Dec. 8, 1942. H. G. VOIGHT 2,304,612

LOCK

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Fig. 1.

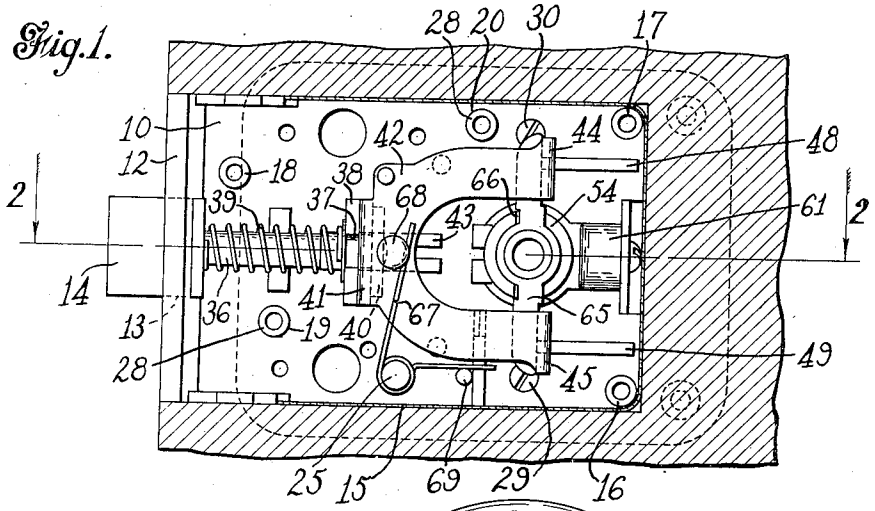


Fig. 2.

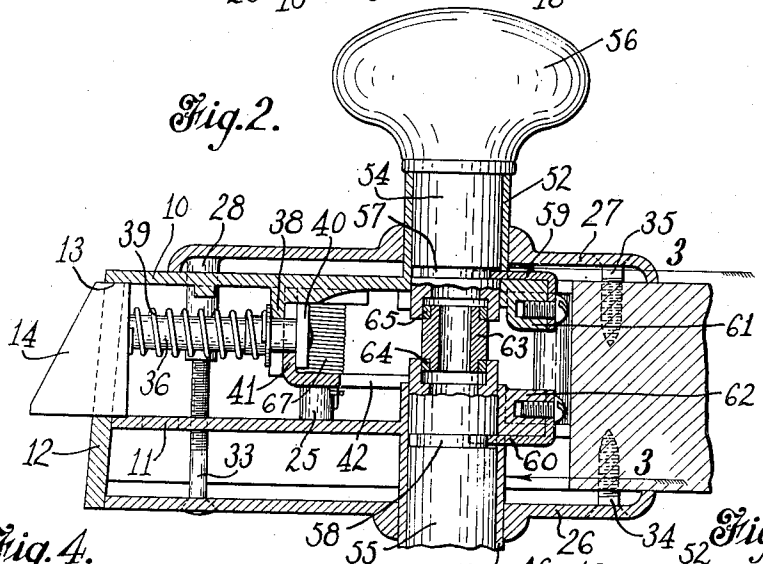


Fig. 4.

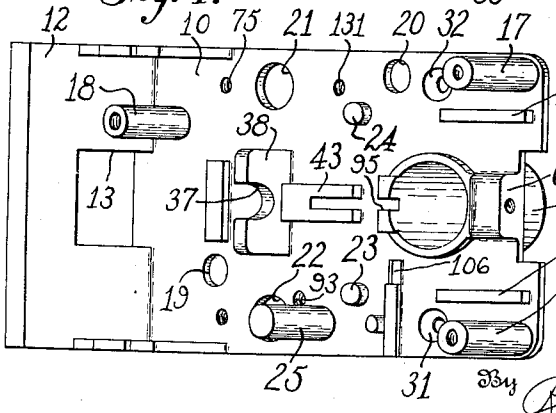
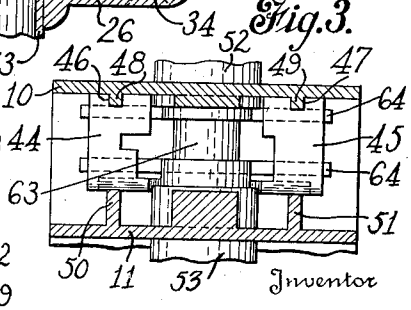


Fig. 3.



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Fig. 5.

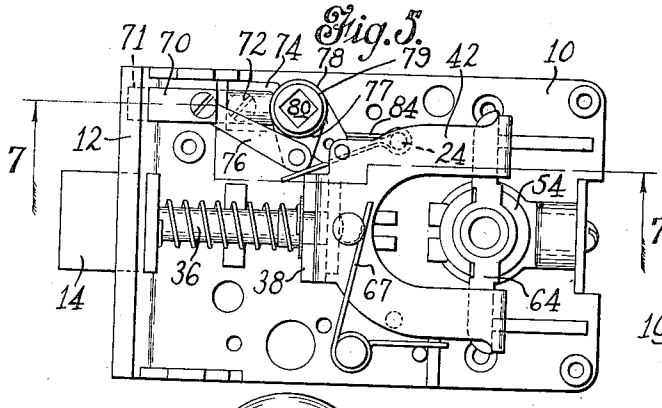


Fig. 6.

