May 7, 1935. C. L. VAUGHN 2,000,264

LOCK

Filed Sept. 25, 1933

FIG. 1

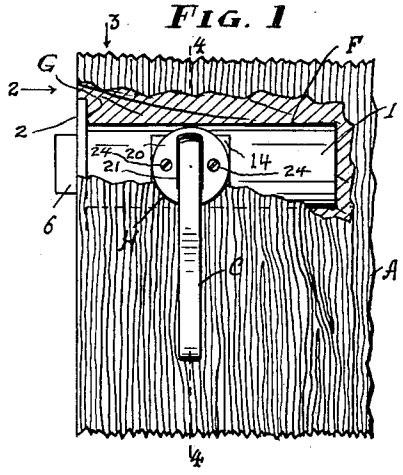


FIG. 2

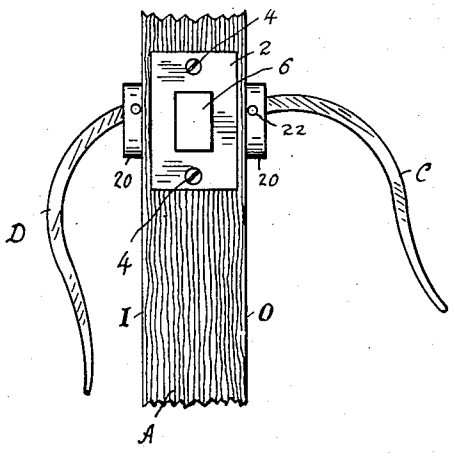


FIG. 3

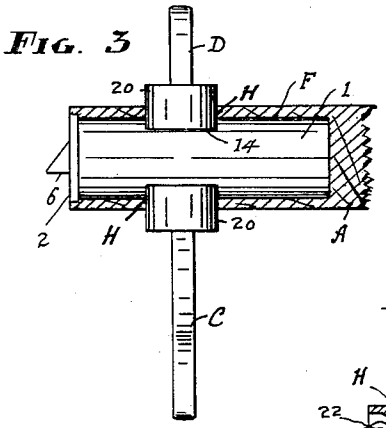


FIG. 4

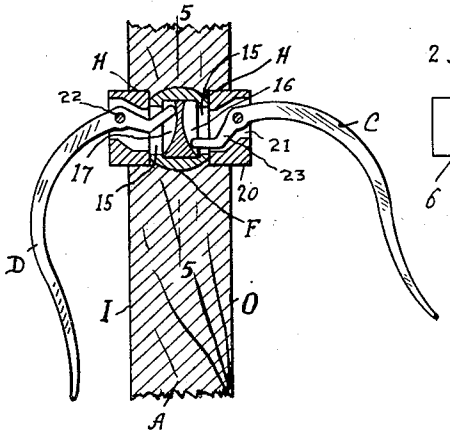
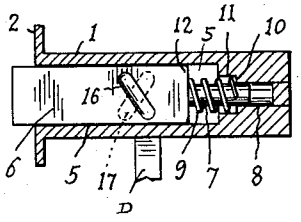


FIG. 5



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Patented May 7, 1935 2,000,264

UNITED STATES PATENT OFFICE

2,000,264

LOCK

Chester L. Vaughn, Yorktown, Ind.

Application September 25, 1933, Serial No. 690,845

1 Claim. (Cl. 292—169)

This invention relates to improvements in latch devices, its object being to provide a latch which is operative by a pushing movement or a pulling movement of the handles thereof. Other aims of the invention are to provide improvements of the character stated which are economical of manufacture, durable, and not liable to get out of order or repair.

The above named objects, as well as other and more specific purposes of the invention, are accomplished by, and my invention is embodied in the new construction, combination and arrangement of parts described in the following specification and illustrated in the accompanying drawing.

The several parts of the invention are identified by suitable characters of reference applied to them in the different views in the drawing, in which—

Figure 1 is a side view of my improved latch device in installed position, a fragmentary portion of the door structure being shown.

Figure 2 is an edge view of Figure 1 as seen in direction of arrow 2.

Figure 3 is a top plan view of Figure 1, in the direction of arrow 3.

Figure 4 is a transverse cross section view taken on line 4—4 and as seen in direction of the arrow 2 in Figure 1.

