Dec. 26, 1950 B. S. BERNHARD 2,535,981

DOOR HOLDER

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Fig. 1.

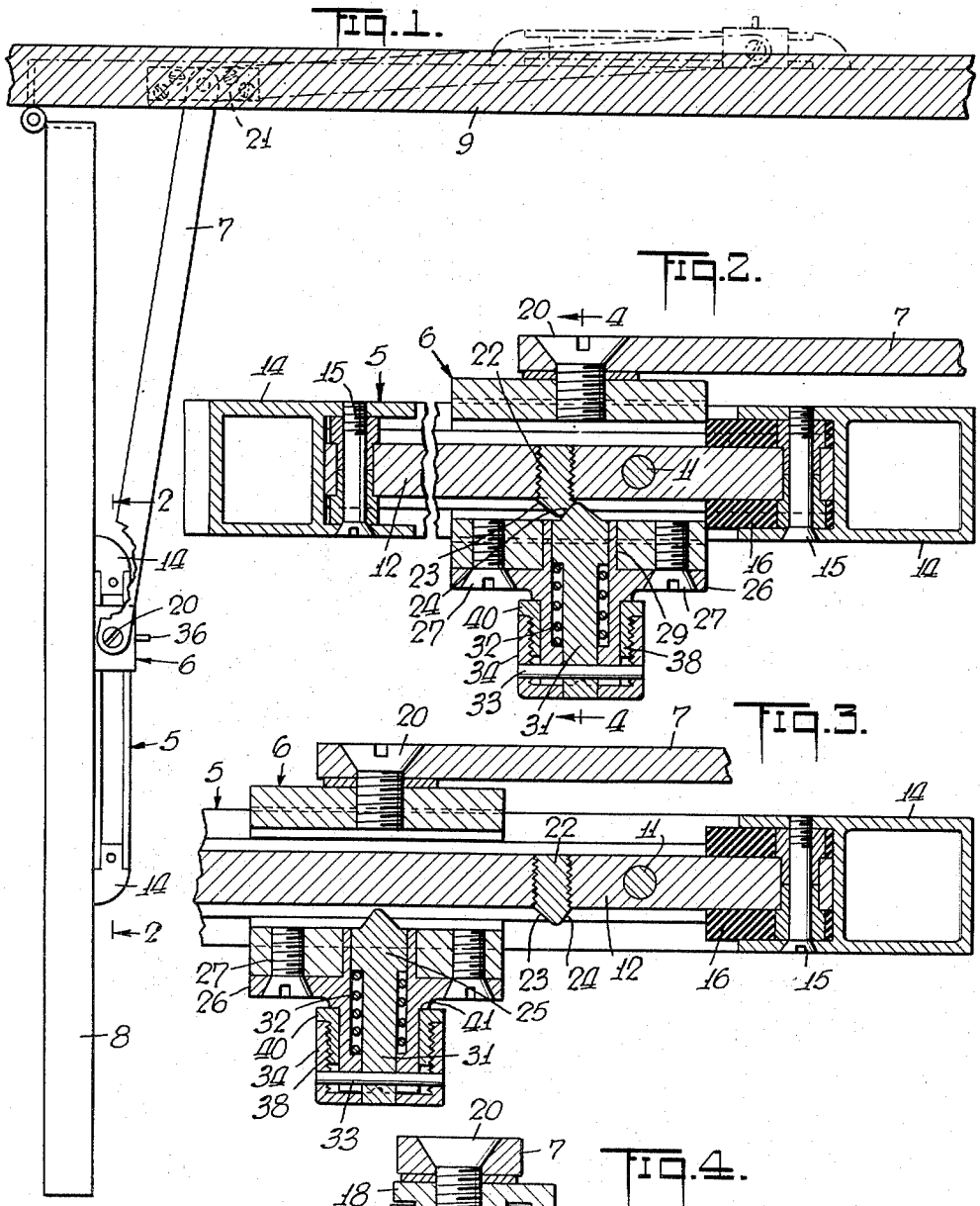
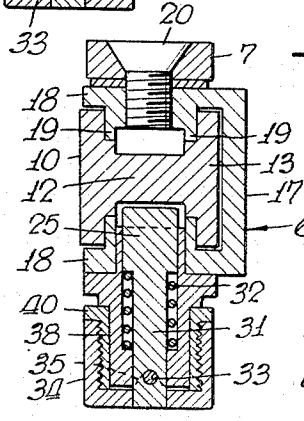


Fig. 2.