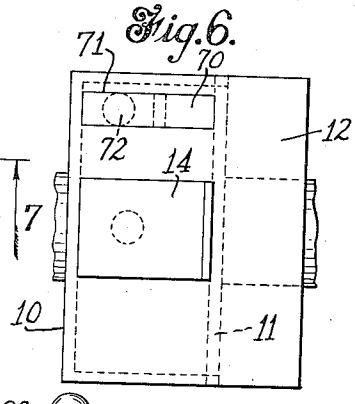


Fig. 7.

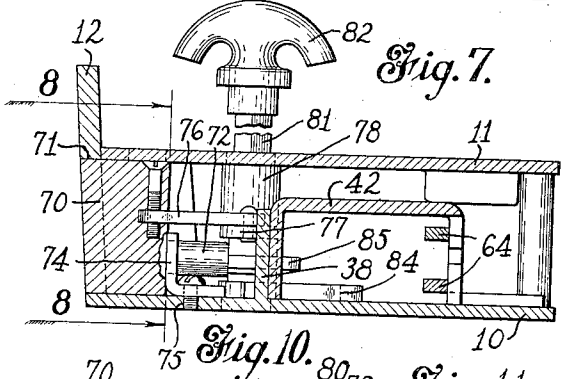


Fig. 8.

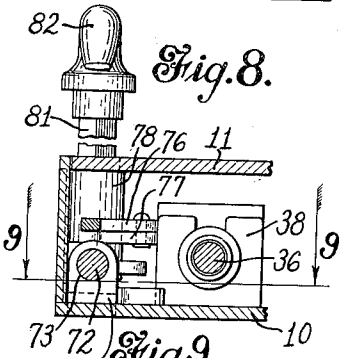


Fig. 10.

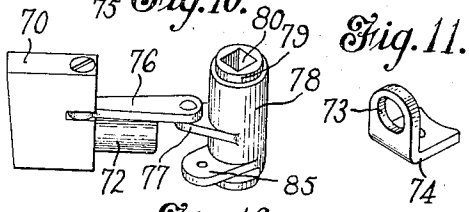


Fig. 11.

Fig. 9.

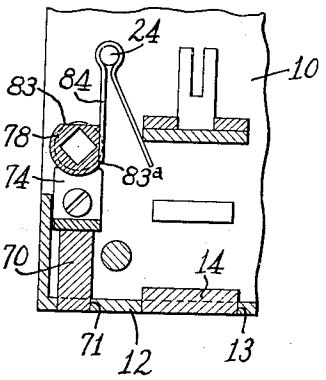


Fig. 12.

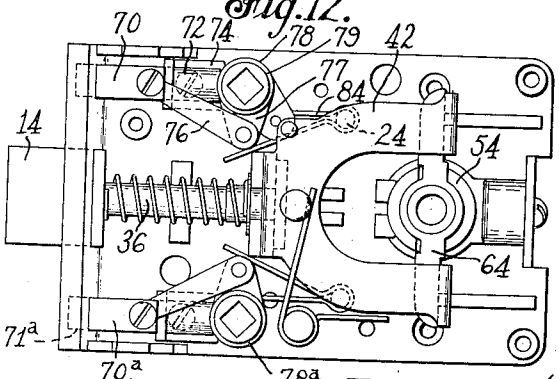
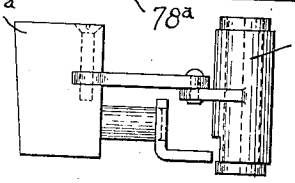


Fig. 13.



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Fig.14.

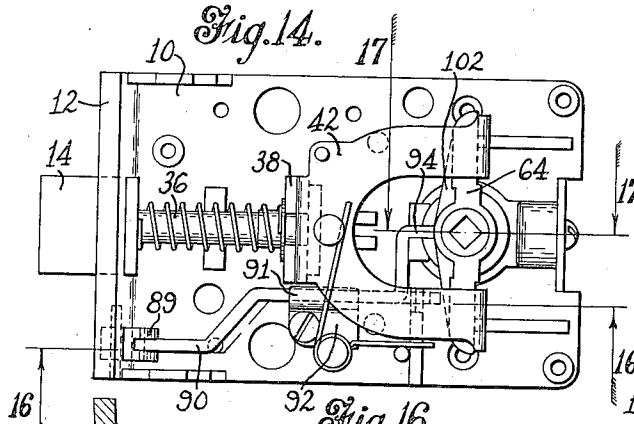


Fig.15.

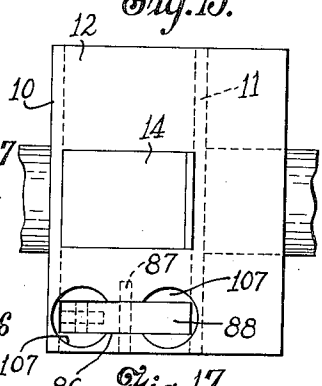


Fig.16.

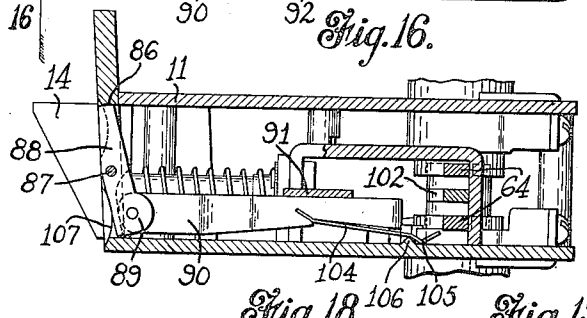


Fig.17.

