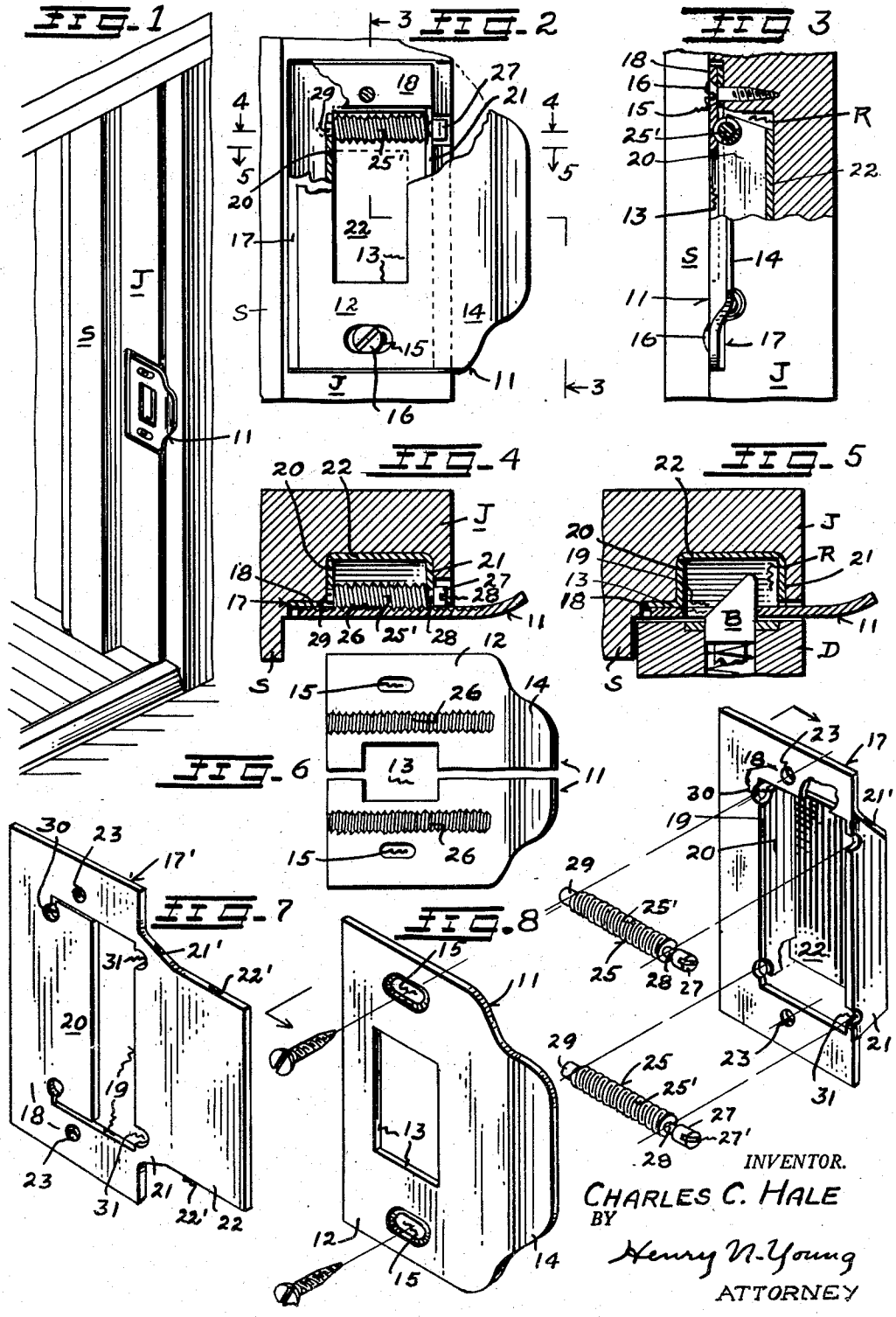
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LATCH PLATE MOUNTING

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LATCH PLATE MOUNTING

Charles C. Hale, Vallejo, Calif., assignor, by decree of distribution, to Eileen N. Hale

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The invention relates to the mounting in a doorway of a latch plate in such a manner that the bolt-engaging edge of the bolt-receiving plate opening may have an in or out adjustability with respect to the doorway.

