April 19, 1932. H. E. WOERNLE 1,854,917

LOCK AND LATCH

Filed Oct. 14, 1929

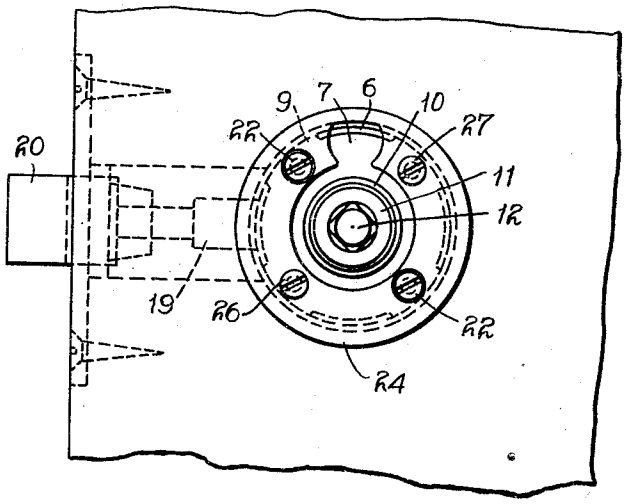

Fig. 1.

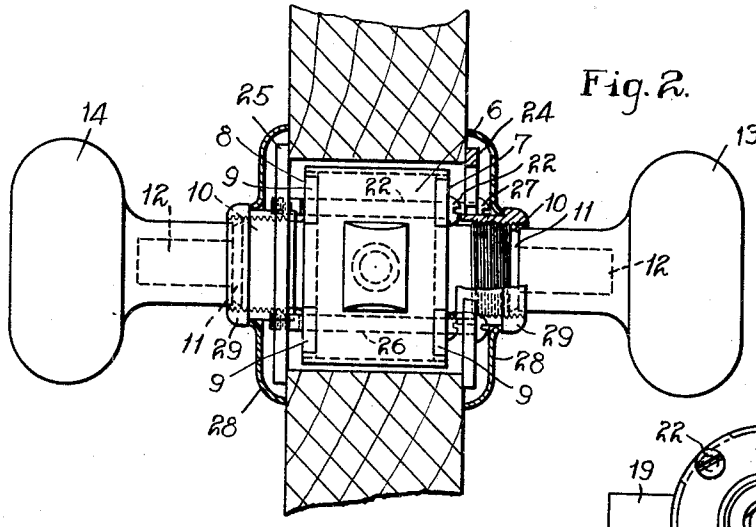

Fig. 2.

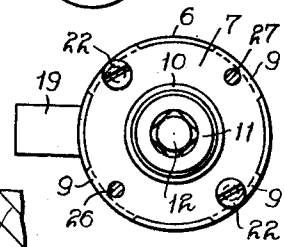

Fig. 4.

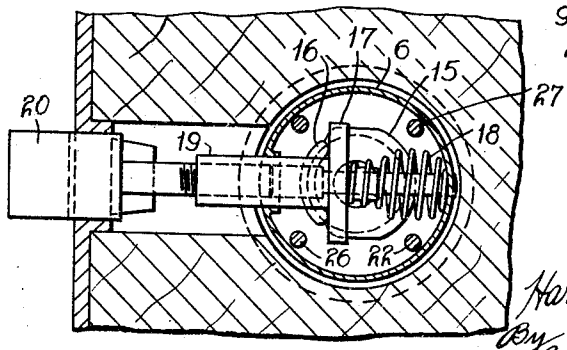

Fig. 3.

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Patented Apr. 19, 1932 1,854,917

UNITED STATES PATENT OFFICE

HARRY E. WOERNLE, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO McKINNEY MANUFACTURING COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

LOCK AND LATCH

Application filed October 14, 1929. Serial No. 399,528.

My invention relates to lock and latch structures, and more particularly to means for anchoring or holding lock and latch casings in position upon a door.

One object of my invention is to provide anchoring mechanism for lock and latch housings that can be conveniently applied and which will be effective to securely hold a housing in position within a door.

Another object of my invention is to provide holding means of the character described which will rigidly hold a housing or casing against displacement in directions parallel to the plane of the door, but which will permit of adjustments of the housing transversely of such plane.