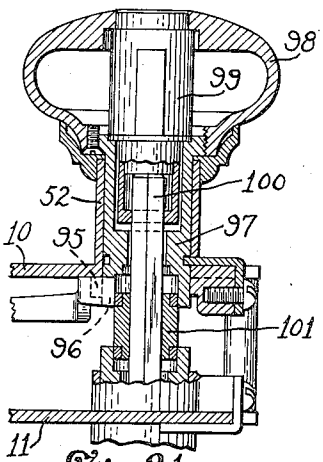


Fig.18.

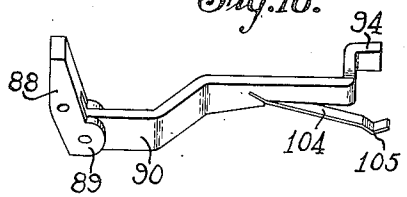


Fig.19.

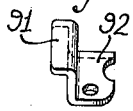


Fig.20.

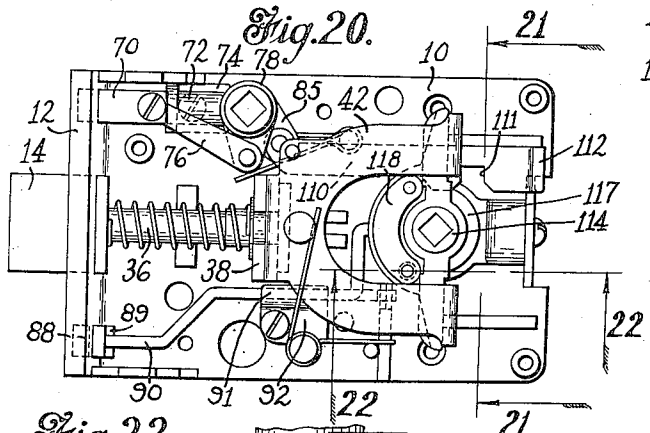


Fig.21.

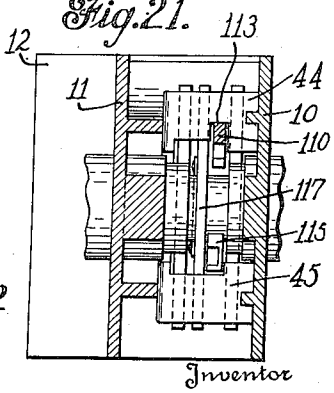
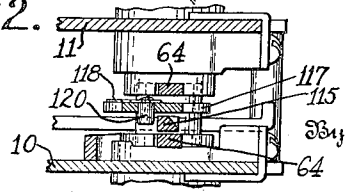


Fig.22.



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Fig. 23.

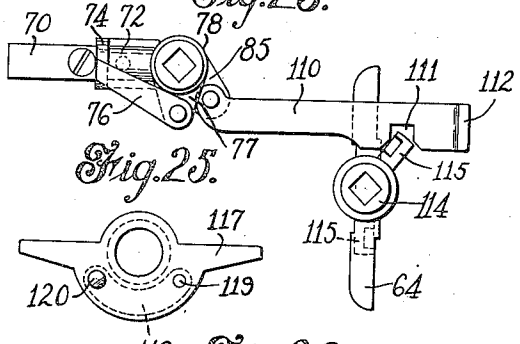


Fig. 24.

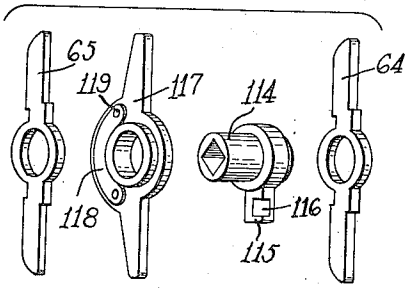


Fig. 25.

Fig. 26.

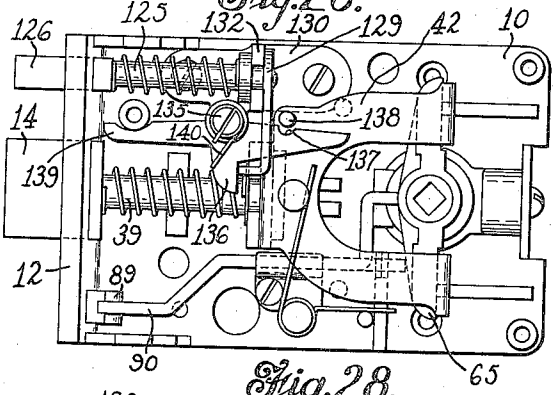


Fig. 27.

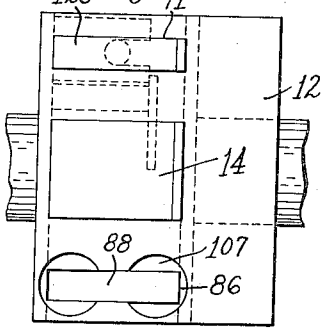


Fig. 28.

