Sept. 8, 1942. E. L. TEICH 2,295,435

DOOR LOCK AND LATCH

Filed May 11, 1939

Fig. 1.

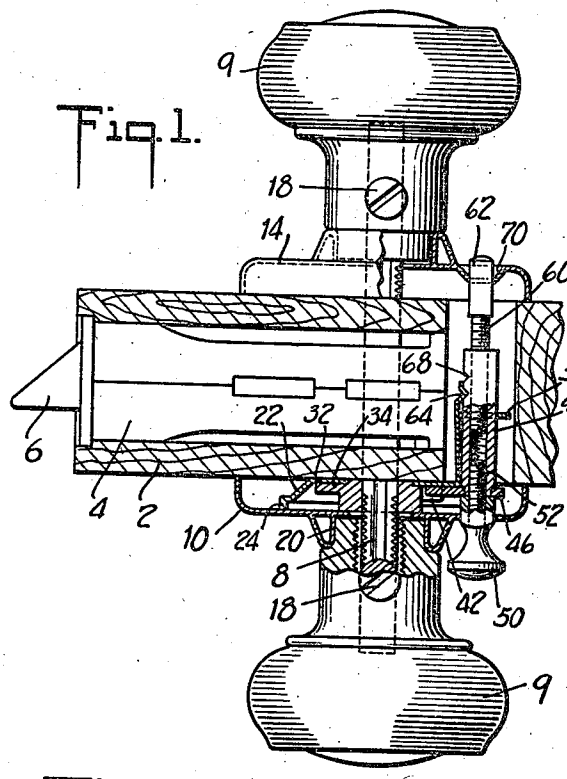



Fig. 2.

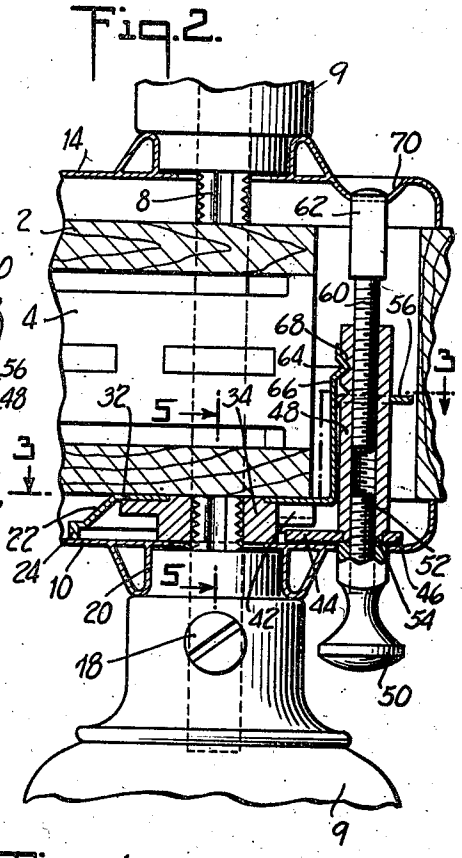



Fig. 3.

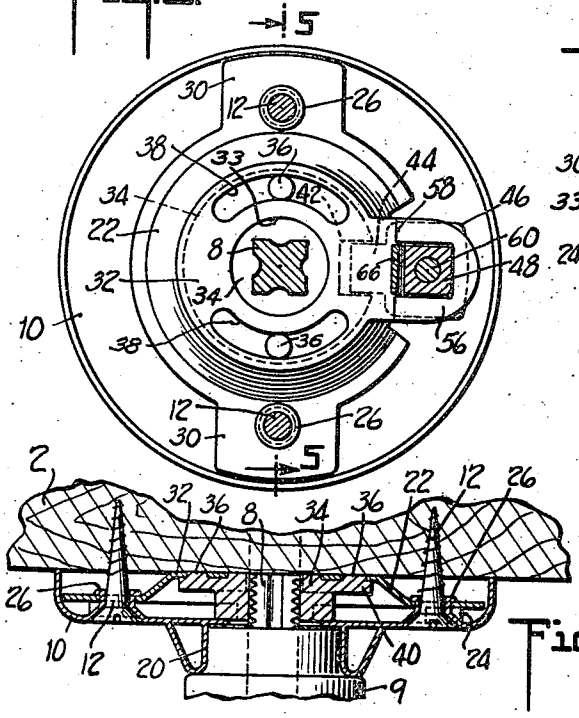



Fig. 4.