Still another object of my invention is to simplify and improve generally the mounting in doors of latch and lock housings.

The invention is shown in the drawings as employed in connection with a latch structure of the general type of that disclosed in Patent No. 1,720,636, issued July 9, 1929, to W. E. Wread, but is capable of use also in connection with various other forms of latch and lock structures.

One manner in which my invention may be practised is shown in the accompanying drawings wherein Figure 1 is a side elevational view of a portion of a door, showing the latch structure in place; Fig. 2 is a sectional view of the structure of Fig. 1, looking from the front thereof; Fig. 3 is a sectional view taken in the plane of the door, and Fig. 4 is an end elevational view of the latch housing.

The latch housing consists of a cylindrical shell-like portion 6 and end plates 7 and 8. The end plates have tongue-like portions 9 that extend into recesses in the ends of the shell 6, to prevent relative rotative movement of the end plates and the shell. Each of the end plates 7 and 8 is provided with a hub-like extension 10 that is exteriorly threaded adjacent to its outer end. A bearing 11 extends through each of the hubs 10 and has a spindle portion 12. An inner knob 13 is secured to one of the spindles 12 and an outer knob 14 to the other spindle.

The inner ends of the spindles 12 carry discs 15, each of which has a cam or roll-back portion 16 for retracting a cross head 17 upon rotation of either of the knobs, as set forth in said patent. The cross head 17 is urged forwardly by a spring 18 and has a latch bolt carrier 19 that extends through the forward side of the shell 6. A latch bolt 20 has screw-threaded connection with the carrier 19.

Various other forms of latch or lock mechanism may be substituted for the operating parts just described, as such parts in themselves do not constitute a feature of the present invention.

The plates 7 and 8 are held in interlocking engagement with the shell 6 by means of screws 22, the plates being easily removable to permit insertion of the retracting mechanism into the housing.

In order to fasten the housing to the door, I provide clamping or anchoring plates 24 and 25. Clamping screws 26 and 27 extend through the plate 24 and loosely through holes in the end plates 7 and 8. These screws have threaded engagement with the plate 25 so that the plates 24 and 25 may be drawn into tight engagement with the sides of the door. Since the screws 26 and 27 extend through the end plates, the housing 6 can have no movement relative to the plates 24 and 25 in directions parallel to the plane of the door, but the housing may be slid longitudinally of these screws or bolts, which serve as guide rods, to permit lateral adjustment thereof within the door so that the bolt carrier 19 can be positioned at any desired point between the sides of the door.

When the latch housing has been positioned laterally of the door, it is maintained in such position by means of finish plates 28 and nuts 29 threaded over the respective hubs 10. The finish or face plates 28 serve to conceal the end plates 24 and 25 and the clamping screws 26 and 27. The nuts 29 are screwed up against the plates 28 to hold them in clamping engagement with the sides of the door. The latch housing is thereby held against displacement transversely of the door and at any desired position of adjustment with respect to the plane of the door.

The screws 26 and 27 are shown as extend-

ing from the inside of the door to the outer side thereof, so that if the outer nut 29 and the face plate 28 be removed, the screws 26 and 27 cannot be manipulated from the outside of the door, thus preventing disassembly of the mechanism from the outside by an unauthorized person.

While I have shown and described a present preferred embodiment of the invention, it is to be distinctly understood that the same is not limited thereto, but may be otherwise variously embodied within the scope of the following claims.

I claim as my invention:—

1. The combination with a latch housing, of means for mounting the housing in an opening through a door, comprising plates, means for securing said plates to the sides of the door, and means carried by said plates and adapted to extend through the door for supporting the latch housing against movement in directions parallel to the plane of the door, but permitting adjustment thereof transversely of the door.

2. The combination with a latch housing, of means for mounting the housing in an opening through a door, comprising plates, means for securing said plates to the sides of the door, guide rod means carried by said plates for supporting the latch housing against movement in directions parallel to the plane of the door, but permitting adjustment thereof transversely of the door, and means for fastening the housing in positions of transverse adjustment.

3. The combination with a latch housing, of means for mounting the housing in an opening through a door, comprising a device having a portion adapted to pass through the housing for firmly supporting said housing against movement in directions parallel to the plane of the door, and means permitting adjustment of the housing transversely of the door.

