March 25, 1930. G. P. WILD 1,752,131

DOOR FASTENER

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Fig. 1.

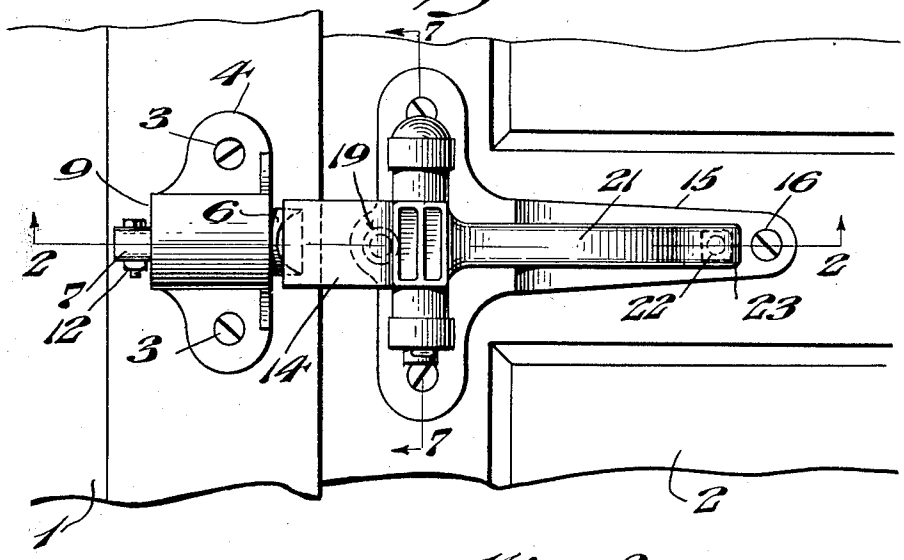
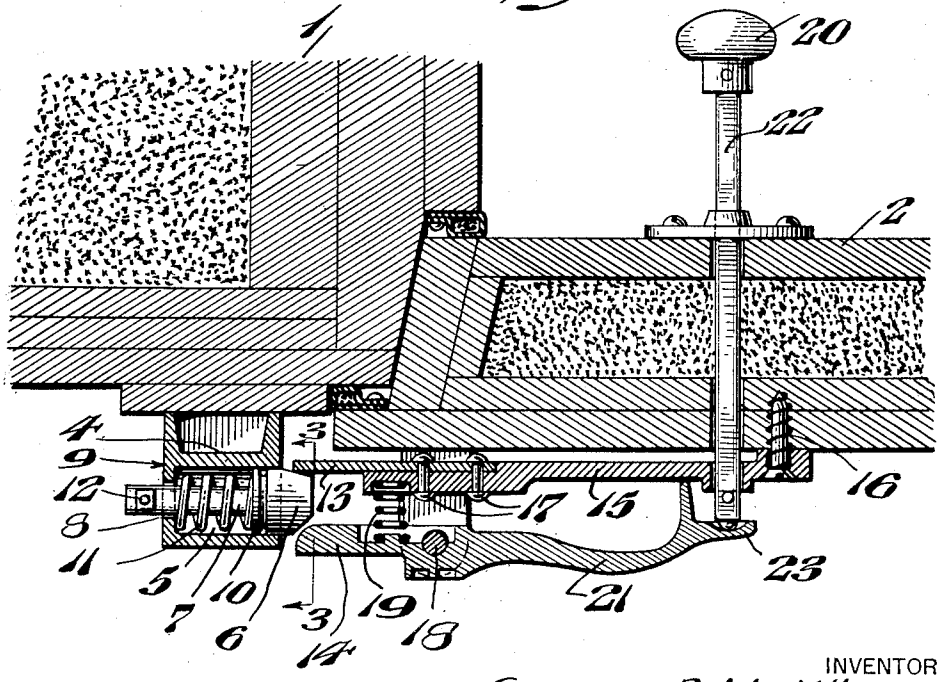


Fig. 2.



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Fig. 3.

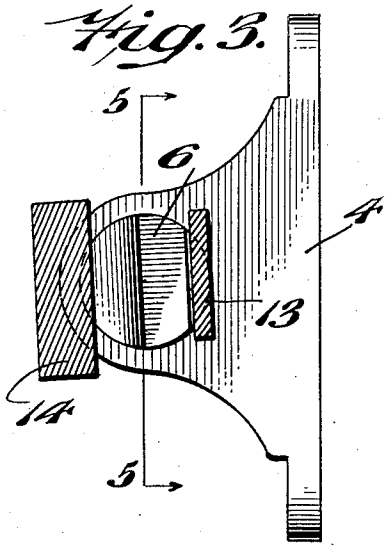


Fig. 4.