Figure 5 is a vertical longitudinal sectional view taken on the line 5—5 in Figure 4.

The casing 1, circular in cross section and having the suitable face plate 2, is adapted to be disposed in a bore provided therefor in the door structure A, and to be made fast in its position as by usual screws 4.

In a longitudinal guideway 5 which is rectangular in cross section, a latch bolt 6 is slidingly retained. Its rear end portion 7 is slidingly received in a suitable bore 8. By a helical spring 9 whose one end has bearing against the seat 10 of a counterbore 11 and whose other end bears against the shoulder 12 of the said latch bolt, the latter is urged to projected position. At a suitable distance from the face plate 2, a vertical offset 14 is provided in each side of the casing. The function of openings 15 and 15 and the opposite sides of the casing at the said offsets, will be presently referred to. In the opposite sides of the latch bolt and at positions in registration with said openings 15 and 15, are similar cam grooves 16 and 17. Whereas the angle of inclination of one cam groove is the same in degree as the angle of inclination of the other, the direction of incline of one came groove is opposed to the direction of incline of the other cam groove.

A handle assembly is provided for each side of said casing 1. These assemblies being similar, a description of same in the singular is deemed sufficient. A head block 20 which is circular in cross section, has a central opening 21. A hand lever which is of curvature substantially as illustrated in Figures 2 and 4, and which is fulcrumed on a cross pin 22 has its inner end 23 of the peculiar formation as shown. Cap screws 24 and 24, loose in said head block 20, when screwed into threaded holes therefor in the side of the casing, hold the head block securely united with the said casing 1.

It will be understood that when placing the head blocks in position, the latch bar is pressed inwardly sufficiently that the noses of the inner ends 23 of the hand levers, are received in the ends of the opposed cam grooves 16 and 17. The said hand levers now occupy positions related to each other, as shown in Figure 4.

For convenience in description hereinafter, of the operation of the invention, one of these hand levers is designated as handle C, and the other is designated as D. The outside face of the door A, is indicated by O, and the inside, by I. Whereas the latch bar is moved retractively when either one of the hand levers is operated, its movement projectively (by the pressure of spring 9) is limited, as will be presently referred to.

My improved latch device, in form as supplied to the trade, consists of the casing assembly, and the two handle assemblies. The casing assembly comprises the casing 1, the bolt 6, and the spring 9. Each of the handle assemblies comprises a head block 20, the handle lever pivotally retained therein, and fastener screws 24.

Preliminary to installing the device, a main bore F and a recess G of suitable dimensions, are provided in the door structure. Through opposite faces of the door structure, cross bores H and H that open into the said main bore, are provided.

Installing the invention consists in inserting the casing assembly into the bore F and applying the fastener screws 4. The head blocks 20 are then disposed in the side bores H, the latch bolt being pressed to retracted position wherein the noses of the hand levers click into the cam grooves. Then with the driving home of the fastener screws 24 the installation is complete, the handle C being at raised position (to be operated by pushing), and the handle D being

at lowered position (to be operated by pulling).

Operating my improved latch device, in entering the room, consists merely in the pushing of handle C. In this action, the rising nose of said handle, moving in its cam groove 16 moves the latch bolt to the retracted position. Upon release of the said handle, the latch bolt is returned to projected position by the urge of spring 9. Operating the latch, in leaving the room, consists in pulling the handle D. In this action, the lowering nose moving in its cam groove 17, moves the latch bolt to retracted position. Upon release of the said handle, the latch bolt is returned to its projected position in the manner as above described.

Whereas my invention is illustrated herein in the preferred form of embodiment, and the structural details are of form and arrangement suitable for ordinary needs, it will be understood that the invention lends itself to minor modifications and changes without departing from the principle or spirit of the invention.

What I claim as my invention, is—

A latch device of the kind described, consisting of a casing assembly comprising a casing adapted to be inserted and secured in a bore therefor in the door, said casing being provided with opposed lateral openings, and having a latch bolt slidingly retained therein, there being a cam groove on each side thereof, said cam grooves being opposed in their angles of incline, a spring in the casing to urge the latch bolt to projected position, a pair of hand lever assemblies each comprising a head block and means to removably secure same to the sides of the casing at the lateral openings thereof, and a hand lever pivotally mounted in each head block the inner end of said lever being directly engaged in a cam groove of the latch bolt.

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