. In a lock of the character described, an assembled housing and cover each having a bearing member, a retractor guide mounted within the housing, a retractor slidably mounted therein, a spindle journaled in the bearing member of the housing, a second spindle journaled in the cover bearing member, a retracting lug on the inner end of each spindle engageable with the retractor, and means on each spindle for securing the same

against endwise removal with relation to their respective bearing members.

33. In a lock of the character described, an assembled housing and cover each having a bearing member, a retractor guide mounted within the housing, a retractor slidably mounted therein, a spindle journaled in the bearing member of the housing, a second spindle journaled in the cover bearing member, a retracting lug on the inner end of each spindle engageable with the retractor, and a lug on each spindle for securing the same against endwise removal with relation to their respective bearing members.

34. In a lock of the character described, a tubular spindle, one end being extended to form a retracting lug and said spindle being split from end to end to form a keyway.

35. In a lock of the character described, a tubular spindle, said spindle being split from end to end to form a keyway, and an extension on one end of the spindle and opposite the keyway to form a retracting lug.

36. In a lock of the character described, a tubular spindle, one end being longitudinally extended to form a continuation of the tubular spindle, said longitudinal extension forming a roll-back lug.

37. In a lock of the character described, a tubular spindle, one end being extended to form a retracting lug, and a radial projection on the spindle substantially at the end thereof.

38. In a lock of the character described, a tubular spindle, a portion of one end of the spindle being extended to form a retracting lug, and a radial projection on the spindle on the end which carries the retracting lug, said radial projection being positioned substantially centrally of the retracting lug.

39. In a lock of the character described, a substantially yoke-shaped retracting member, said member comprising a bearing plate, a pair of end plates carried by the bearing plate and bent upwardly at right angles thereto, and said end plates terminating in a pair of interspaced retracting fingers.

40. In a lock of the character described, a substantially yoke-shaped retracting member, said member comprising a bearing plate, a pair of end plates carried by the bearing plate and bent upwardly at right angles thereto, said end plates terminating in a pair of interspaced retracting fingers, and guiding means carried by the retracting member.

41. In a lock of the character described, a housing cover, a retractor guide secured thereto, a retractor reciprocally mounted in the guide, a housing adapted to be supported by the cover and enclosing the retractor and the retractor guide, said housing having a slot formed therein in alignment with the retractor, and means for maintaining a fixed position between the housing and the retractor

to insure alignment between the retractor and the slotted portion of the housing.

42. In a lock of the character described, a cover member, a retractor guide carried thereby, said retractor guide having a bearing opening formed in one end, a retractor reciprocally mounted in the retractor guide, a spindle adapted to be received in the bearing opening of the retractor guide and rotatable therein, and a retractor lug on the spindle engageable with the retractor and adapted to impart a reciprocal movement thereto.

43. In a lock of the character described, a cover member, a retractor guide carried thereby, said retractor guide having a bearing opening formed in one end, a retractor reciprocally mounted in the retractor guide, a spindle adapted to be received in the bearing opening of the retractor guide and rotatable therein, a retractor lug on the spindle engageable with the retractor and adapted to impart a reciprocal movement thereto, and a spring interposed between the retractor and the retractor guide and maintaining the retractor in engagement with the lug on the spindle.

44. In a lock of the character described, a housing cover, a retractor guide carried thereby, said housing cover having a bearing opening formed therein, a retractor reciprocally mounted in the retractor guide, a spindle projecting through the housing cover and the bearing opening formed therein and journaled in said opening, a retractor lug on the spindle engageable with the retractor and adapted to impart a reciprocal movement thereto, and a spring interposed between the retractor guide and the retractor and maintaining the retractor in engagement with the lug on the spindle.

45. In a lock of the character described, a housing cover, a retractor guide carried thereby, said housing cover having a bearing opening formed therein, a retractor reciprocally mounted in the retractor guide, a spindle projecting through the housing cover and the bearing opening formed therein and journaled in said opening, a retractor lug on the spindle engageable with the retractor and adapted to impart a reciprocal movement thereto, a spring interposed between the retractor guide and the retractor and maintaining the retractor in engagement with the lug on the spindle, and means securing the spindle against endwise movement.

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