As is well known, a closed hinge-mounted door having a securing bolt extending laterally from its free edge into a bolt-receiving opening of a latch plate mounted on a jamb of the doorway may annoyingly rattle in its place unless the door engages the stop on the jamb while the bolt engages the outer edge of the bolt-receiving latch-plate opening. Accordingly, it is a present general object to provide a means for so mounting a latch plate on a door jamb providing a stop that positive in or out adjustments of the latch plate may be made while the closed door engages the stop.

A more specific object is to provide a particularly simple and effective screw means for positively and adjustably setting the latch plate in its preferred operative position on a door jamb in a minimum time.

A further object is to provide a particularly simple and effective mounting device for the adjusting screw means.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth or be apparent in the following description of typical embodiments thereof, and in the accompanying drawings, in which,

Figure 1 is a perspective view showing the latch plate mounting of my invention as operatively associated with a wooden jamb of a doorway opening.

Figure 2 is an enlarged face view of the latch-plate installation of Figure 1, portions of the structure being broken away to show certain elements disposed behind the latch plate in cooperative relation therewith.

Figure 3 is a stepped and partly sectional view taken at the broken line 3—3 in Figure 2.

Figure 4 is a plan section taken at the line 4—4 in Figure 2.

Figure 5 is a plan section taken at the line 5—5 in Figure 2, and showing a latch bolt cooperatively engaged with the mounted latch plate.

Figure 6 is a rear-face fragmentary view of the latch plate.

Figure 7 is a perspective view of a preferred flat blank arranged for its shaping to provide a latch plate backing member of the mounting means.

Figure 8 is an exploded view showing the latch plate and adjusting screws and plate-backing member in transversely spaced relation to their positions in their cooperative assembly.

As particularly shown in Figures 1 to 5 inclusive, a latch plate 11 is disclosed as mounted at an upright wooden side jamb J of a doorway opening at which a hingedly mounted door D is operative as a closure while its free edge portion engages a usual stop mold or strip S provided on the jamb. The latch plate 11 is of a usual outline having a flat rectangular portion 12 provided with a bolt-receiving opening 13, and having a usual striker lip 14 extending from one edge thereof in angular relation to

it for effecting a wedged-back displacement of a spring-pressed bolt B of a latch or lock extending from the opposed edge face of the door D for its operative engagement in the latch-plate opening 13 when the door closes the doorway opening. Screw-receiving slots 15 are provided in and across the plate portion 12 at upper and lower parts thereof respectively disposed above and below the opening 13, said slots being arranged to receive wood screws 16 to engage the jamb J through them for securing the latch plate 11 in place on the jamb after its placement in desired adjusted relation to the jamb.

It will now be noted that the jamb J is provided with a usual recess R into which the operatively disposed bolt B may freely extend, with said recess shown as generally rectangular and more or less lined at its upright sides by portions of a member 17 which is arranged to back the mounted latch plate 11 and to be utilized in the fore-and-aft adjustment thereof in a manner to be described. As is particularly illustrated, the member 17 provides a generally U-shaped flat plate portion 18 having its opening 19 generally formed as the mouth of the recess R of the jamb and being wider and longer than the latch plate opening 13, with flat portions 20 and 21 of the member extending transversely inwardly from the rear and front edge lines of the opening 20 in perpendicular relation to the portion 18 for disposal opposite the rear and front sides of the recess R.