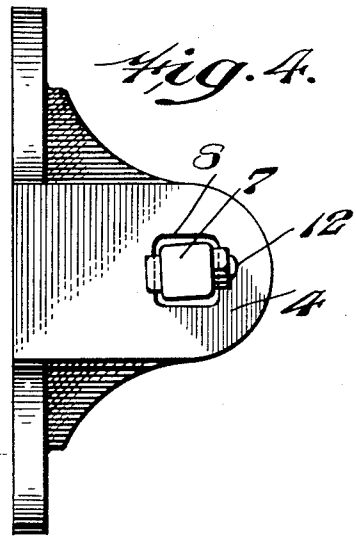


Fig. 5.

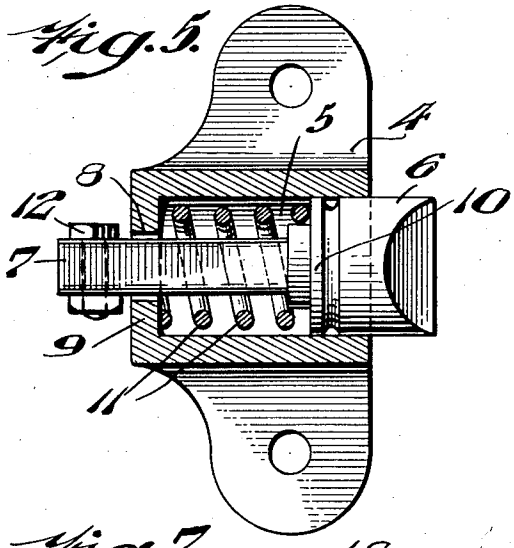


Fig. 6.

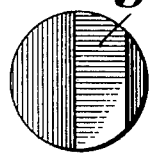
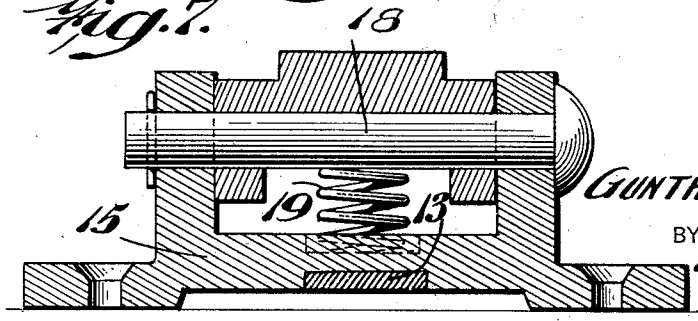


Fig. 7.



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UNITED STATES PATENT OFFICE

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DOOR FASTENER

Application filed January 5, 1928. Serial No. 244,568.

The invention relates, generally stated, to door fasteners, especially latch mechanism for refrigerator doors, cold storage room doors and the like as shown, described, and claimed in U. S. Letters Patent No. 1,637,168, issued to me under date of July 26, 1927.

The leading objects of the present invention are to provide a door fastener of the character stated in which is combined simplicity and efficiency of structure, simplicity in manipulation, quick and positive interlocking operation, cheapness of manufacture, and in which the spring pressed keeper is free to partially rotate about its longitudinal axis in order to take care of or accommodate inequalities between a door and door jamb.

Other and further objects reside in the provision of general details of construction and arrangement and combination of parts for attaining the results sought by said leading object.

Other and further objects not at this time more particularly pointed out will be hereinafter referred to.

The invention consists of the novel construction hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which:

Fig. 1, is a view in front elevation of latch mechanism embodying the invention.

Fig. 2, is a view in section taken upon the line 2—2 of Fig. 1.

Fig. 3, is a view in section taken upon the line 3—3 of Fig. 2.

Fig. 4, is an end view of the device.

Fig. 5, is a view in longitudinal section taken upon the line 5—5 of Fig. 3.

Fig. 6, is an end view of the keeper detached.

Fig. 7, is a view in section taken upon the line 7—7 of Fig. 1.

For the purpose of illustrating my invention I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

In the drawings, reference numeral 1 designates a door jamb, and reference numeral 2 designates a door hinged with respect thereto. A description will be given first of the keeper parts as carried by the door jamb and thereafter a description of the latching elements as carried by the door will be given. Fixed to the door jamb 1, as by the screws 3, is a housing or casing 4, best seen in Figs. 1, 2, and 5. This housing or casing has a longitudinal bore 5 fitted within which is a keeper 6. The rear wall 9 of the housing or casing is apertured as at 8, and fitted within the housing or casing 4 is a coiled spring 11 abutting against the wall 9 and normally pressing said keeper 6 toward the right in Figs. 1 and 2. The outer or nose part of the keeper is flat at its end with opposed portions which are inclined.

