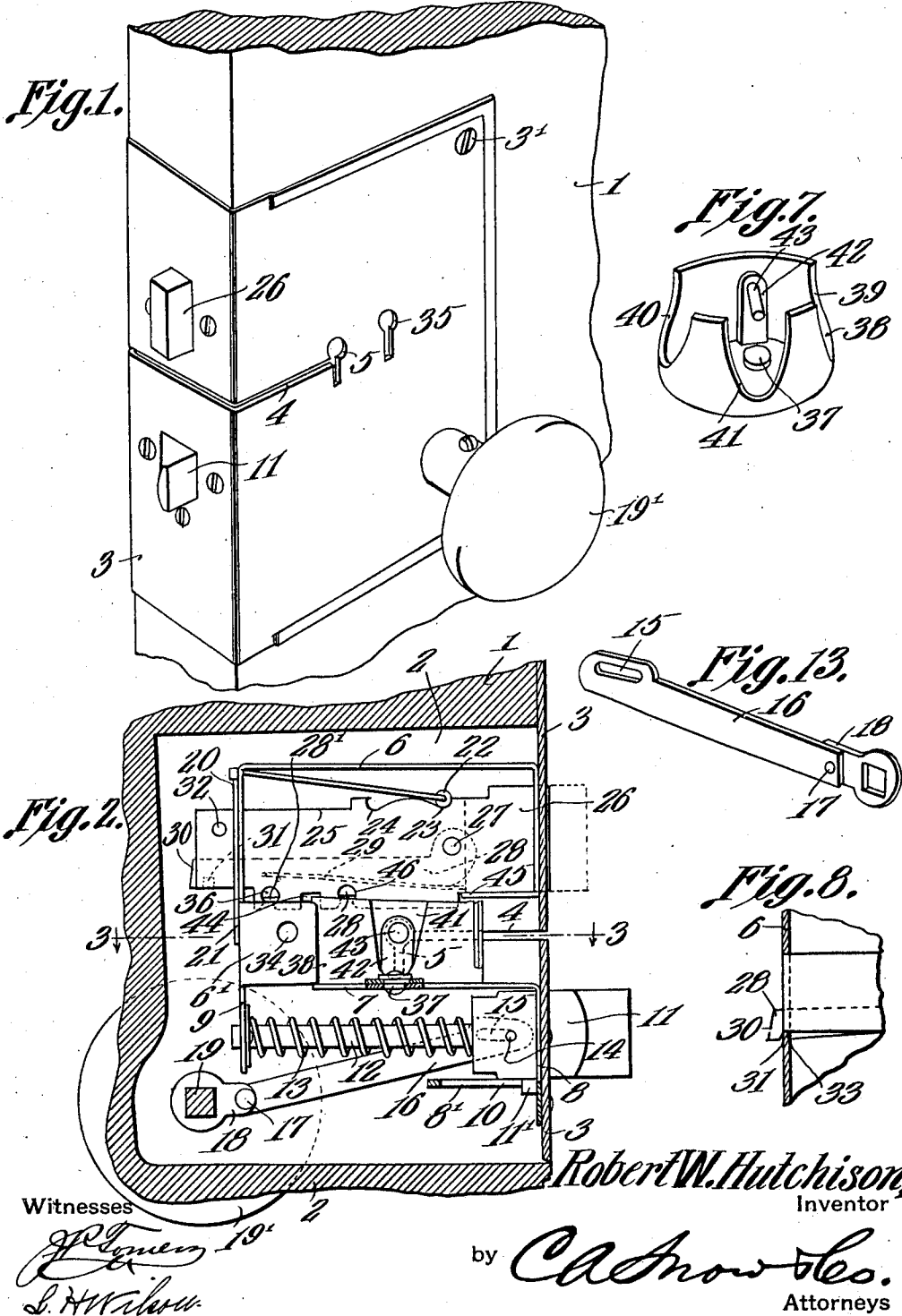


R. W. HUTCHISON.
LOCK.
APPLICATION FILED DEC. 16, 1911.

1,026,320.

Patented May 14, 1912.