Fig. 3.

Fig. 4.



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FIG. 5.

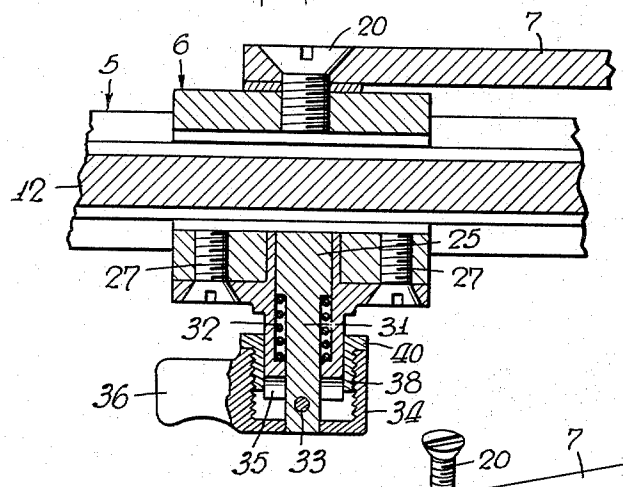


FIG. 6.

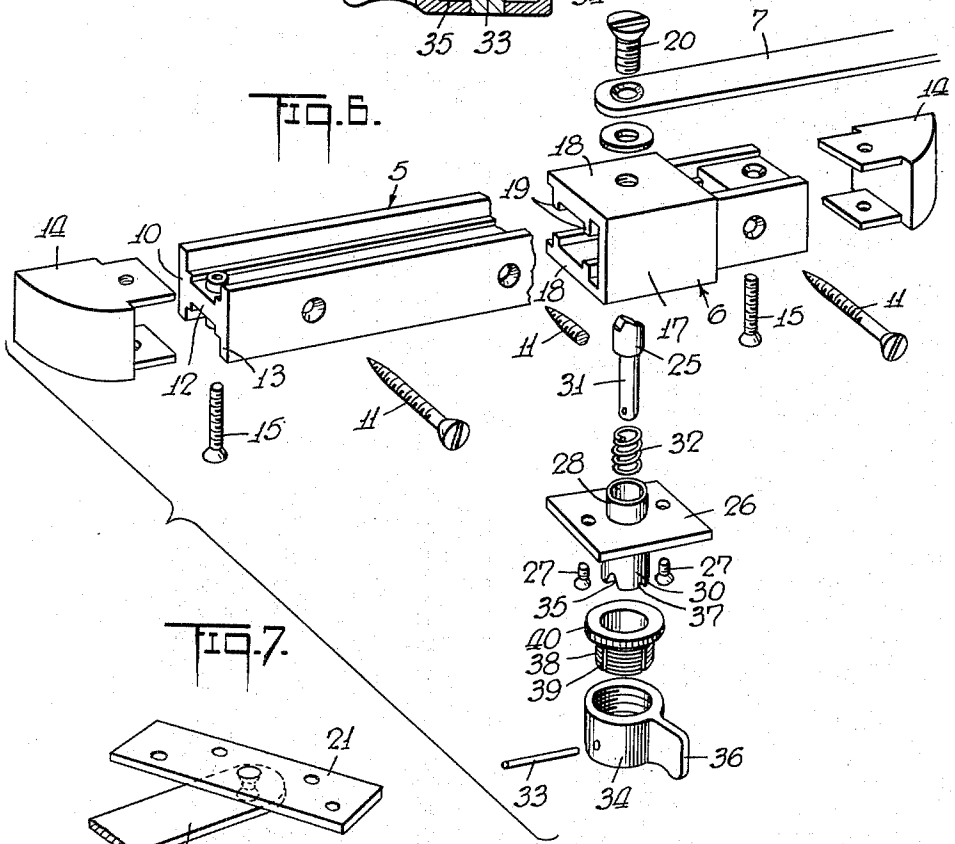


FIG. 7.

