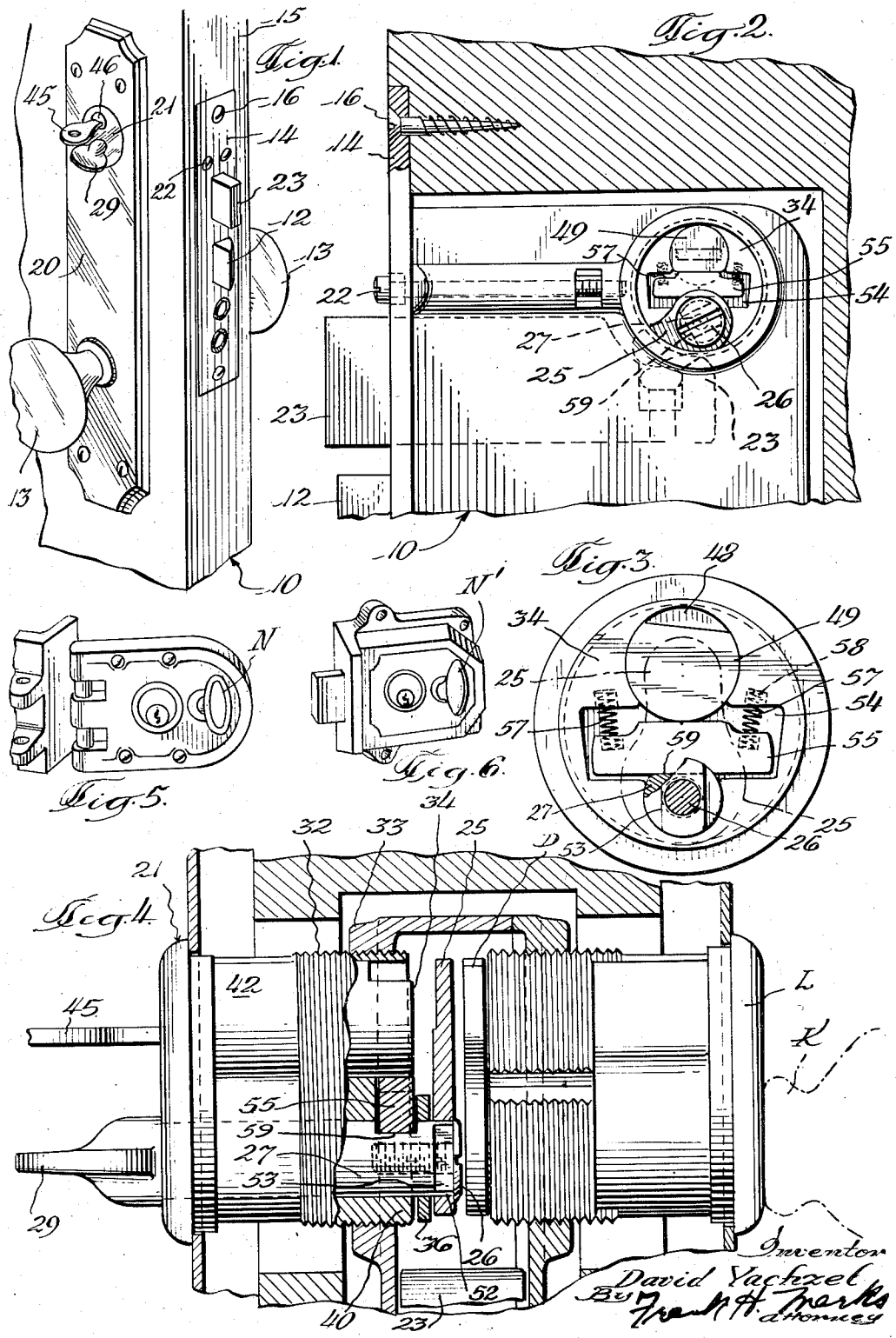
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COMBINED LATCH AND LOCK

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COMBINED LATCH AND LOCK

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5 Claims. (Cl. 70—129)

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My invention relates generally to locks and has to do more particularly with a safety or double feature lock for a door or like closure.

Doors or the like are commonly provided with locks of more or less standard type which may be locked by a key on the outside or by a turn knob on the inside.

An object of my invention is to provide a key actuated cylinder lock, which will secure a bolt actuating device in either locked or unlocked position.