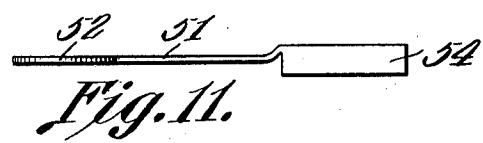
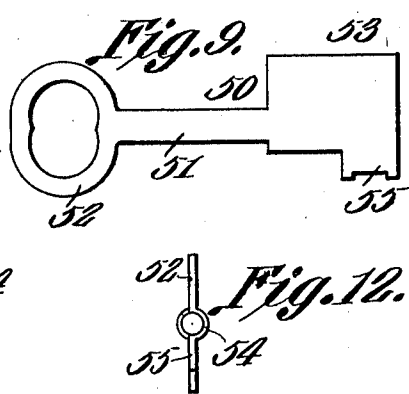
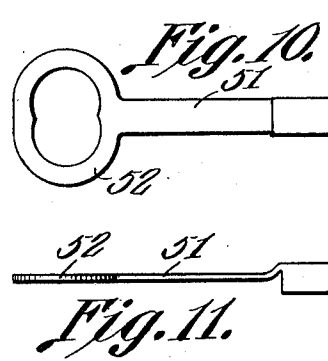
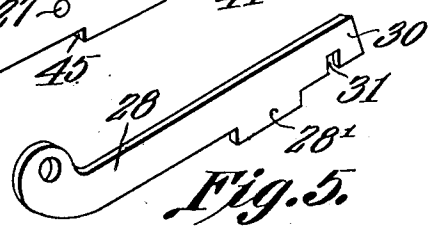
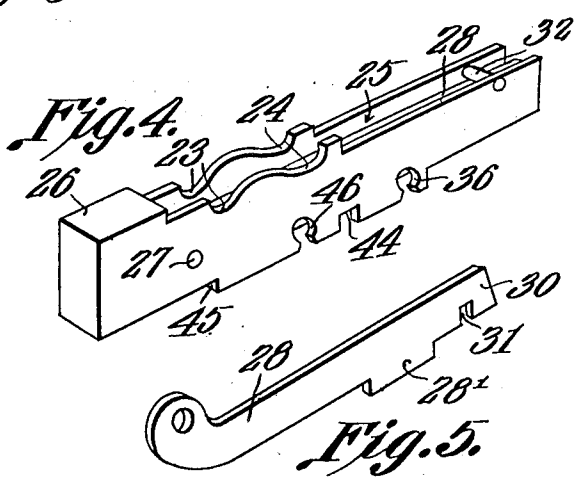
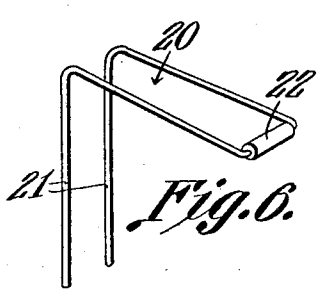
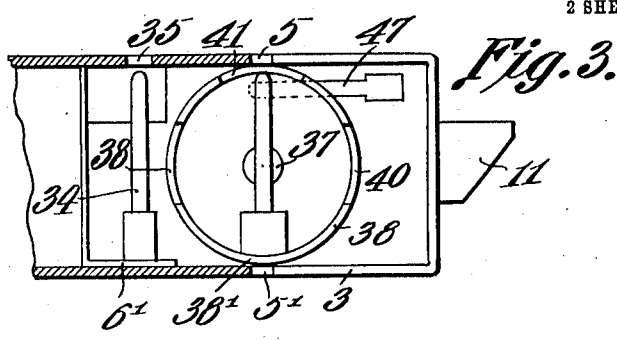
2 SHEETS—SHEET 1.



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 2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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LOCK.

1,026,320.

Specification of Letters Patent.

Patented May 14, 1912.

Application filed December 16, 1911. Serial No. 666,112.

To all whom it may concern:

Be it known that I, ROBERT W. HUTCHISON, a citizen of the United States, residing at Sixlakes, in the county of Montcalm and State of Michigan, have invented a new and useful Lock, of which the following is a specification.

The present invention relates to improvements in locks, and the primary object of the invention is the provision of a lock provided with a movable key socket capable of being reversed without detaching the lock casing from the door, and having a rigid key socket to receive the same key, whereby the bolt may be locked or unlocked by manipulation through either the key-hole of the casing or the reversible socket.

A further object of the present invention is to improve the construction and operation of the lock shown in U. S. Patent No. 576,531 dated February 9, 1897, the present lock in conjunction with the parts shown therein being provided with the additional means for operating the bolt thereby providing two key receptacles upon the main locking bolt, in addition to a knob actuated bolt carried and mounted in the same casing, said casing being inserted in the door in a similar manner to that shown in said patent.