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DOOR HOLDER

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Application January 12, 1946, Serial No. 640,706

1 Claim. (Cl. 292—277)

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My invention relates to a door holder, particularly though not exclusively arranged as a so-called surface door holder.

Door holders include, in general, a track and a side, usually carried by the door, and an arm connected at one end to the slide and at the other end to a door lintel. The slide and track are provided with cooperating means for latching the slide in at least one position, whereby the door will be held in desired open or ajar position.

It is an object of the invention to provide an improved form of door holder.

It is another object to provide a door holder having an improved means for varying the degree of latching function of the holder.

Another object is to provide a door holder having improved means for rendering the latching function thereof inoperative.

It is another object to provide a door holder in which the movable parts of the latching means are carried by the slide rather than by the track.

Briefly stated, my invention in the preferred form includes a track with a slide slidable thereon. An arm is connected at one end to the slide. The door holder and arm are connected to a door lintel and to a door, and usually the track will be connected to the door.

In the specific form to be later described, the door holder is of the so-called surface type fitting the side of the door, rather than being mortised into the top of the door. Latching means are provided so as to latch the slide relatively to the track, whereby the door is held in desired open position. There are certain advantages in having a fixed latching abutment on the track and a movable latch carried by the slide, and such is the preferred form of the invention. However, in certain broader aspects of the invention the latching mechanism may be reversed. In complete form the invention includes means for varying the latching function of the door holder and also means for rendering the latching mechanism inoperative.

In the drawings which show, for illustrative purposes only, a preferred form of the invention—

Fig. 1 is a fragmentary plan view of a door and lintel showing my improved surface door holder in place;

Fig. 2 is an enlarged fragmentary view, taken substantially in the plane of the line 2—2 of Fig. 1 and showing the latching parts in latched position;

Fig. 3 is a view similar to Fig. 2 but showing the slide in a different position and the latching mechanism in unlatched position;

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Fig. 4 is a sectional view, taken substantially in the plane of the line 4—4 of Fig. 2;

Fig. 5 is a view similar to Fig. 3 but showing the latch on the slide moved to inoperative position;

Fig. 6 is an exploded view of the door holder, illustrating various parts in separated positions; and

Fig. 7 is a fragmentary detail showing the connection of the arm to the door lintel.

The door holder comprises, generally, a track 5 and a slide 6 slidably mounted thereon. An arm 7 is pivotally connected to the slide. The door holder parts are connected to a door 8 and to the door lintel 9. In the form shown, one end of the arm is pivoted to the lintel, while the track is carried by the door. In the preferred form illustrated, the track is in the form of a bar, preferably of metal, and of generally I-beam cross-section. One base or flange 10 of the I-beam track is secured to the face of the door as by means of screws 11—11. The web 12 of the I-beam extends out horizontally from the door, and the other flange 13 of the I-beam section extends vertically and is spaced from the door. If desired, end finishing pieces or cups 14 may be connected to the track as by means of screws 15, which may also serve to hold in place a rubber or other abutment 16 against which the slide 6 may abut when the door is in open position.

The slide 6 in the preferred form is of U-shape or channel cross-section, as shown particularly in Figs. 4 and 6. The slide preferably comprises the connecting web 17 and the inwardly directed legs 18—18 extending over the outer flange 13 of the track. If desired, the slide may have track-engaging flanges 19 for coaction with the flanges 13, to give stability and free-running action to the slide. The arm 7 is pivotally connected to the slide, as by means of a fastening screw 20, while the opposite end of the arm 7 is pivotally connected to a plate 21 secured to the door lintel. Thus, as the door is opened and closed, the slide moves back and forth on the track. Since the purpose of the door holder is to hold a door in open position, I provide latching means for latching the slide at at least one position on the track so that when the latching mechanism is engaged, the door will be held in desired position.

The latching mechanism preferably comprises a latch abutment and a movable latch. One of the latching parts is carried by the track, while the other latching part is carried by the slide. In the form illustrated, a latching abutment 22 is fixedly carried by the web 12 of the I-beam track and is provided at the approaching side

with an easy cam surface 23 and at the opposite side with a harsher latching surface 24. The latch 25 for coaction with the latching abutment 22 moves with the slide and may be carried in a separate unit attached to the slide.

