P. M. COFFIN.

LOCK.

APPLICATION FILED NOV. 14, 1914.

1,158,446.

Patented Nov. 2, 1915.

2 SHEETS—SHEET 1.

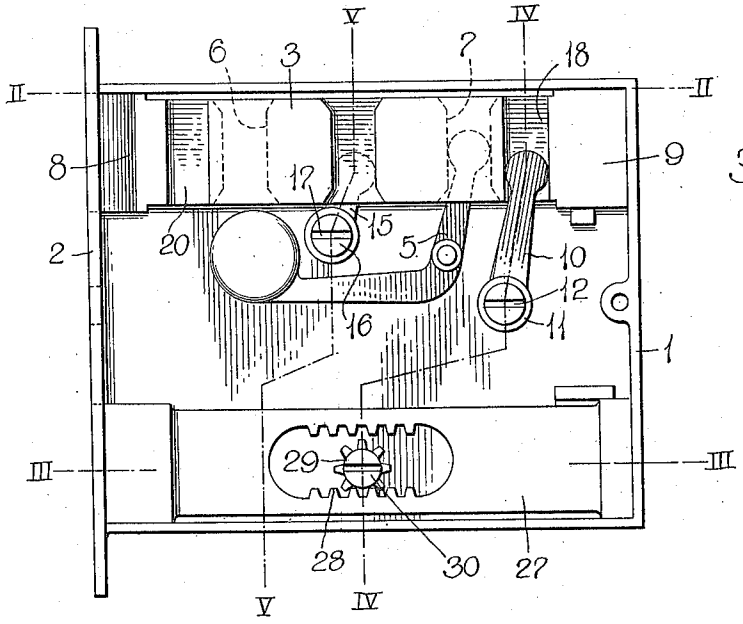


Fig. 1.

Fig. 2.

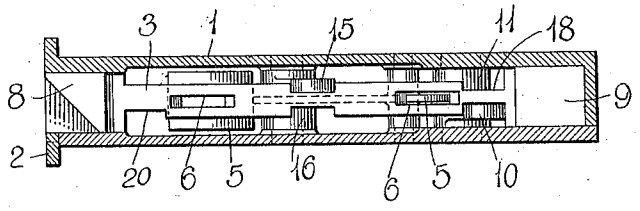
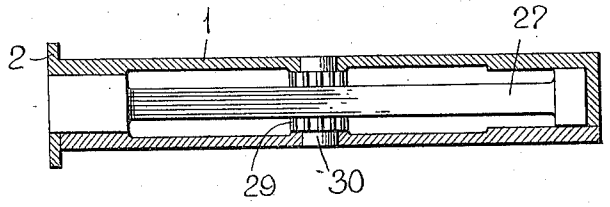


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

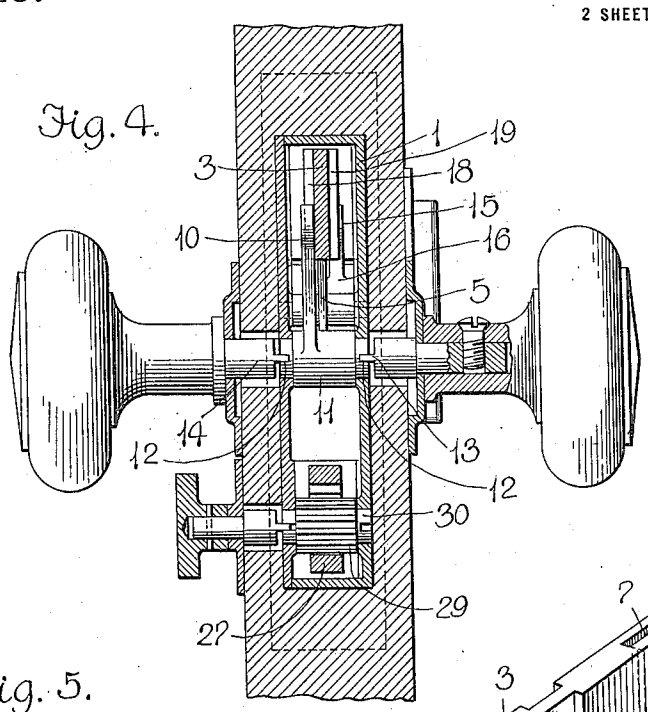
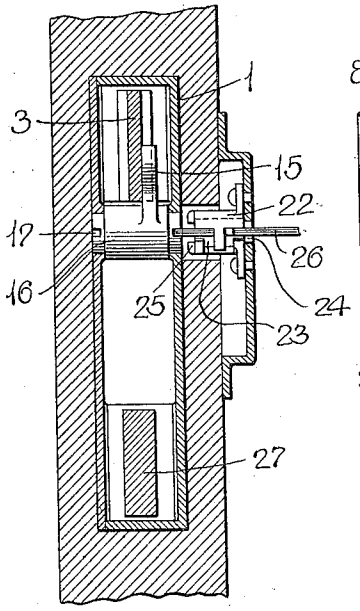


Fig. 5.