Still another object is to provide, in combination with a door or like closure, a combination lock comprising a key actuated lock on one side of the closure and a knob actuated lock on the other side, the latter being securable by means of a withdrawable key, the devices on both sides of the door cooperating with the same bolt.

Still another object of my invention is to provide a device of the type referred to which will be simple in design, inexpensive to fabricate and generally satisfactory for the purposes desired.

Various other objects and advantages will probably suggest themselves to those skilled in the art as the description proceeds.

Referring now to the drawings forming a part of this specification and illustrating certain preferred embodiments of my invention:

Fig. 1 is a fragmentary perspective view of a door on which is mounted a lock embodying my invention;

Fig. 2 is a vertical sectional view through the same, with the parts shown in process of actuating a bolt;

Fig. 3 is an enlarged detailed end elevation of my improved combination lock, showing the safety lock in locked condition;

Fig. 4 is a sectional view through a door on a plane transverse to that of Fig. 2, but showing the lock in a different position from that of Fig. 2; and

Figs. 5 and 6 are perspective views of other types of locks to which my invention has been applied.

Referring first to Figs. 1 and 2, the numeral 10 indicates a door in which is mounted a lock including a latch bolt 12 controlled by a knob or handle 13, 13 on either side of the door in a manner well known to the art, the latch bolt 12 extending through a face plate 14 of the usual type mounted on the edge 15 of the door as by means of screws 16.

Arranged on one side of the door there is a suitable escutcheon plate 20 through which extends a cylinder type of lock 21 retained by a screw 22. The lock 21 controls a bolt 23 by means of a lever or dog 25 axially secured by

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means of a screw 26 on a shaft 27, said shaft terminating in a finger piece or knob 29. The cylinder lock has a threaded barrel 32 which is screwed into a casing 33 (Fig. 4). Interposed between the dog 25 and the rear face 34 of the cylinder barrel there is a washer 36.

The shaft 27 is journaled in a cylindrical journal portion 40 of the lock 21 and within the journal part 40 and parallel to the shaft 27 there is a journal part 42 housing the tumblers of a more or less standard lock of the cylinder type, the elements of which need not be and are not shown, said elements being controlled in the usual way by means of a removable key 45 insertable in a keyhole 46. Said tumbler elements (not shown) are carried by a shaft 48 to the end of which opposite the keyhole is fixed a cam disk 49 having a segmental portion removed as best seen in Fig. 3, said disk being rotatably housed in a circular barrel cut away from the rear face 34 of the threaded portion 32 of the lock.

The dog 25 is mounted on the shaft 27 by means of an elongated slot 52 therein which seats on a correspondingly shaped lug 53 formed adjacent the end of the shaft 27. The rear face 34 is further cut out as at 54 to form a substantially rectangular housing for a block 55 retained in said housing by means of helical springs 57, cavities being bored into the wall of the housing 54 to retain said springs. The shaft 27 has a flat face 59, as seen best in Fig. 3 against which the block 55 bears when the latter is held in the locked position by the cam disk 49 as shown in Fig. 3 which is also when the dog 25 is in a position as shown in dotted lines.

When it is desired to lock or unlock the door, the finger piece 29 is rotated, turning the dog 25 so that it actuates the bolt 23 in a well known manner, either moving same to locked or unlocked position, as the case may be, and in any event making a complete revolution and restoring the dog to its position in registration with the disk 49, as seen in Fig. 3. Assuming that the bolt has been shot to the locked position by rotation of the dog 25, the key is inserted in the keyhole and rotated a half turn, moving the cam disk 49 from the position shown in Fig. 2 to the position shown in Fig. 3, with the circular face bearing against the block 55, and moving the block from the position shown in Fig. 2 to that shown in Fig. 3, where it engages against the flat face 59 of the shaft 27. The key is then removed and the device is then in locked condition, inasmuch as the finger piece 29 cannot be rotated by reason of the flat face 59 of the shaft 27 abutting against the block 55. When it is desired to retract the bolt to unlocked position, the key is

inserted and rotated, restoring the cam disk 49 to the position shown in Fig. 2. The finger piece can then be freely rotated inasmuch as the shaft 27 will be allowed to move the block 55 against the action of the springs 57 from the position of Fig. 3 to the position shown in Fig. 2. If for any reason it is desired to retain the bolt retracted in unlocked position, obviously, it is only necessary to turn the key 45 when the bolt is in such position until the cam disk 49 has been moved to the position shown in Fig. 3, and the key then removed.