As particularly shown, a flat lateral extension 22 of the flat front portion 21 of the member 17 is disposed rearwardly from the inner edge of the portion 21 opposite the bottom of the recess R which extends solely between the top and bottom levels of the opening 19, the extension 22 being of appropriate length and having its top and bottom edges 22′ connected to the portion 21 by sloping edges 21′ at the top and bottom of the latter portion for providing an integral connection of the portion 21 with the portion 18 opposite the adjacent corners of the opening 20. The present member 17 may be shaped from the flat blank 17′ shown in Figure 7 in which the portions 18 and 20 and 21 and 22 are indicated before the shaping of the member 17 for the disposal of its parts 20 and 21 and 22 within the recess R at which it may be secured to the jamb J by the application of the screws 16 through transverse holes 23 provided through the portion 18 above and below the opening 20 while the screws are disposed through the latch-plate slots 15. As shown, the assembly of the latch plate 11 and portion 18 is countersunk in the opposed face of the jamb J.

While a tightening installation of the mounting screws 16 engaging the jamb J through the latch-plate slot 15 and the holes 23 of the portion 18 of the member 17 is arranged to ultimately secure the latch plate in adjusted position upon a mounting door jamb J, the present device provides a desirable positive means for effecting the adjusted positioning and a prefixed setting of the adjusted latch plate generally independently of said screws. As shown, the present latch-plate adjusting means essentially comprises worm screws 25 mounted on the member 17 in swiveled relation thereto and in parallel relation to its portion 18 and having their threads complementarily engageable with opposed racks 26 provided at the inner face of the latch plate 11. Preferably, and as shown, the worm screws 25 are operative above and below the opening 19 of the member 17 in mutually parallel lines which are perpendicular to the plane of the doorway, the heads 27 of the worm screws 25 being exposed for their turning engagement by an appropriate tool at notches R′ connecting the jamb recess R with the outer jamb edge at the jamb face portion behind the latch plate. While the present worm-screw heads 27 are shown as being provided with cross slots 27′ for receiving the bit of a screwdriver, it will be understood that said heads might be

formed for the application of other screw-turning tools thereto.

Having the member 17 and latch plate 11 mounted opposite a jamb recess R with the screws 16 slightly loosened to permit a sliding movement of the mounted latch plate between their heads and the backing portion 18 of the member 17, the application of an appropriate turning tool to the worm heads 27 provides for a positive adjustment of the latch plate position while the bolt-carrying door D is closed, whereby to facilitate positive adjustments of the latch plate such that the projected bolt B may be so close to the front edge 13' of the plate opening 13 that a rattling of the bolt-secured closed door may be prevented. When a latch plate has been adjusted to its best operating position by the use of the upper and lower worm screws 25 engaging the racks 26, a screwed-in tightening of the screws 16 complements and completes the fixing of the latch plate to the jamb by clampedly engaging the latch plate and the portion 18 of the member 17 between the screw heads and the jamb in their finally set and relatively adjusted positions. It will be particularly understood that the present device for adjusting the latch plate on the jamb while the cooperating door is closed has marked time-saving and accuracy advantages over the usual trial-and-error method of fitting and securing a latch plate while the associated door is alternately closed and opened.

It will now be particularly noted that each worm screw 25 is formed to provide a trunnion portion 28 between its terminal head 27 and its uniformly threaded part 25', and is further provided with a reduced trunnion portion 29 extending from the other end of its part 25'. The trunnions 28 and 29 of a worm screw 25 are cooperatively utilized to mount the screw for its plate-adjusting rotation by their direct journaled engagement in aligned bearings provided in the portions 20 and 21 of the member 17 at the edges of said portions which define the rear and front sides of the opening 19 in the member, said bearings most simply comprising coaxial notches 30 and 31 provided in the respective said portions when a flat blank 17' is cut. It will be noted that the teeth of a rack 26 comprise sections of a spiral thread corresponding in form and pitch to that of the worm screw 25 to engage the rack, and that each rack is countersunk in the back face of the latch plate 11, as by operating a side of a threading tap against and along the inner face of the plate; in this manner, a desirable flat contact of the back face of the latch plate 11 with the opposed part of the flat outer face of the backing plate portion 18 of the member 17 is provided for.