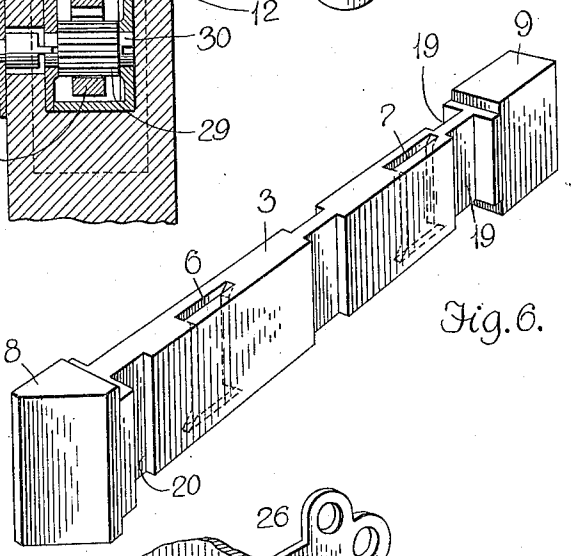


Fig. 6.

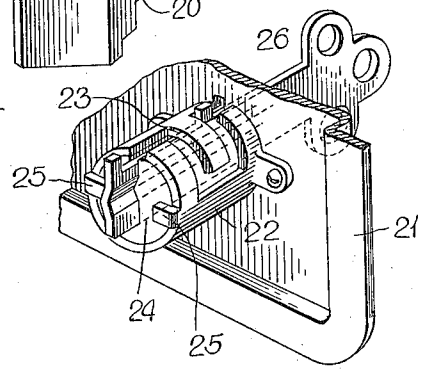


Fig. 7.

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UNITED STATES PATENT OFFICE.

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Application filed November 14, 1914. Serial No. 872,158.

To all whom it may concern:

Be it known that I, PHILIP M. COFFIN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to door latches and locks and to an arrangement thereof that provides for reversing the locks and for attaching knobs for operating the same to either or both sides of the door and for applying key locking devices thereto at either one of the several points, together with certain other details of construction which insure durability and low cost of manufacture.

This invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view in side elevation with side plate removed of a lock that embodies features of the invention, the handles or knobs and key lock mechanism being omitted; Fig. 2 is a view in transverse section taken on or about line II—II of Fig. 1; Fig. 3 is a view in cross section taken on or about line III—III of Fig. 1; Fig. 4 is a view in cross section taken on or about line IV—IV of Fig. 1; showing the lock in position in a door with door knobs attached thereto and a key barrel plate mounted thereon; Fig. 5 is a cross sectional view through the assembled structure of Fig. 1, taken at or about the lock barrel mechanism; Fig. 6 is an enlarged view in detail of the main latch bolt; and Fig. 7 is an enlarged view in perspective, partially broken away of a lock barrel.

Referring to the drawings, a casing 1 with face or jamb plate 2 houses a main bolt 3 and an auxiliary bolt 27. A weighted bell crank lever 5 that is pivoted between its ends in the casing enters either one of a pair of transverse slots 6 and 7 in the bolt dependent upon whether the beveled head 8 of the bolt, or the square head 9 is used. In place of the weighted arm of the bell crank a suitably disposed spring may be used. The latch may be thrown also by an arm 10 mounted on a spindle 11 that projects through the side plates of the casing and has transverse slots 12 in its end faces for the application of a key 13 or the correspondingly tongued end portion 14 of a knob shank. Similarly the bolt may be turned by a lever 15 extending from a stud 16 with slots 17 in the ends thereof to which a key or knob shank may be applied. The lever 10 may be engaged in a transverse notch 18 and opposite grooves 19 or a forward groove 20 according to the position of the bolt which is reversible end for end and side for side.