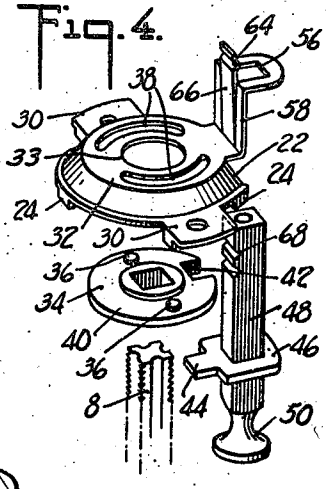



Fig. 5.

INVENTOR
Ernest L. Teich
BY
Bartlett Eyre Smith & Hook
ATTORNEYS

Patented Sept. 8, 1942 2,295,435

# UNITED STATES PATENT OFFICE

2,295,435

## DOOR LOCK AND LATCH

Ernest L. Teich, New Britain, Conn., assignor to The American Hardware Corporation, New Britain, Conn., a corporation of Connecticut

Application May 11, 1939, Serial No. 272,948

3 Claims. (Cl. 292—359)

The present invention relates to door locks and latches of the type that are provided with dead locking means.

One of the objects of the invention is to provide a lock or latch of the character indicated which is of simple and strong construction, easily and quickly assembled and applied to a door, and reliable and convenient in use.

Another of the objects of the present invention is to provide novel and improved dead-locking means for locks and latches.

The preferred embodiment of the invention is illustrated, by way of example, in the accompanying drawing, in which:

Figure 1 is a horizontal sectional elevation of a portion of a door having my improved latch applied thereto, the latch being shown dead-locked;

Fig. 2 is a similar view, on an enlarged scale, but with the latch shown unlocked;

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

Fig. 4 is an exploded view in perspective of the dead locking mechanism; and

Fig. 5 is a sectional view, taken on the line 5—5 of Figs. 2 and 3.

My improved lock is illustrated in the drawing applied to a door 2. The lock comprises a latch casing 4 which may be inserted in an aperture in the inner edge of the door, a latch bolt 6, a rotatable knob spindle 8, and knobs 9 on the ends thereof. The knob spindle may be connected with the latch bolt 6 by any suitable means (not shown) arranged within the casing 4. The knob spindle extends through an escutcheon 10 which may be secured by screws 12 on the inner side of the door, and an escutcheon 14 secured on the outer side of the door. The knobs 9 are secured by screws 18 on the ends of the spindle, the inner ends of the knobs being received in socket 20 on the escutcheons.

By means of the knobs, the spindle may be turned to retract the latch bolt 6 through the connecting mechanism.

In accordance with the present invention, a back plate 22 is arranged within the inner escutcheon 10. This plate has outwardly projecting lugs 24 which engage the inner side of said escutcheon 10. The back plate is held in position in the escutcheon by rivets 26 which are formed in the outer wall of the escutcheon and extend through apertures in outwardly projecting lugs 30 on the back plate and have their ends riveted over, the rivets 26 forming sockets for the screws 12. The back plate has a central portion 32 spaced from the inner side of the escutcheon 10 and arranged against the inner side of the door. Between the portion 32 of the back plate and the escutcheon, is a stop hub 34, the hub having a square aperture which fits over the spindle so as to prevent the hub from turning on the spindle. The hub 34 has a reduced end which is adapted to turn in an aperture 33 in said portion 32 of the back plate. This hub is provided with inwardly projecting studs 36 which extend into arcuate slots 38 in the back plate. During the turning of the spindle and hub the studs 36 work in the slots 38 and thus assist in holding the hub in proper position. The hub 34 has a disk-like inner portion or flange 40 which is provided with a square notch 42. This notch is adapted to receive a tongue 44 on a stop member 46 that is carried by a stop spindle 48 arranged parallel with the axes of the knob spindle and extending through an aperture in the door.