In the form shown, I employ a plate 26, which may be fastened to the underside of the slide as by means of screws 27—27. The plate may have a sleeve projection 28 which passes through and fits in an aperture 29 through the bottom leg of the slide. The sleeve may project downwardly at 30. The latch 25 is of a size to fit within the sleeve 28 and is provided with a reduced tail 31 which passes down through an aperture in the cup bottom of the lower sleeve 30. The guide bore for the latch 25 in the sleeves may be considered as a counterbore, and a spring 32 fits between the bottom of the counterbore and a shoulder beneath the latch head 25 so as to continually urge the latch upwardly in position to coact with the latch abutment 23.

In the preferred form, I provide means for moving the latch to inoperative position. Such means preferably includes cam and follower mechanism for manual actuation. In the form illustrated, the tail 31 of the latch extends downwardly, and a cam follower in the form of a cross pin 33 passes transversely through the tail of the latch and is held in a cup sleeve 34 extending up over the sleeve 30. The lower end of the sleeve 30 is provided with opposed cam slots 35 for receiving the pin 33, whereby when the pin 33 is in the slots 35, the latch will be projected upwardly into operative position by means of the spring 32. This is the normal latching position. When it is desired to withdraw the latch from latching position so as to render the latching mechanism inoperative, the sleeve 34, carrying the pin 33, is rotated as by means of the finger-piece 36. The pin 33 then rides up on the sides of the cam grooves 35 and thus the latch 25 is withdrawn to inoperative position. Detent grooves 37 may be provided in the sleeve 30 for retaining the pin and so as to prevent accidental rotation of the sleeve 34.

In the preferred form I also provide means for adjusting the latching mechanism so as to vary the latching effect thereof. In the form illustrated, I employ a sleeve 38, which may be threaded interiorly of the cup sleeve 34 and is preferably arranged for tight frictional engagement therewith. Such frictional engagement may be induced as by splitting the sleeve 38 as shown at 39, and spreading the sleeve parts so as to increase the friction. The sleeve 38 may be provided with a knurled finger flange 40 so that it may be rotated by hand. The sleeve 38, which is thus carried by the cup sleeve 34, abuts against the underside of the plate 26, or an abutment surface 41 thereon, so as to limit the upward movement of the entire latch assembly under the influence of the spring 32.

It will be clear that when the sleeve 38 is rotated as by means of the finger flange 40, the cup sleeve 34, together with the latch 25, will be moved upwardly or downwardly, depending upon the direction of rotation of the sleeve 38.

Thus, when the latch 25 is moved downwardly, the extent of engagement between the latch and the latch abutment will be slight and the door will be held lightly. At the same time, the force required for latching engagement will be light. On the other hand, when the latch 25 is in its maximum projected position, the latching effect will be at the maximum and the greatest force will be required for engaging the latching parts.

It will be seen that I have provided a sturdy, simple form of door holder, which is easy to apply and without marring the door. It will further be seen that I have provided improved means for varying the degree of latching engagement for holding the door in open position. Simple and effective means have also been provided for readily rendering the latching mechanism inoperative.

In the preferred form, the adjusting mechanism and the means for rendering the latching mechanism inoperative are carried by the slide rather than by the track and may be assembled and disassembled without in anywise disturbing the track; in fact, the entire slide and associated mechanism may be readily slid off the end of the track when one of the finish cups (when they are employed) is removed.

While the invention has been described in considerable detail and a preferred form illustrated, it is to be understood that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

I claim:

In a door holder, a track, a slide slidable thereon, an arm connected to said slide, latching means between said slide and track, said latching means comprising a latching abutment and a latch for cooperation therewith, said latch including a tail, a manually actuable cup for actuating said tail, spring means and cam-and-follower means for moving said latch between operative and inoperative positions upon actuation of said cup, and means for adjusting said latch to vary the latching effect thereof and including a sleeve threaded into said cup and accessible for manual actuation, said sleeve including means for tight frictional engagement with said cup, whereby a selected operative position of said latch may be tightly held.

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