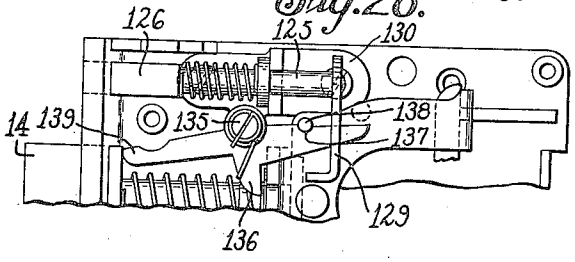
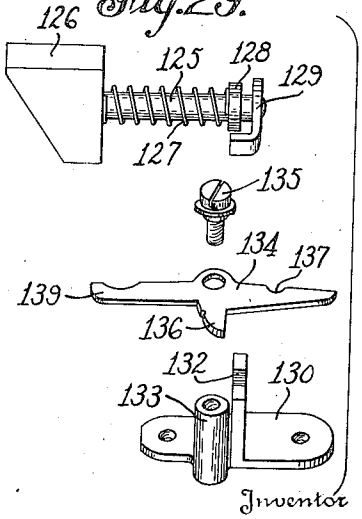


Fig. 29.



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Patented Dec. 8, 1942

2,304,612

UNITED STATES PATENT OFFICE

2,304,612

LOCK

Henry G. Voight, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a corporation of Connecticut

Application July 7, 1938, Serial No. 217,854

4 Claims. (Cl. 70—448)

This invention relates to door locks, and more particularly to a lock construction or system which will be universal in character, in that it comprises a case and a number of lock parts which may be assembled in the case in various combinations to construct locks having different characteristics.

There are a number of different kinds of locks employed upon doors, the character of the locks or latches depending upon the particular situation or location of the door, that is, depending upon the use to which the door upon which the lock is mounted is to be put. For example, there is the simple door latch which contains only a latch bolt and no other mechanism, which is used upon doors merely to keep them closed, but which are never intended to be locked. There is also what may be termed a bathroom door lock, which comprises a latch bolt, and in addition may have a single dead bolt adapted to be thrown by a thumb turn upon one side of the door. A communicating door lock is usually provided with a latch bolt and with two dead bolts, one of which may be thrown from one side of the door and the other from the other side, a thumb turn usually being employed in connection with both of such bolts. There is also a lock which may be termed a vestibule door lock, which comprises a latch bolt, and a dogging mechanism for this bolt, this mechanism usually being operated by a dogging lever pivoted in the face plate of the lock. Usually such dogging mechanism serves to dog the outside knob, and a key-operated mechanism is provided for retracting the latch from the outside when the knob is dogged. There is also what is known as a front door lock. This lock not only contains the latch bolt and latch dogging mechanism, or knob dogging mechanism of the vestibule door, but also contains a dead bolt usually operated by a thumb turn at the inside of the door, key-operated means for retracting the latch from the outside when the knob is dogged, and also retracting the dead bolt when it has been thrown. A sixth kind of lock is what may be termed an office door lock, which lock comprises the latch and knob dogging mechanism of the vestibule lock, and also a latch dogging lever and a dog-controlling plunger which projects through the face plate of the lock. This dog-controlling plunger operates to prevent the forcing of the latch by a tool inserted between the edge of the door and the door jamb. The office door lock is also provided with key-operated means to retract the latch when the outside knob is dogged.

In the past these locks and the parts therefor have all been individually made, that is, the cases in which the locks were housed were cases especially made for the particular type of lock which was to be employed, and the internal mechanism was individual to the lock in which it was to be used in each case. As a result, dealers, in order to have a full stock, must keep on their shelves a supply of each kind of lock, and the manufacturer likewise had to make up and stock a large quantity of each type of locks, notwithstanding the fact that certain parts of each type of lock were common to other types. This resulted not only in the necessity of keeping a large inventory, but also in the manufacture of a large number of parts, some of which differed slightly from others, or perhaps differed only in size, so that the disadvantage was not only that of necessity of increased inventory, but also a failure to secure the advantages of quantity production.

One object of the present invention is to provide a lock system wherein a lock case is provided which may be employed with a number of locks of different types, and wherein a number of parts are provided which may be assembled in this case in different combinations to provide the particular type of lock desired.

A further object of the invention is the provision of a system of locks which will be more or less universal in character, in that the same case and the same parts to a large extent may be used for locks of different types, whereby some of the types of locks having a more complex character, for example, may be made or converted from a simpler type of lock, merely by the insertion in the case of additional parts.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the drawings:

Fig. 1 is a front elevational view of a latch with the cover of the case removed;

Fig. 2 is a sectional view on line 2—2 of Fig. 1;

Fig. 3 is a sectional view on line 3—3 of Fig. 2;

Fig. 4 is a perspective view of the side plate and face plate of the lock case;

Fig. 5 is an elevational view of the interior of a bathroom door lock;

Fig. 6 is a face view of the lock shown in Fig. 5;

Fig. 7 is a sectional view on line 7—7 of Fig. 5;

Fig. 8 is a sectional view on line 8—8 of Fig. 7;

Fig. 9 is a sectional view on line 9—9 of Fig. 8;

Fig. 10 is a perspective view of the dead bolt and thumb-turn hub connected thereto;

Fig. 11 is a perspective view of the supporting

angle member used with the dead bolt of Fig. 10;

Fig. 12 is a view similar to Fig. 5 showing the interior mechanism of a communicating door lock;

Fig. 13 is a view similar to Fig. 10 showing the additional dead bolt used in the lock shown in Fig. 12;

Fig. 14 is a view similar to Fig. 12 showing the interior mechanism of a vestibule lock;

Fig. 15 is a front face view of the lock shown in Fig. 14;

Fig. 16 is a sectional view on line 16—16 of Fig. 14;

Fig. 17 is a sectional view on line 17—17 of Fig. 14;

Fig. 18 is a perspective view of the latch of the knob dogging member shown in Figs. 14 and 16;