The stop spindle 48 has a knob 50 secured on the end thereof by a screw 52 which is screw-threaded into an axial aperture in the stop spindle and a socket in the knob 50. The stop member 46 is secured to the stop spindle 48 by a reduced square outer end 54 on the stop spindle which extends through a corresponding squared aperture in the stop member 46, the stop member being held in position by the knob 50. The shank or inner end portion of the knob 50 is square in cross section and is guided in a square aperture in the inner escutcheon 10. The stop spindle 48 is also square in cross section and its inner portion is guided in a square aperture in an outwardly projecting bent lug 56 on a tongue 58 projecting inwardly from the back plate 22.

The stop spindle 48 is provided with an extension 60 which is screw-threaded into the inner end of the axial aperture in the spindle 48, and its outer end is provided with a square knob or button 62 which extends out through a squared aperture in the outer escutcheon 14.

The stop spindle is adapted to be shifted in opposite directions to position the tongue 44 of the stop member 46 into and out of the square notch 42 in the flange of the stop hub 34. The stop spindle 48 is held in the two positions thus moved by a V-shaped portion 64 of a leaf spring 66 which extends integral with the back plate 22, the leaf spring being struck out of the tongue 58. The V-shaped portion of the spring 64 is adapted to be received in holding engagement with transverse notches 68 in the stop spindle 48.

With this construction, when the knob spindle is released and the latch 6 is projected, upon

pressing inwardly on the knob **50**, the stop spindle **48** is shifted from the position shown in Fig. 2 to the position shown in Fig. 1 in which latter position the stop lug **44** is received in the notch **42**. This results in the stop hub **34** and consequently the spindle being held from turning movement, thus dead-locking the knobs and preventing the retraction of the latch bolt **6**.

Upon pulling on the knob **50**, the stop spindle **48** may be moved into the position shown in Fig. 2, thus disengaging the stop lug **44** from the notch **42** to release the knobs for turning movement.

When the knobs are thus dead-locked, in case of emergency it may be released from the outside of the door by pressing inwardly on the knob or button **62**. The end of this button is received in a socket **70** in the outer escutcheon and when the latch is unlocked this end is arranged at the bottom of the socket and thus cannot be grasped by the fingers to shift the stop spindle to dead-lock the knobs.

The dead-locking knob **50** and the knob or button **62** are arranged at one side or the other of the spindle knobs, depending on whether the door is right or left hand, so that they are conveniently accessible.

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:

1. In a latch structure of the class described the combination of escutcheons for attachment to opposite sides of a door, a rotatable knob spindle extending through the escutcheons, a dead-locking device extending through apertures in the escutcheons and adapted to be moved longitudinally in opposite directions, cooperating devices on said spindle and said dead-locking device adapted to operatively engage and disengage to lock and unlock the spindle upon said dead-locking device being shifted in opposite directions, a member on one end of said dead-locking device adapted to be grasped by the fingers to thus move the dead locking member in opposite directions, and a member on the other end of said dead-locking means adapted to be engaged by the fingers to move said dead-locking device from locking to unlocking position but inaccessible to move said device from unlocking to locking position.

2. In a latch structure of the class described, the combination of an escutcheon for attachment to one side of a door, a rotatable knob spindle extending through said escutcheon, a back plate secured to the inner side of said escutcheon, a hub member carried by said knob spindle and arranged between portions of said back plate and said escutcheon, a stop spindle extending through an aperture in said escutcheon, arranged parallel with the axis of said spindle and adapted to be shifted longitudinally in opposite directions, and a stop member on said stop spindle adapted to operatively engage and disengage said hub member to lock and unlock said knob spindle when said stop spindle is thus shifted.

3. In a latch structure of the class described, escutcheons for attachment to opposite sides of a door, a rotatable knob spindle extending through said escutcheons, a dead-locking device adapted to be shifted longitudinally to lock and unlock the spindle, a member adapted to be grasped by the fingers at one side of the door to thus shift said dead-locking device to lock and unlock the spindle, and a second member adapted to be engaged by the fingers at the other side of the door to shift said dead-locking device in a direction to unlock the spindle but inaccessible for engagement by the fingers to shift said device to lock the spindle.

ERNEST L. TEICH.