The keeper 6 has projected rearwardly therefrom in a horizontal manner a rod 7 of rectangular cross-section, see Fig. 4, which rod 7 projects through the rectilinear aperture or opening 8 in the wall 9 of casing 4. Between the end wall 9 of casing 4 and the rear face 10 of keeper 6 is the spring 11 which is coiled around the rod 7. The end of rod 7 which projects through the aperture or opening 8 of casing 4 is provided with a bolt and nut connection 12 to limit movement to the right, in Figs. 1 and 5, of the keeper 6. The particular function of the keeper 6, casing 4, spring 11, and rod 7 is to provide a con-

struction whereby the rod 7 has certain play in the housing or casing 4 by reason of the rectangular cross-sectional arrangement of the rod 7 and the rectilinear opening 8 in said casing. In other words, the rod 7 in its longitudinal, horizontal movement has sufficent play with respect to the housing or casing 4 whereby the rod 7 is free to move slightly around its longitudinal axis as clearly shown in Figs. 3 and 4. Thus, if, for instance, the door jamb 1 and the door 2 are slightly out of vertical alignment the door 2 in closing will efficiently latch with respect to the jamb 1 when the fixed detent 13 and the movable detent 14, as carried by the door 2, cooperatively engage the nose of the keeper. This is true because even though, for example, the door might be slightly out of alignment with the jamb, the door in closing by reason of the detents just referred to will tilt or turn slightly the keeper and its stem about its longitudinal axis so that an efficient interlock of parts may be obtained. In the connection, it is to be noted that the keeper 6 upon its inner end is cylindrical and fits a correspondingly cylindrical part of the casing 4, so that the keeper 6 is free to turn in the casing 4 in connection with the rod 7.

Taking up now the latching mechanism as carried by the door 2, and which cooperates with the keeper just described, it is to be noted that the fixed detent 13 is carried by the elongated plate 15 secured as at 16 to the door 2. This plate 15, as shown in Fig. 1, is substantially T-shaped. The fixed detent 13 is secured to this plate 13 by means of rivets 17 or equivalent securing means. Having hinged relation with the plate 15 as at 18 is the movable detent 14, which detent is best seen in Fig. 2. A coiled spring 19 is interposed between the plate 15 and the detent 14 in order normally to maintain the detent 14 free from the nose of the keeper 6, as clearly shown in Fig. 2. The stop 20 and adjacent part of the movable detent form a hand grip 21 so that to open the door the operator may grasp part 21 and pull outwardly upon the detent to thus move the bevelled end of the detent 14 inwardly to engage, ride over, and push outwardly the keeper 6. As the keeper moves to the left in Fig. 2, and as the operator still pulls upon the door 2, the fixed detent 13 rides outwardly over the receding end of the keeper and thus frees the door 2 for ready opening. It is thought that the closing operation of the device will be readily apparent without detailed description. When the door 2 is in latched position, as seen in Fig. 2, the door may be opened from within a refrigerating room or the like by pushing upon the knob 20 of rod 22 to move outwardly the end 23 of movable detent 14, and thus compress spring 19 and shift to the left in Fig. 2 the keeper 6.

What I claim, and desire to secure by Letters Patent, is:

1. A latch device of the character stated comprising a casing having a rectilinear opening therein, a keeper the nose of which has opposed bevelled edges, the major part of said keeper being mounted within said casing, a horizontally disposed rod of rectangular cross-section extended outwardly from said keeper nose and penetrating said rectilinear opening in said casing, means passing vertically through the end of said rod as projected beyond said casing for limiting longitudinal movement of said keeper, and a spring interposed between the inner end of said keeper nose and said casing.

2. A latch device of the character stated comprising a casing having a rectilinear opening therein, a longitudinally movable cylindrical keeper the nose of which has opposed bevelled edges, the major part of the said keeper being mounted within said casing, a horizontally disposed rod of rectangular cross-section extended outwardly from said keeper nose and penetrating said rectilinear opening in said casing said rod in its longitudinal movement having sufficient play with respect to said rectilinear opening to permit of slight movement around its longitudinal axis, means including a bolt and nut connection passing vertically through the end of said rod as projected beyond said casing for limiting longitudinal movement of said keeper, and a spring interposed between the inner end of said keeper nose and said casing.

3. A latch device of the character stated comprising a casing having a rectilinear opening therein said casing being carried by a door jamb, a keeper the nose of which has opposed bevelled edges, the major part of said keeper being mounted within said casing, a horizontally disposed rod of rectangular cross-section extended outwardly from said keeper nose and penetrating said rectilinear opening in said casing, means passing vertically through the end of said rod as projected beyond said casing for limiting longitudinal movement of said keeper, a spring interposed between the inner end of said keeper nose and said casing, a plate having a fixed detent carried by a door and normally adapted to abut against the inner bevelled face of said keeper, a spring pressed detent arranged to cooperate with said keeper to cause axial movement of said keeper in the event that said door and jamb are not in true vertical alignment, and means carried by said door for actuating said spring pressed or movable detent in order to release the fixed detent from the keeper, thereby opening the door.

4. A latch device of the character stated comprising a casing having a rectilinear opening in its outer end wall, a longitudinally movable cylindrical keeper mounted within

said casing, a horizontally disposed rod of rectangular cross-section extended outwardly from said keeper and penetrating said rectilinear opening, the cross-sectional area of said rod being appreciably smaller than that of said opening to permit play of said rod, means passing vertically through the projected end of said rod for limiting longitudinal movement of said keeper, and a spring interposed between the inner end of said keeper nose and said casing.

GUNTHER PHILIP WILD.