A still further object of the present invention is the provision of a movable or oscillatory key socket chamber disposed within the lock and incased entirely there-within, in combination with a slot in the casing of a very narrow width to receive the shank of a key when the said key socket is being reversed from one side of the door to the other.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a perspective view of the completed lock in operable relation showing a portion of the door. Fig. 2 is a vertical sectional view through

the door portion and the lock with the parts in the position shown in unlocked position, 55 dotted lines showing the locking bolt projected and in locked position. Fig. 3 is a section taken on line 3—3 of Fig. 2. Fig. 4 is an enlarged perspective view of the locking bolt and its allied mechanism removed. Fig. 5 is a detail view of the pivoted lock carried by the locking bolt. Fig. 6 is a spring for holding the locking bolt downwardly and in locked and unlocked position. Fig. 7 is a detail perspective view 65 of the oscillatory key socket casing. Fig. 8 is a perspective view of the rear end of the pivoted bolt lock and the adjacent portion of the casing. Figs. 9, 10 and 11, and 12 are detail views of the key used in connection with the lock. Fig. 13 is a detail perspective view of the link for connecting the knob.

Referring to the drawings, the numeral 1 designates the door which is provided with 75 a slot 2 in the edge thereof, said slot being formed by simply sawing out of the edge of the door a block, so that the casing 3 which carries the entire lock, knob and all may be placed thereover and have its mechanism 80 carrying casing disposed within said slotted portion 2 of the door whereby the screws 3' will hold the said casing in rigid position with relation to the door. With this form of lock, the knob and its relative parts are 85 assembled at the factory and are not detached or in any way affected by attachment to the door, thus providing a complete element that needs no tampering with for positioning in place. 90

The casing 3 is provided with a slot 4 which is cut through the narrow edge fitting upon the narrow edge of the door and through the body thereof back to and adjacent to the enlarged portion of the key-holes 5 and 5' formed in opposite sides of the main walls of the casing 3 as clearly illustrated in Fig. 1, the purpose of which will presently appear.

Carried within the main casing 3 is a 100 sheet or plate frame 6 having the intermediate lugs 6' formed at the rear wall near the bottom thereof and with the shelf 7 practically closing the bottom portion thereof. The forward lugs 8 of the bottom 7 are 105 connected to the reduced portion of the cas-

ing 3 and with the lugs 8 form the support for the knob actuated bolt 11 having the stem 12 and spring 13, said spring 13 normally holding the bolt 11 projected into door casing engaging position. The bolt 11 is further provided with a pin 14, which is slidably mounted within the slot 15 of the operating link 16, the rear end of the operating link being connected at 17 to the arm 18 which is mounted upon the shaft 19 controlled by the knob 19'. By this construction it will be seen that any movement of the knob 19' will cause the retraction of the bolt 11 and at the release thereof will permit the spring 13 to actuate the bolt 11 to project it causing it to assume the position as shown in Fig. 2. In order to guide the bolt, a pin 11' is mounted in the slotted plate 8' connected to the casing 3 below and adjacent to the lugs or plates 8 of the casing 6.

Connected to the rear portion of the casing 6 at the upper edge thereof is a double terminal spring 20 whose free ends 21 rest upon the rear portion of the frame 6 and have the bail terminal carrying the roller 22 projected within the casing 6 so that the said roller will bear down and engage normally one pair 23 or the other pair 24 of recesses formed in the upper edge of the main locking bolt 25, whose rear portion is formed by two spaced plates while the forward bolt 26 is a solid member or head as clearly shown in Fig. 4. A pivot or pin 27 is mounted within the said bolt 25 between the spaced portions thereof and has pivotally connected thereto the bolt locking latch 28, which normally has its free end held downwardly by means of the spring 29 mounted within the plate 25, so that its projection 28' will project into the upper portion of the main key slot 36 of the bolt while the body thereof will project below the upper portion of the auxiliary key slot 46 as clearly shown in Figs. 2 and 4. The extreme rear end 30 of the latch 28 is provided with a notch 31, as clearly shown in Fig. 8, so that when the bolt 26 is projected into locking position the slot will engage the adjacent portion 33 of the casing and thereby lock the said bolt in projected position, all as clearly shown in dotted lines Fig. 2.

