Aug. 9, 1949. E. L. TEICH 2,478,436

LOCK

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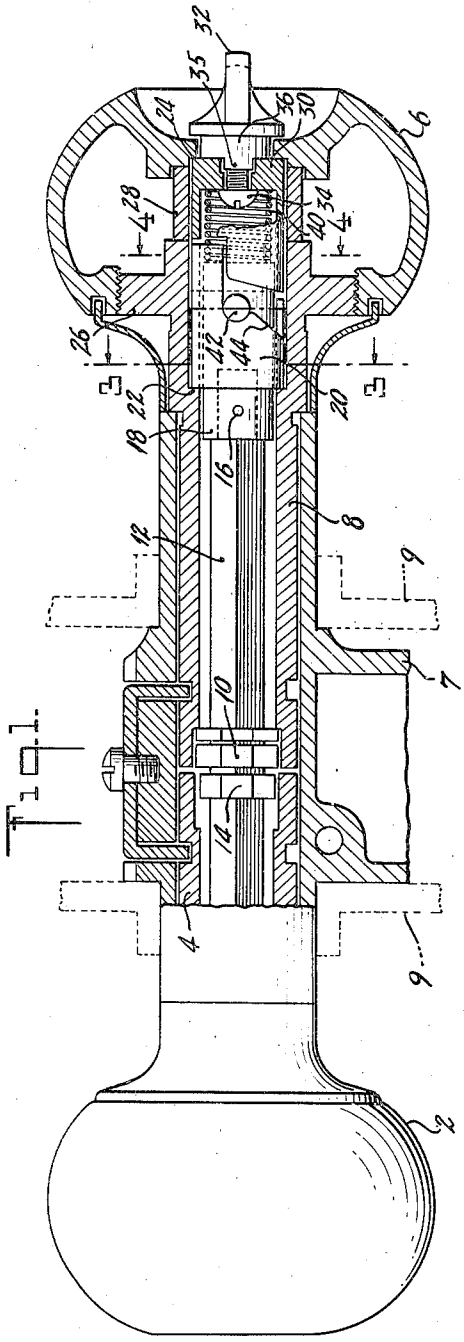


Fig. 1.

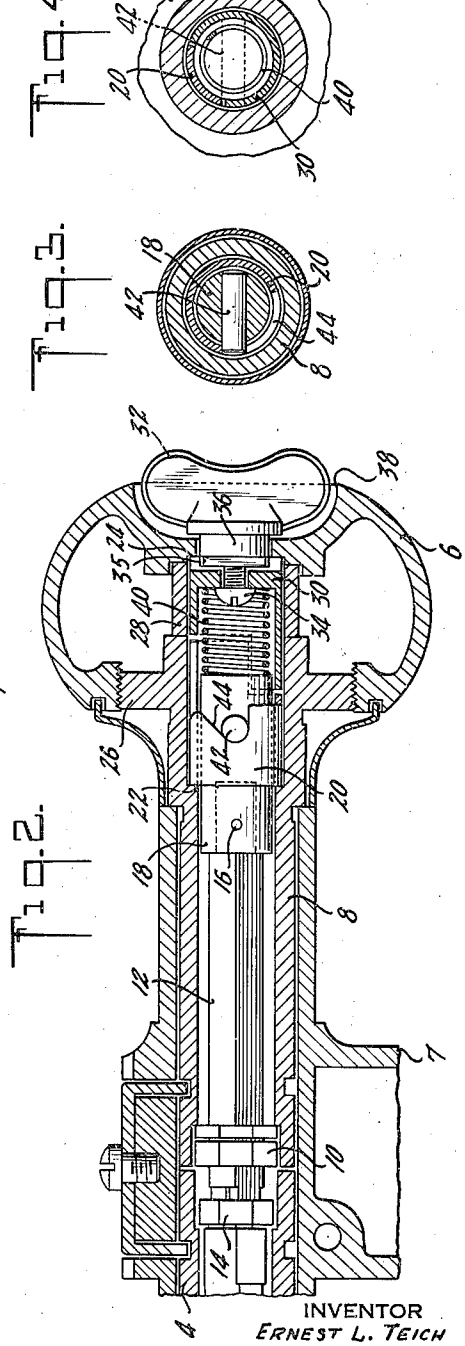


Fig. 2.

Fig. 4.

Fig. 3.

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LOCK

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1 Claim. (Cl. 292—1)

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The present invention relates to door locks and latches, and has for its object to provide novel and improved means for locking and unlocking the outer knob from the inside of the door.

The invention is illustrated, by way of example, in the accompanying drawings, in which:

Figure 1 is a longitudinal sectional view, on an enlarged scale and partly in elevation, of a portion of my improved lock in its preferred form, the parts being shown in the position they assume when the outer knob is unlocked;

Fig. 2 is a similar view but with the parts shown in the position they assume when the outer knob is locked; and

Figs. 3 and 4 are sectional views respectively taken on the lines 3—3 and 4—4 of Fig. 1.