A key plate 21 has an inwardly projecting barrel 22 with serrated or angularly notched groove 23 longitudinally thereof and with a notched guide opening in a longitudinally slotted cylinder 24 that is held in position by a pair of inturned ears 25 on the barrel end against an opening in the face plate. An appropriately designed key indicated at 26 may by proper manipulation be thrust through the cylinder and barrel so that its end portion enters a notched end face of either of the turning studs 12 or 16 with which the barrel may be placed in alinement.

In addition to the key lock an ordinary bolt 27 may be added with a longitudinal slot engaged having rack teeth 28 on each side, by a pinion 29 on a rotatable handle stud 30 according to the position of the bolt which is reversible.

By this arrangement a latch and bolt is obtained that is right or left handed, that may be made to operate as a self-throw latch or with a square bolt and that has simple and effective key lock mechanism applied at any one of four places, a similar disposition of the door knob being possible. There is no mechanism to get out of order and the latch has all the advantages of an ordinary door pull as well as a night latch. By omitting the weighted bell crank, the lock acts only by key or handle.

Obviously changes in the details of construction may be made without departing from the spirit of my invention and I do not care to limit myself to any particular form or arrangement of parts.

What I claim is:—

1. A door latch and lock comprising a casing, a bolt longitudinally reciprocable in the casing through the face plate thereof and reversible in the casing, a bolt-throwing member oscillatory in the casing that operatively engages the bolt in any position of the latter, manually controllable studs journaled in the casing and operatively connected to the bolt to shift the latter, a key-hole plate adapted to be mounted in operative aline-

ment with either end of either stud, a key adapted to be passed through the plate into interlocking engagement with an adjacent stud and handles having shanks each adapted to interlock with either end of either stud to turn the latter when the shanks are arranged in axial alinement therewith.

2. A door latch and lock comprising a casing, a bolt longitudinally reciprocable in the casing through the face plate thereof and reversible in the casing, the bolt having transverse slots and recesses therein, a bolt-throwing member oscillatory in the casing adapted to enter one of the recesses or slots of the bolt regardless of the position of the latter for automatically throwing the bolt, manually controllable studs journaled in the casing and provided with rock arms adapted to enter the slots and recesses of the bolt for throwing the latter, regardless of the position of the bolt, a key-hole plate adapted to be mounted in operative alinement with either end of either stud, a key adapted to be passed through the plate into interlocking engagement with an adjacent stud end, and handles with shanks each adapted to interlock with either end of either stud to turn the latter when the handles are in alinement with the studs.

3. A door latch and lock comprising a casing, a bolt longitudinally reciprocable in the casing through the face plate thereof, reversible in the casing, a bolt throwing member journaled in the casing and adapted to interlock with one of the recesses or slots of the bolt dependent upon the position of the latter for automatically projecting the bolt, manually controllable studs journaled in the casing and provided with rock arms that interlock with the bolt in the slots or recesses thereof, the end faces of the studs being flush with the exterior of the casing and being provided with slots, a key-hole plate adapted to be mounted in operative alinement with either end of either stud, a key adapted to be passed through the key-hole plate into engagement with the slotted end of an adjacent stud and handles provided with shanks that are adapted to engage the slotted ends of the studs when the handles are mounted in axial alinement with the studs.

4. In a door latch and lock, a casing having an apertured face plate at one end thereof, a bolt longitudinally reciprocable in the casing through the face plate and reversible in the casing, the bolt being provided with transverse slots and recesses, a bell crank pivoted between its ends in the casing and adapted to interlock with the recessed bolt in any position of the latter for projecting the bolt under the influence of an operating member, manually controllable studs journaled in the casing transversely to the bolt with their outer slotted ends flush with the casing and handles having shanks each adapted to interlock with either end of either stud to turn the latter.

5. In a door latch and lock, a casing, a bolt longitudinally reciprocable in the casing and reversible therein, means in the casing engaging with the bolt in any position of the latter for automatically projecting it, studs oscillatory in the casing having slotted end faces flush with the outer faces of the casing and rock arms that interlock operatively with the bolt, a key-hole plate provided with a barrel, a cylinder journaled in the barrel having a longitudinal slot therethrough and a key adapted to be passed longitudinally through the cylinder and barrel and to interlock with either end of either stud to turn the latter when the key-hole plate is mounted in axial alinement with said stud.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP M. COFFIN.

Witnesses:
C. R. STICKNEY,
ANNA M. DORR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."