Fig. 19 is a perspective view of the clip which guides the knob dogging member in its movement;

Fig. 20 is a view similar to Fig. 14 showing the interior of a front door lock;

Fig. 21 is a sectional view on line 21—21 of Fig. 20;

Fig. 22 is a sectional view on line 22—22 of Fig. 20;

Fig. 23 is a front view of the dead bolt of the lock shown in Fig. 20 and the operating mechanism therefor;

Fig. 24 is an exploded view showing the rollback assembly of the lock shown in Fig. 20;

Fig. 25 is a rear view of one of the rollback members shown in Fig. 24;

Fig. 26 is a view similar to Fig. 20 showing the interior mechanism of the office door lock;

Fig. 27 is a face view of the same;

Fig. 28 is a detail view of part of the mechanism of the lock shown in Fig. 26 but showing this mechanism in another position; and

Fig. 29 is an exploded view of the dog-controlling plunger and its associated parts of the lock shown in Fig. 26.

In Figs. 1 to 4 of the drawings, I have shown the simplest form of door closure, in which the lock case is provided with a latch only. As will be seen from these figures of the drawing, the case comprises side plates 10 and 11. Formed integrally with the plate 10 is the face plate 12 provided with an opening 13 at approximately the center thereof, through which the latch bolt 14 may protract. This plate 10 may be considered as the base or supporting plate of the lock, while the plate 11 operates as a cover or retaining plate. In addition to these two plates, the lock case is provided with a cover 15 which may be formed of thin sheet metal, and which may be of U-shaped design, as shown in Fig. 1, to cover the top and bottom and rear end of the case extending from one of the side plates to the other. This cover lies between the plates and is substantially flush with the edges thereof, and, as will be apparent, the corner posts 16 and 17 are set in from the edges of the lock for this purpose.

The construction of the plate 10 is shown more particularly in Fig. 4, and as this plate is to be used as a part of the case for a number of different locks, it is provided with some elements which are not employed in the simpler type, as in the latch at present being described. As shown, the plate is provided with three upstanding posts 16, 17 and 18, these posts having screw-threaded bores designed to receive screws (not shown) extending through the plate or cover 11 to secure the latter in position. The plate is also provided with openings 19, 20, 21 and 22, the purpose of which will be later described, and also with short posts 23 and 24 designed to serve as spring-supporting hubs, and a longer spring-supporting hub post 25.

It will be understood that the plates 10 and 11 will be normally concealed within the door, and that outside plates 26 and 27, more or less ornamental in character, are provided to be applied at each face of the door. As the lock herein shown is of that character usually called a unit lock, it is entirely assembled, including the plates 26 and 27, before being applied to the door. The plate 27 is provided with hollow posts 28, only one of which is shown, but two of these posts will usually be provided, which will enter through the openings 19 and 20 in the plate 10, the plate 27 being secured to the plate 10 by means of screws 29 and 30, which pass through openings 31 and 32 of the plate 10. The plate 26 may then be secured to the case by means of screws 33, which are threaded into the posts 28, the length of the posts and screws being such that adjustment is possible in the spacing of the plates 26 and 27 in accordance with the thickness of the door upon which the lock is secured. The plates 26 and 27 may be secured to the door by means of screws 34 and 35.

The latch bolt 14 is mounted upon a stem 36 riding in a groove 37 in an upstanding lug 38 attached to the plate 10. A compression spring 39, acting between this lug and the rear face of the bolt, tends to urge the bolt to projected position. At its rear end the stem is provided with a stop element 40, and between this stop element and the lug 38 the stem is spanned by the forked end 41 of a yoke 42, the end 41 being turned at approximately right angles to the yoke. The portion 41 of the yoke also spans a guide member 43 secured to the plate 10 so that the yoke will be properly guided in its reciprocating movements.

At its rear end the yoke 42 is provided with angularly turned end portions 44 and 45, which are provided with notches 46 and 47 to receive and be guided by elongated guide lugs 48 and 49 formed on the plate 10. The free ends of the members 44 and 45 fit against the plate 10, and spacing lugs 50 and 51 are formed on the plate 11 to bear against the outer face of the yoke so that the yoke will be held against play, but permitting a sliding reciprocating movement in the lock.

The plates 10 and 11 are respectively provided with knob-shank-receiving sleeves 52 and 53, in which are telescopically received the shanks 54 and 55 of the outer knob 56 and the inner knob (not shown). The knob shanks are provided with annular grooves 57 and 58, and the ends of L-shaped retaining members 59 and 60 extend into these grooves through openings in the sleeves 52 and 53 to secure the knob shanks in place, these retaining members being detachably secured by screws to bosses 61 and 62 formed on the plates 10 and 11, respectively. A spacing member 63 extends between the knobs, and on this spacing member rollbacks 64 and 65 are rotatably mounted one adjacent each end thereof. The projecting arms of these rollbacks are engaged within recesses 66 formed in the ends of the knob shanks, so that the turning of the knob shanks by the knobs will rotate the rollbacks in the usual manner to retract the yoke 42 and the

latch bolt 14. It will be understood that the bolt is urged outwardly by the spring 39, and the movement of the bolt outwardly also carries with it the yoke 42 by reason of the engagement of the stop member 40 against the rear side of the turned end 41 of the yoke member. The bolt 14, however, is permitted to move inwardly when the door is closed, for example, independently of the yoke 42, the latter being held in place at this time by a spring 67 mounted upon the post 25, having one end bearing against a post 68 on the yoke, and the other end bearing against a post 69 formed on the plate 10.