Fig. 4 shows my improved safety lock mounted on one side of a door with a standard cylinder lock L mounted on the opposite side, said lock being controlled by means of a key K. The key K controls a dog D which in the embodiment shown actuates the same bolt 23 as does the dog 25 of my safety lock. Obviously, if desired, a separate bolt might be provided for the standard lock L in addition to the bolt 23 controlled by my safety lock.

Figs. 5 and 6 show my invention applied to locks of otherwise standard types known as cylinder rim dead locks. The application of the double locking feature to the bolt actuating knobs N and N' will be obvious to those skilled in the art, and may be accomplished in substantially the same manner as shown in detail in Figs. 2, 3 and 4.

Various changes coming within the spirit of my invention may suggest themselves to those skilled in the art, and hence I do not wish to be limited to the specific forms shown or uses mentioned except to the extent indicated in the appended claims, which are to be interpreted as broadly as the state of the art will permit.

I claim:

1. A cylinder lock having a rotatable key and tumbler controlled shaft with a flat segmental portion thereon within a cylinder, a bolt-actuating shaft mounted within said cylinder on an axis parallel to said shaft and also having a flat segmental portion, a member elongated in a direction transverse to the axes of said shafts and translatable between and in a plane perpendicular to said shafts and being so positioned with reference to said flat segmental portions on said shafts that the latter may be engageable with the opposite sides of said member, and resilient means urging said member toward one of said shafts, whereby said first shaft in one position of its rotation will lock said member in cooperative relation with the other shaft so that the latter will be secured against bolt-actuating movement while in another position of said first shaft the second shaft will be free to actuate a lock bolt.

2. In a combined lock and latch, a bolt slidable to and from locked position, a barrel, a first shaft rotatable within said barrel and positioned parallel to the axis of the latter, a dog on said shaft and engageable with said bolt for moving same to and from locked position, a key controlled second shaft rotatable within said barrel and also positioned parallel to the axis of the latter, a cam disk on said second shaft, and a block positioned intermediate said cam disk and the first shaft for binding engagement with the latter to hold the bolt in locked position.

3. In a combined lock and latch, a bolt slidable to and from locked position, a barrel, a first shaft having a segmental flat portion thereon rotatable within said barrel and positioned parallel to the axis of the latter, a dog on said shaft and engageable with said bolt for moving same to and from locked position, a key-controlled second shaft rotatable within said barrel and also positioned parallel to the axis of the latter, a cam disk on said second shaft, and a slidable block positioned intermediate said cam disk and the first shaft for engaging the flat segmental portion on the latter to hold the bolt in locked position.

4. In a combined lock and latch, a bolt slidable to and from locked position, a barrel, a first shaft having a segmental flat portion thereon rotatable within said barrel and positioned parallel to the axis of the latter, a dog on said shaft and engageable with said bolt for moving same to and from locked position, a key-controlled second shaft rotatable within said barrel and also positioned parallel to the axis of the latter, a cam disk on said second shaft, a slidable block positioned intermediate said cam disk and the first shaft, and spring means biasing the said slidable block towards the first shaft, said cam disk being engageable with the slidable block to force same against the action of said spring means into abutment with the flat segmental portion on the first shaft to hold the bolt in locked position.

5. In a combined lock and latch, a bolt slidable to and from locked position, a barrel having a rear face, said rear face having a recess therein, a first cylindrical opening joining said recess on one side of the latter, and a second cylindrical opening joining said recess on the opposite side, a first shaft having a flat segmental portion thereon rotatable within said barrel, positioned parallel to the axis thereof, and having the flat segmental portion rotatably positioned with the second opening in the rear face of the barrel, a dog on said shaft and engageable with said bolt for moving same to and from locked position, a key-controlled second shaft rotatable within said barrel and also positioned parallel to the axis of the latter, a cam disk on said second shaft and rotatable within the first opening in the rear face of the barrel, a slidable block positioned in the recess in the rear face of the barrel and intermediate said cam disk and the first shaft, and spring means positioned between a wall of said recess and said slidable block and biasing the latter towards the first shaft, said cam disk being engageable with the slidable block to force same against the action of said spring means into abutment with the flat segmental portion on the first shaft to hold the bolt in locked position.

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