Mounted within the casing 6 is the key receiving pin 34 alined with the enlarged portion of the main key hole 35 so that the key will be fitted thereon for operating the bolt 26. The two alined key lug receiving slots 36 when the lock is in the position as shown in full lines in Fig. 2, are slightly to the rear and above the said pin 34, so that the lug 55 of the key, as shown in Figs. 9, 10, 11 and 12, when rotated to project the bolt, will enter the said key slots 36 of the bolt and engage the underside of the lug

28' of the latch 26, raising the said latch and moving the casing 25 with the bolt 26 forwardly to dotted line position Fig. 2, at which time the lug 55 of the key is forced out of the slots 36, permitting the spring 29 to throw the latch 28 downwardly so that the slot 31 will engage the portion 33 of the casing and thus lock the casing and bolt 26 in projected or locked position.

When this lock is used in connection with front doors or hotel doors, the key-holes 5 and 35 are so located as to be upon the inside of the door, thus presenting only the key-hole 5' upon the outside to prevent the opening of the lock after the occupant has entered his room or house, but permitting the insertion of the key in the key-hole 35 to actuate the lock from the inside. In order to properly accomplish this feature of the lock, a pin 37 is connected to the bottom of the main casing and pivotally connects the auxiliary key socket member or casing 38 in the position as shown in Fig. 2, permitting the same to be rotated as will presently appear and for the purpose set forth. This casing as clearly shown in Fig. 7 is provided with the three sockets 39, 40 and 41, the socket 41 being opposite to the arm or post 42 which carries the key receiving pin or stem 43 which is normally in line with the enlarged portion of either key hole 5 or 5' so that the key which will manipulate the locking bolt through the key-hole 35 may be used to fit upon the pin 43 being projected through either key-hole 5 or 5'. When projected through the key-hole 5', the said key may be rotated so that its lug 55 will enter the respective key-receiving slots 46 of the terminals 25 of the main locking bolt raising the lower edge of the latch 28 and lifting the same as the bolt 26 is moved into dotted position Fig. 2, and when in such position permitting the said latch to fall and have its slot 31 engage the portion 33 of the casing 6 and thereby retain the bolt in projected position. In unlocking the reverse action takes place and should the party desire to seal the key-hole 5', the key is turned so that the flat shank 54 thereof will aline with the slot 4 of the casing 3, permitting the operator to rotate the casing 38 with the key shank passing through the said slot 4 until the body of the key alines with the key-hole 5 in the casing 3, at which time the key may be manipulated to operate the bolt 26 and lock the door. The casing 38 when in this position will, as shown in Fig. 3, have the sealed portion 38' thereof opposed to the key-hole 5' so that a key cannot be inserted in said key-hole 5' to actuate the lock, thus sealing the outer face of the lock to the insertion of a key and by reason of the fact that the key is turned upon the spindle or pin 43 within the casing 38 when in the key-hole 5, the

said key will form with the projecting portion or lower edge of the plates 25, an auxiliary locking means to prevent the rotation of the casing 38 even should the party desiring to operate the lock insert a wire or other instrument through the slot 4 to engage the said casing 38 to rotate it to bring the stem 42 into alinement with the key-hole 5'. In order to permit the rotation of the casing 38 so that the upper edge thereof will not be interfered with, the plates 25 are provided with the alined slots 44 and shouldered portions 45 so that the casing may assume the position as shown in Fig. 2. In order to prevent the said casing 38 from being rotated too readily or easily, the spring 47 is mounted in the bottom 7 of the casing and has its free end engage the lower portion of said casing 38 to act as a brake device.

From the foregoing description, taken in connection with the drawings, it is evident that a key inserted upon either pin 34 or 43, may be manipulated to actuate the bolt 26 in projected or retracted position, and that by reason of the fact that the key is formed as shown in Figs. 9, 10, 11 and 12, from a single blank 50 of material, with a flat stem 51 and an actuating eye 52, that the enlarged portion 53 may be curved to produce the pin encircling sleeve 54 and the lock engaging lug 55, the said stem 51 being flat and reduced to permit the rotation thereof with the casing 38 between the slots 4 formed in the main casing 3 of the lock. By this means the key-hole socket casing 38 may be reversed so that its key-socket 41 will be alined with either key-hole 5 or 5', the other of said key-holes being sealed when the casing is in such position. Thus it will be seen that the occupant of a room after entering or unlocking his door may rotate the casing 38 to seal the outer key-hole 5' thereof and lock the bolt 26 by manipulation from the inside leaving the key in the casing so that the slot shank 51 thereof will be turned crosswise of the inner end of the slot 4 and thus prevent the casing 38 from being rotated by manipulation from the exterior. It is also evident that the casing 38 cannot be rotated by the key *per se*, when the bolt is in locked position, for the reason that the lug 55 of the key is in an upward position and the shank 51 is again crosswise of the mouth of the slot 4. In order to rotate the said casing 38 the key must be in position so that the flat portion of the shank 51 will aline with the slot 4 of the casing. By this construction should the key-socket casing 38 be in position to have its key slot 41 in alinement with the key-hole 5' and the occupant of the room has not actuated the said casing but has used the key-hole 35 to lock the door, it is evident that the said lock may be manipulated by inser-

tion of the key through said key-hole 35 no matter in what position the said key-socket casing 38 may have assumed.