In Figs. 5 to 11 of the drawings is shown a lock of the type usually known as a bathroom door lock. This lock contains the parts already described in connection with the latch bolt lock shown in Figs. 1 to 4, and in addition contains a dead bolt which may be thrown from one side of the door to lock the same. The head of this dead bolt is shown at 70, the bolt being adapted to project through an opening 71 in the face plate 12 formed at a position spaced from the opening for the latch bolt. This dead bolt is provided with a guide stem 72 slidably received in an opening 73 in an L-shaped guide lug 74 (Fig. 11), which is secured to the plate 10 by means of a screw passing through the base of the lug and threaded into an opening 75 in this plate.

To the head of the bolt is pivoted one end of a link 76, the other end of the link being pivoted to an arm 77 secured to a thumb-turn hub 78, the latter being provided with reduced end portions 79 received in openings 21 in the plates 10 and 11, whereby the thumb-turn hub is rotatably mounted between these plates. The hub is provided with a non-circular opening 80, within which is received a similarly shaped spindle 81 of the thumb turn 82 by which the bolt 70 may be operated at one side of the door.

The thumb-turn hub is also provided with flat surfaces 83 and 83a designed to be engaged by one end of a spring 84 in order to releasably hold the thumb turn and the bolt 70 in position at the ends of its movement. The spring 84 is mounted upon the post 24 (Fig. 4) on the plate 10, the other end of this spring bearing against the lug 38. The operation of the dead bolt 70 and its associated parts is believed to be obvious. It will be observed that this bolt and its associated parts may be placed in the case of the latch bolt mechanism illustrated in Figs. 1 to 4, without disturbing the action of the latch bolt, as the dead bolt and its operating mechanism are added at one corner of the case out of the range of action of the latch bolt and its actuating mechanism. Moreover, the only part necessary to secure this additional mechanism in place is the L-shaped guide member 74 shown in Fig. 11, which may be easily and detachably secured in place, so that the latch illustrated in Figs. 1 to 4 may be readily and easily converted into the bathroom door lock shown in Figs. 5 to 11 by the addition of these few extra parts in the same case, and, of course, the provision of the additional opening 71 in the face plate 12.

In Figs. 12 and 13 of the drawings is illustrated what may be termed a communicating door lock. This lock is similar to the bathroom door lock described immediately above, except that in addition it is provided with a second dead bolt and actuating mechanism designed to be operated at that side of the door opposite from that of the first. In this case the face plate 12 will be provided with an additional opening 71a, through which may operate the dead bolt 70a, which is provided with actuating and guiding mechanism duplicating that shown in Figs. 10 and 11 in connection with the dead bolt 70. As these parts have already been described in connection with Figs. 5 to 11, it is not believed that an additional description is necessary. It may, however, be observed that the thumb-turn hub 78 is provided with an arm 85, the purpose of which will appear hereinafter, which arm is not provided upon the thumb-turn hub 78a used in connection with the bolt 70a. It will also be observed that the dead bolt 70a and its associated parts are placed below the latch bolt 14 in a position symmetrical with that of the bolt 70 and its associated parts, and as the latch bolt 14 and its actuating mechanism is disposed centrally of the case, there will be room for both of the dead bolts and their actuating mechanisms without interference with the action of the latch bolt. Thus by the addition of one set of relatively few parts the latch may be converted into a bathroom door lock, and by the addition of a duplicate set of parts in a symmetrical position in the case, the bathroom door lock of Fig. 5 may be converted into the communicating door lock of Fig. 12.

In Figs. 14 to 19 of the drawings is illustrated what may be termed a vestibule lock, this lock being derived from the latch shown in Figs. 1 to 4 by the addition of a stop work or knob-dogging mechanism, and a key-operated lock provided in the outside knob.

In this instance the face plate 12 is provided with an opening 86 in which is pivotally mounted upon a pin 87 in the face plate a stop work or dog-actuating member 88. To one end of this member is pivoted at 89 a dogging link 90 adapted for sliding movement in the case, and guided below the turned end 91 of a guide lug 92 detachably secured to the case by a screw passing through the base of this lug and into a screw opening 93 (Fig. 4) in the plate 10. The part of the link engaging this lug is offset, as shown in Fig. 14, from the forward part of the link pivoted to the member 88, and the link is also provided with an additional offset end 94 designed to be moved through a slot 95 in the sleeve 52 of the outer knob and engage in a recess 96 formed in the shank 97 of the knob 98.

In this instance the knob shank 97 is hollow, and mounted therein is a cylinder lock mechanism 99 which may be of any approved form, the lock being adapted to rotate a non-circular spindle 100, extending into the case and having non-rotatably mounted thereon the hub 101 of a rollback 102, the arms of which rollback are adapted to engage the turned ends 44 and 45 of the yoke 42. It will be observed that in this instance an additional rollback has also been added to the mechanism, which is secured to the hub 101, this hub being operated by the lock spindle 100 independently of the knobs. Secured to the under portion of the link 90 is a spring 104 having a V-shaped portion 105 adapted to engage a similarly shaped member 106 (Fig. 4) provided on the plate 10. This spring acts to releasably retain the operating member 88 and link 90 in the position to which it is moved, in one of which positions it dogs the outside knob by means of engagement with the shank thereof of the part 94, and in the other position leaving this knob free to turn. It will, of course, be understood that when the outside

knob is dogged, the latch may be withdrawn by means of a key inserted in the cylinder lock 99 and turning the spindle 100. The inside knob, being free to operate independently of the outside knob, may always be employed to withdraw the latch.