4. The combination with a latch housing, of means for mounting the housing in an opening through a door, comprising clamping plates, and screws for holding said plates in clamping engagement with the sides of the door, the said screws extending through the housing.

5. The combination with a latch housing, of means for mounting the housing in an opening through a door, comprising clamping plates, and screws for holding said plates in clamping engagement with the sides of the door, the said screws extending through the housing and having slidable engagement therewith.

6. The combination with a latch housing having hub-like extensions, of means for mounting said housing in an opening through a door, comprising anchoring plates, means for securing said plates to the door, means carried by said plates and having a portion adapted to enter the housing for supporting the housing against movement in directions parallel to the plane of the door, but permitting movement thereof transversely of the door, stop means carried by each of said hub extensions and engaging a side of the door, and means for effecting adjustment of one of said stop means in an axial direction.

7. The combination with a latch housing having hub-like extensions, of means for mounting said housing in an opening through a door, comprising anchoring plates, means for securing said plates to the door, guide rod means carried by said plates for supporting the housing against movement in directions parallel to the plane of the door, but permitting movement thereof transversely of the door, stop means carried by each of said hub extensions and engaging a side of the door, and means for effecting adjustment of either of said stop means in an axial direction.

8. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and means adapted to engage the latch structure and adapted to engage the door to position the latch structure in the opening adjustably transversely of the door while preventing substantial movement of the latch structure parallel to the plane of the door.

9. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and means adapted to engage the door having a portion adapted to extend transversely therethrough in slidable engagement with the latch structure to position the latch structure in the opening adjustably transversely of the door.

10. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and means cooperating with the latch structure and door for positioning the latch structure in the opening and having a member extending transversely of the door and through the latch structure, such member being adapted to be applied from one side only of the door and being arranged so as to be incapable of manipulation from the opposite side of the door.

11. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and screw means cooperating with the latch structure and door for positioning the latch structure in the opening and lying in guiding relationship to the latch structure whereby such structure may be adjusted therealong, such screw means extending substantially through the door and being adapted to be applied from one side only of the door and arranged so as to be incapable of manipulation from the opposite side of the door.

12. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, positioning means on opposite sides of

the latch structure, and screw means cooperating with the positioning means for positioning the latch structure in the opening and lying in guiding relationship to the latch structure whereby such structure may be adjusted therealong, the positioning means being constructed to receive the screw means from one side only of the door, the latter being arranged so as to be incapable of manipulation from the opposite side of the door.

13. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, anchor means adapted to engage the door at the respective extremities of such opening, and guide means cooperating with the anchor means for adjustably guiding the latch structure transversely of the door out of contact with the anchor means.

14. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, anchor means adapted to engage the door at the respective extremities of such opening, and guide means extending between the respective anchor means for adjustably guiding the latch structure transversely of the door.

15. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and positioning and guiding means disposed in positioning and guiding relationship to the latch structure, the latch structure and positioning and guiding means being adapted for adjustable movement as a unit generally parallel to the plane of the door and the positioning and guiding means being adapted to be fixedly positioned with respect to the door while leaving the latch structure adjustable with respect thereto and transversely of the door.

16. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, anchor means adapted to engage the door at the respective extremities of such opening, and guide rod means connected with the respective anchor means and extending in guiding relationship with respect to the latch structure whereby the latch structure is transversely adjustable with respect to the door.

17. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and a positioning and centering device having means adapted to engage the door at opposite sides and connecting means for adjustably positioning the latch structure with respect to the door, the positioning and centering device being adapted to be brought into fixed relationship with respect to the door as a unit whereby proper positioning is facilitated.

18. Latch mechanism, comprising a latch structure adapted to enter an opening in a door, and a positioning and centering device having means adapted to engage the door at opposite sides and connecting means serving as guides for the latch structure, the positioning and centering device being adapted to be brought into fixed relationship with respect to the door as a unit by operation of said connecting means to draw said door engaging means toward each other and into engagement with the door.

In testimony whereof I, the said HARRY E. WOERNLE have hereunto set my hand.

HARRY E. WOERNLE.