Referring particularly to Figure 7, it will be noted that the bearing notches 30 for receiving the end trunnions 28 of the worm screws 25 may be conveniently provided as holes extending transversely through the blank 17' near the ends of the line along which the portion 20 is to be bent out of the plane of the backing plate 18 to dispose the portion in its transverse relation to the backing plate. The notches 31 of the portion 21 extend into the opening-defining edge of the portion whereby they may receive the trunnions 29 when the portion 21 of the member 17 is bent transversely out of the plane of the portion 18 to extend perpendicularly from said plane. While the bearings for the trunnion portions of the adjusting screws 25 might be otherwise provided, as by holes in ears extending transversely from the backing-plate portion 18 of the member 17, the present arrangement particularly facilitates the journaled mounting of the worm screws 25 in the member. It will also be understood that the portion 22 may be omitted and that the portions 20 and 21 need only extend far enough from the backing plate portion 18 to provide bearings for mounting the worm screws 25, as from the portion 18, if a lining of the jamb recess R is not desired.

From the foregoing description taken in connection with the accompanying drawings, the advantage of the present latch plate mounting will be readily understood by those skilled in the art to which the invention appertains. While I have shown and described an arrangement which I now consider to be a preferred embodiment of my invention, I desire to have it understood that the showings are primarily illustrative, and that such changes and developments may be made, when desired, as fall within the scope of the following claims:

I claim:

1. In a latch plate assembly for mounting on a jamb of a doorway opposite an outwardly facing recess therein, a latch plate providing a bolt-receiving opening and a slot for receiving a clamp screw for guidedly mounting the latch plate on a jamb in laterally adjusted relation thereto and having a rack provided in a segmental groove extending in and along its rear face, a backing plate directly engaging the rear face of the latch plate and provided with an opening complementarily receiving the aforesaid clamp screw, and a worm-screw carried by the backing plate solely in swiveled relation to it and having its thread directly and constantly engaging the rack of the latch plate for effecting and maintaining a relative lateral adjustment of the latch plate with respect to the backing plate and the jamb.

2. In a latch plate assembly for mounting on a jamb of a doorway opposite an outwardly facing bolt-receiving recess extending from a jamb face, a latch plate having a flat inner face and providing a bolt-receiving opening and a slot for receiving a clamp screw for guidedly mounting the latch plate on the jamb in laterally adjusted opposed relation to said jamb face and having a rack provided in a segmental groove extending into it from and along its inner face, a backing plate disposed opposite the rear face of the latch plate and provided with an opening complementarily receiving the aforesaid clamp screw while the same operatively engages the jamb, and a worm-screw carried solely by the backing plate in swiveled relation to it and having its thread directly and constantly engaging the rack of the latch plate for effecting and maintaining a relative lateral adjustment of the latch plate with respect to the backing plate and the recessed jamb face.

3. In a latch plate assembly for mounting on a jamb of a doorway opposite an outwardly facing bolt-receiving recess therein, a latch plate providing a transverse bolt-receiving opening and a rack at its rear face arranged for its engagement by the thread of a worm screw, a backing plate providing a bolt-receiving opening disposed opposite the rear face of the latch plate with its said opening registered with said latch plate opening and provided at opposite sides of the backing plate opening with transverse extensions disposed in said recess, means for holding said latch plate and backing plate in operative position on said jamb for their relative lateral adjustment, and a worm screw swiveled in and between said backing plate extensions at forward edge points thereof and having its thread directly cooperative with said rack of the latch plate for effecting and maintaining a relative lateral adjustment of the latch plate with respect to the backing plate and said jamb said worm screw being provided with a terminal turning head which is exposed for its turning by a suitable turning tool from the outer side edge of the jamb while the door is closed.

References Cited in the file of this patent

UNITED STATES PATENTS

769,770	Phelps	Sept. 13, 1904
839,556	Cuff	Dec. 25, 1906
1,005,914	Witman	Oct. 17, 1911
1,317,218	Plante	Sept. 30, 1919
1,563,667	Smith	Dec. 1, 1925

FOREIGN PATENTS

901	Great Britain	Jan. 21, 1885