The opening 86 in the face plate 12 is preferably of the same size as the opening 71a which receives the dead bolt 70a, as shown in Fig. 12, and in the same position. The ends of the opening 86 may, however, be countersunk, as shown at 107, so as to permit engagement of the lever 88 by the fingers.

In Figs. 20 to 25 of the drawings I have shown a lock of the type which is ordinarily used as a residence front door lock. This lock contains a dead bolt in addition to the latch bolt and stop work or knob dogging mechanism illustrated in connection with the vestibule lock shown in Figs. 14 to 19. The dead bolt in this instance is adapted to be operated by a thumb turn at the inside of the door, and to be key-operated from the outside of the door by a cylinder lock mechanism, shown, for example, in Fig. 17. That is, in this instance the key-operated lock, which may be mounted in the knob, is not only adapted to withdraw the latch, as was the case with the vestibule lock, but is also adapted to operate the dead bolt from the outside of the door. The vestibule lock may, therefore, be converted into the front door lock by the addition of the dead bolt and thumb-turn mechanism to the structure shown in Fig. 14, and also with the use of a different type of rollback mechanism to be operated by the key, as will now be described.

Mounted in the upper part of the case of the lock, as illustrated in Fig. 20, is a dead bolt mechanism of the type shown in Fig. 10, the hub 78 of this dead bolt mechanism being provided with the arm 85, as shown in that figure. It is understood, of course, that this structure is in addition to the lock parts shown in Fig. 14.

Pivoted to the arm 85 is a rearwardly extending link or actuating member 110, this member being provided with a notch 111 and a transversely turned rear end portion 112, the member 110 serving as the operating member of the dead bolt when it is operated by a key. As shown in Fig. 21, the member 110 extends through a recess 113 formed in the transversely extending portion 44 of the yoke 42, and the transversely turned end 112 of this member will be engaged by the member 44 when the yoke 42 is retracted.

The rollback mechanism used in this particular lock is shown in Fig. 24. Instead of employing the spacer 63 between the knob shanks, however, there is employed in this lock a hub 114 carrying an operating finger 115 having a beveled portion 116 adjacent its end. The knob-operated rollbacks 64 and 65 are the same as those shown in connection with Figs. 1 to 4. The hub member is provided with a non-circular opening to receive the lock spindle 100, and upon a portion of this hub member is rotatably mounted a rollback 117, this rollback carrying upon one face thereof a resilient or spring member 118 secured to the rollback at one end, as by the rivet 119. Upon the other end of the spring is carried a pin 120 which extends through an opening in the rollback member to project therefrom on the side thereof opposite the spring. It will be seen, therefore, that this spring lies flatly upon one side of the rollback member in its normal position, with the pin projecting from the other side. Pressure exerted upon the pin, however, may lift the untouched end of the spring member from the rollback so that the pin will no longer project therefrom. The finger 115 on the hub member 114 is designed, as will be explained, to engage this pin to operate the rollback 117, when turned in one direction, but on account of the beveled portion 116 will cam the pin inwardly and pass thereunder when the rollback is rotated in the opposite direction. The finger 115 is also designed to engage in the notch 111 and operate the member 110. Except as described, the front door lock is similar in construction to the vestibule lock.

The operation of this lock will now be briefly described. If it is merely desired to dog the outside knob to prevent retraction of the latch bolt, this operation is effected by manipulating the member 88 as in the case of the vestibule lock, which dogs the outside knob. The latch may now be retracted from the outside only by means of the key, which is operated to rotate the hub 114 in the proper direction to engage the flat or unbeveled side of the finger 115 with the pin 120. This actuates the rollback 117 to withdraw the latch.

If, however, it is desired to deadlock the door, this may be done by the thumb turn from the inside, which throws the bolt 70, or by the key from the outside. The key through the lock mechanism 99 operates the spindle 100, which in turn rotates the hub 114 carrying the finger 115. This hub is normally in the position shown in dotted lines in Fig. 23, and is rotated by the key in a counterclockwise direction, as shown in this figure, to engage in the recess 111 of the link 110, which through its connection with the arm 85 turns the hub 78, to which this arm is attached, and throws or protracts the bolt 70. It is, of course, necessary to turn the key through the remainder of a complete revolution in order to extract it from the lock, and when this is done the beveled or inclined surface 116 on the finger 115 strikes the pin 120, but does not operate the rollback, as this inclined surface merely cams the pin upwardly against the action of the spring 118, and permits the finger 115 to pass below the pin to its normal position, permitting withdrawal of the key. The door may be readily opened from the outside by use of the key, which is inserted in the lock and turned in a direction to turn the finger 115 clockwise from its dotted line position, shown in Fig. 23. At this time the straight side of the finger 115 strikes against the pin 120 and turns the rollback 117, the arm of which strikes against the arm 44 of the yoke 42 and withdraws the latch bolt. At the same time the arm 44 strikes against the turned end 112 of the link 110, and also withdraws the dead bolt. Thus in the opening of the door with the mechanism shown, the dead bolt and latch bolt are withdrawn simultaneously, and separate operations of the key are not required for this purpose, as has usually been the case in prior locks.