What is claimed is:

1. A lock having a casing with two alined key-holes and a single key-hole in the walls, a bolt mounted in the casing and provided with two key-engaging portions and a movable part mounted in the casing between the alined key-holes and made reversible, said part having one key slot to aline with either of said alined key-holes of the casing.

2. A lock having a casing provided with two alined and a single key-hole in the walls thereof, a locking bolt mounted in said casing and provided with a key engaging portion adapted to be in operable relation to the respective key-holes of the casing, and a reversible key socket casing disposed within the main casing of the lock to be swung on a vertical axis for bringing its key slot to either side of the door to aline with one or the other of the alined key-holes of the main casing.

3. A lock provided with a casing adapted to incase the solid portion and sides of a door, said casing being provided with two alined key-holes, and a slot connecting the said key-holes, a locking bolt disposed in said casing and provided with a key engaging portion, and a rotatable casing mounted in the main casing and provided with a key slot at one side thereof and a sealed wall at the opposite side, said casing being adapted to have its key-hole aline with one or the other of said alined key-holes of the main casing while the closed portion thereof seals the opposite key-hole of the main casing.

4. A lock provided with a casing adapted to incase the solid portion and sides of a door, said casing being provided with two alined key-holes, and a slot connecting the said key-holes, a locking bolt disposed in said casing and provided with a key engaging portion, a rotatable casing mounted in the main casing and provided with a key slot at one side thereof and a sealed wall at the opposite side, said casing being adapted to have its key-hole aline with one or the other of said alined key-holes of the main casing while the closed portion thereof seals the opposite key-hole of the main casing, said main casing being further provided with a single key-hole to the side of one of the other key-holes in one face of the casing, said locking bolt being provided with a key-engaging portion adjacent said last mentioned key-hole.

5. A lock, having a casing adapted to fit astride the edge of a door and provided with two alined key-holes connected by a slot formed in the connecting portion of the casing and with a single key-hole to the rear of one of said key-holes, a bolt disposed within said casing and provided with two

key-engaging portions adjacent the two
alined key-holes and the single key-hole of
the casing, a rotatable socket provided with
a single key slot, and a pin mounted within
5 the socket, said socket being adapted to have
its key slot aline with one or the other of
the alined key-holes and seal the remain-
ing alined key-hole, said pin being adjacent
the slot formed in the main casing, whereby
10 a key placed thereon may be turned and
moved in said slot of the main casing to ro-
tate the socket and operate the bolt from
either side of the main casing.

6. A lock provided with a casing adapted
15 to incase the solid portion and sides of a
door, said casing being provided with two
alined key-holes and a slot connecting the
said key-holes, a locking bolt disposed in said
casing and provided with a key-engaging
20 portion, a rotatable casing mounted in the
main casing and provided with a key slot at
one side thereof and a sealed wall at the op-
posite side, said rotatable casing being
adapted to have its slot alined with one or
25 the other of said alined key-holes of the
main casing while the closed portion thereof

seals the opposite key-hole of the main cas-
ing, said main casing being further provided
with a single key-hole at one side of one of
the alined key-holes in one face of the cas- 30
ing, said locking bolt being provided with
another key-engaging portion adjacent said
last mentioned key-hole, a key pin mounted
within the rotatable casing and adapted to
have its key-hole aline with one or the other 35
of the alined key-holes and seal the remain-
ing alined key-hole, said pin being adjacent
the slot formed in the main casing, whereby
a key placed thereon may be turned and
moved in said slot of the main casing to ro- 40
tate the rotatable casing and operate the bolt
from either side of the main casing, said
bolt being provided with a latch adapted to
be operated by the rotation of a key to lock
the bolt in projected position. 45

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

ROBERT W. HUTCHISON.

Witnesses:

Wm. A. Wood,
G. E. Wood.