The lock illustrated in the drawings is of the type of the one described and claimed in the patent to Byron Phelps, 626,341, dated June 6, 1899.

As shown, the lock is provided with an outer knob 2 having a spindle 4, an inner knob 6 having a spindle 8, a casing or frame 7, and escutcheons 9, which parts correspond respectively to the outer knob E, spindle *e*, inner knob D, spindle *d*, casing or frame A, and escutcheons C, of the lock of said Phelps patent. A roll-back 10 is mounted on a rod 12, whereby upon turning the rod the roll-back may be turned so as to act through suitable devices to retract the latch-bolt (not shown). Also, mounted on the rod 12 is a roll-back 14 which upon turning the outer knob is adapted to retract the latch-bolt. Said roll-back 10, rod 12, and roll-back 14, correspond respectively to the roll-back F, rod G, and roll-back K of the lock of said Phelps patent. Upon shifting the rod 12 axially in an outward direction, the roll-back 14 is moved into position to lock the shank 4 from turning so as to lock the outer knob from being turned to retract the latch-bolt, the shank being released upon shifting the rod in the opposite direction. To effect these operations, the roll-back 14 is axially fixed to the rod 12 and rotatable with relation thereto, and the roll-back 10 is rotatably fixed to said rod and movable axially with relation thereto. The rod is adapted to be thus shifted by manually operable means from the inner side of the door.

Thus when the door is closed, upon shifting the rod 12 outwardly by said manually operable means, the outer knob may be locked so that the latch-bolt can only be retracted from the outside of the door by means of a key, and upon shifting the rod in the opposite direction the outer knob may be released so as to permit it to be returned to retract the latch-bolt.

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Except as hereinafter described, the parts above referred to may be substantially the same as the corresponding parts of the lock of said Byron Phelps patent.

In accordance with the present invention the manually operable means for shifting the rod 12 is simple in construction and easily and conveniently operated. As shown the inner knob end of the rod 12 is secured by means of a pin 16 in a recess in a cylindrical head 18 which extends into a sleeve 20. This sleeve is made in two parts which have a tongue and slot connection between them so as to cause them to turn together and enable them to be separately mounted. The sleeve 20 is mounted to turn in the outer end of the knob spindle 8, and is held from axial movement with relation to the knob spindle by being interposed between a shoulder 22 in the knob spindle, and a shoulder 24 in the knob. The knob 6 is made hollow and is screw-threaded on a flange 26 on the spindle 8. A collar 28 is positioned between the end of the shank and the hollow shell of the knob 6, this collar surrounding and forming a bearing for the outer portion of the sleeve 20. The outer end of the sleeve 20 has an end wall 30. A turn button 32 is secured to the end wall 30 by means of a screw 34 and a tongue 35 which is received in a transverse slot in the end wall. The shank 36 of the button 32 extends through an aperture in the wall of the knob. The knob is provided with a recess 38 which receives the inner portion of the button, and is of sufficient diameter to permit the button to be easily grasped by the fingers.

A coiled expansion spring 40 is interposed between the end wall 30 and the end of the rod-head 18 so as to press the rod 12 outwardly. The head 18 carries a transverse pin 42 which engages a cam surface 44 on the inner part of the sleeve 20, the cam surface limiting the inward movement of the rod 12 by action of the spring 40.

With this construction, upon turning the turn-button 32 ninety degrees in a clockwise direction from the position shown in Fig. 1 to that of Fig. 2, the sleeve 20 is turned therewith, and the cam surface 44 thereof permits the spring 40 to shift the rod 12 to move the roll-back 14 into position to lock the outer knob as above described. Upon turning the button 32 in the opposite direction to return it to the position shown in Fig. 1, the rod 12 is shifted in the opposite direction so as to move the roll-back 14 to release the outer knob.

It will be noted that the parts of the device including the rod 12, sleeve 20, and spring 40, may be easily assembled in the knob, and when as-

sembled are securely held and there is no danger of the parts getting out of order. Also, it will be apparent that the arrangement of the turned button operating means is such that the device may be easily and conveniently operated from the inside of the door, and upon observing the position of the turn-button it may be readily determined whether the outer knob is locked or unlocked.

As will be evident to those skilled in the art, my invention permits various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

In a lock of the class described having inner and outer knob spindles, and means comprising a roll-back and a rod adapted to be moved axially in opposite directions to move the roll-back to lock and unlock the outer knob, the improvement which comprises a sleeve mounted to turn in the inner knob spindle and held from axial movement therein, a spring interposed between the outer end of said sleeve and the end of the rod for urging said rod axially in one direction, said sleeve having a cam surface, a pin secured to said rod and engaging said cam surface whereby upon turning said sleeve in one direction said cam surface acts on said pin to move said rod axially in one direction and upon turning said sleeve in the opposite direction said cam surface permits the spring to move said rod axially in the opposite direction, and a turn-button secured to said sleeve and accessible from the outside of said inner knob for turning said sleeve.

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