A still further form of lock which may be constructed in the case and with some of the parts already described is what may be termed an office door lock, shown in Fig. 26. As has already been described, the front door lock shown in Fig. 20 is formed from the vestibule lock shown in Fig. 14 by adding the dead bolt mechanism and a special key-operated hub and rollback. The office door lock, which will now be described, is

formed by adding to the vestibule lock shown in Fig. 14 a guard bolt or dog-controlling plunger and dogging mechanism for the latch bolt, as shown in Figs. 26 to 29. This guard bolt or dog-controlling plunger and the associated parts are shown in an exploded view in Fig. 29, and comprise a plunger 125 having a beveled head 126 adapted to be protracted through the opening 71 in the face plate 12. Mounted upon the plunger is a spring 127, a stop washer 128, and a tail piece 129.

To hold the parts in position in the case, a bracket 130, shown in Fig. 29, is secured to the case by means of screws passing through openings in the base of the bracket and threaded into the openings 75 and 131 (Fig. 4) in the plate 10. This bracket is provided with an upstanding bifurcated guide member 132 and a hollow post 133. The plunger 125 is slidably received in the slot in the member 132, with this member disposed between the washer 128, slidably mounted on the plunger, and the tail piece 129.

A dogging lever 134 is pivoted to the post 133 by means of the screw 135, this dogging lever having a downwardly projecting lug 136 which engages against the lower end of the tail piece 129 and is provided with a semicircular recess 137 in its upper surface, in which it is designed to engage a post 138 on the yoke 42. The front end portion 139 of the lever 134 is adapted in one position of the lever to drop behind the latch bolt 14, as shown in Fig. 28, and dog this bolt against retraction. The lever 134 is normally urged toward dogging position by a spring 140 mounted upon the screw 135 and having an end which engages the lug 136. In other respects the office door lock is the same as the vestibule lock shown in Fig. 14.

The operation of these additional parts for the office door lock is as follows: When the door is open, the latch bolt is urged to protracted position by its spring 39, and the plunger is also urged to protracted position, as shown in Fig. 26, by its spring 127 acting against the washer 128, which in turn acts against the bifurcated member 132. In this protracted position of the plunger 125, the tail piece 129 engages the lug 136 and tends to rotate the lever 134 in a clockwise direction, so that, as shown in Fig. 26, the end 139 of the lever 134 lies above the latch bolt 14, and leaves the latter free to move inwardly. When the door is closed the head 126 of the plunger 125 engages a solid portion of the strike plate (not shown) in the jamb, and the plunger 125 is retracted into the lock so that the tail piece 129 no longer engages the lug 136, and permits the spring 140 to throw the rear end of the lever 134 upwardly to engage the pin 138 in the recess 137, and also throw the front end 139 of the lever rearwardly of the latch bolt 14 to prevent retraction of the latch. That is, the latch cannot be forced back by a tool inserted between the door and the door jamb. This position of the parts is shown in Fig. 28. When, however, the knob is turned to retract the latch, the post 138, by reason of its engagement in the recess 137, cams the lever 134 in a clockwise direction against the spring 140, and removes the end 139 from engagement with the latch to permit its retraction.

From the foregoing it will be seen that I have devised a system of locks which may all be housed in a standard or universal lock case, in that no change is required in the case itself regardless of the kind of lock made. Also, that the system comprises locks of simple and more complex character the more complex locks being constructed by the use of the same parts employed in the simpler locks and additional parts which can be incorporated in the same case. Moreover, certain of the lock mechanisms are interchangeable in that they may be inserted in the case upon the removal of other mechanisms for which they are to be substituted. As a result, the material and parts for manufacturing a large number of any given kind of such locks may be kept in stock and assembled as desired, thus rendering the manufacture of the locks much more flexible and enabling the manufacturer to make them more economically.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and the scope of the appended claims.

What I claim is:

1. A door lock comprising a case having a side plate and a face plate, said face plate having a centrally disposed opening therein for passage of a latch bolt therethrough and also having an additional opening on each side of said centrally disposed opening, said additional openings being adapted for the passage therethrough of either a dead bolt or a dogging bolt, and said side plate being provided with means adjacent each of said second openings for detachably securing thereto a dogging-bolt-guiding member and a dead-bolt-guiding member.

2. A door lock comprising a case having a side plate and a face plate, said face plate having an opening therein adapted to receive a latch bolt and also having a second opening adapted to receive either a dogging bolt or a dead bolt, and said side plate being provided with means adjacent said second-named opening for detachably securing thereto a dogging-bolt-guiding member and a dead-bolt-guiding member, said means being disposed adjacent the forward edge of the side plate, and said side plate being provided with means adjacent its rear end for supporting a latch-bolt-operating member.

3. A door lock comprising a case having a side plate and a face plate, said face plate having an opening therein adapted to receive a latch bolt and also having a second opening adapted to receive either a dogging bolt or a dead bolt, and said side plate being provided with means adjacent said second-named opening for detachably securing thereto a dogging-bolt-guiding member and a dead-bolt-guiding member, and said side plate also being provided with an opening adjacent said means to receive the hub of a thumb turn member.

4. A door lock having a case comprising a side plate and a face plate, said face plate being provided with a substantially centrally disposed latch bolt opening and additional bolt openings one above and one below said first-named opening, said side plate being provided with latch-bolt-guiding means substantially midway between its upper and lower edges, said additional openings being adapted to permit the passage therethrough of a dead bolt or a dogging bolt, and said side plate being provided, above and below said latch-bolt-guiding means, with means for detachably securing thereto guide members for a dead bolt and a dogging bolt, and also provided adjacent each of said means with an opening to receive a thumb turn hub.

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