

June 8, 1926.

1,588,026

J. T. HILL

DOOR FASTENER

Filed Jan. 15, 1924

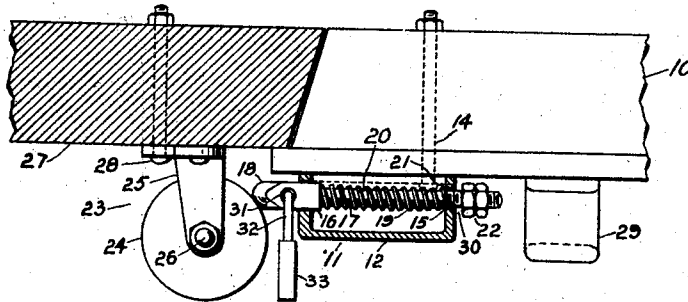


Fig. 1

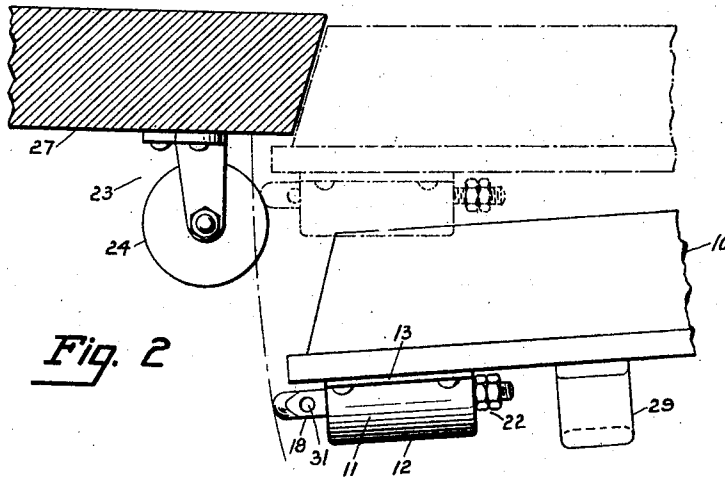


Fig. 2

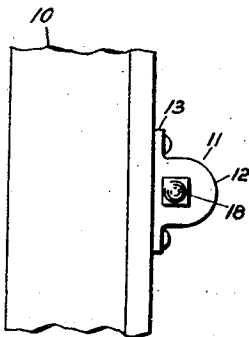


Fig. 4

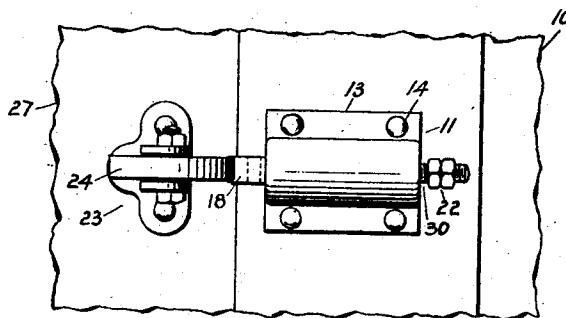


Fig. 3

INVENTOR
John T. Hill

BY

M. C. Frank
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN T. HILL, OF OAKLAND, CALIFORNIA, ASSIGNOR TO AUTOMATIC LOCK AND CLOSER COMPANY, OF OAKLAND, CALIFORNIA, A CORPORATION OF FLORIDA.

DOOR FASTENER.

Application filed January 15, 1924. Serial No. 686,448.

This invention relates to fasteners for doors, and especially to refrigerator and cold-storage room doors to hold the same tightly shut when their closing is desired.

Refrigerators and cold storage rooms are constructed air-tight, and doors to the same having ordinary latches or fasteners thereon are quite frequently left ajar with a resultant interchange of air, thus incurring a considerable rise of temperature in the refrigerator, which rise is undesirable and very detrimental to the contents of the refrigerator.

Refrigerators, as stated, are normally air-tight, therefore, when the door is closing, the air therein is compressed and the reaction of the compressed air causes the door to remain open slightly until actually closed by hand.

The primary object of this invention is to provide a fastener for refrigerator doors and the like, that will overcome the above objectionable features by positively shutting and holding the door in closed position, and yet permit the same to be easily opened at will.

Another object is the provision of a door fastener of extremely simple construction and having substantially but three working parts, namely, a bolt, spring and roller.

Another object is to provide the latch member of my invention with a novel arrangement of latch bolt and spring, which bolt when in engagement, is adapted to keep constant tension against the door, thus insuring a sealed closure of the same even when the door in due time shrinks away from the jamb, as the bolt when in wedging engagement never reaches its final at-rest position.

A further object made possible by my novel fastener arrangement, is to provide the bolt with a common padlock for locking the door when desired.

Other objects and advantages of this invention will appear with reference to the subjoined specification and the accompanying sheet of drawings, in which:—

Figure 1 is a top view, showing a portion of a refrigerator door and its jamb with my invention applied thereto and shown in closed and locked position. The jamb and part of the latch member of my device is shown in section.

Fig. 2 is a top view analogous to Fig. 1

showing the door in open position; the dot and dash lines indicate the door nearing the closed position and the working parts in engagement.

Fig. 3 is an elevation of the device in the closed position.

Fig. 4 is an edge view of the door showing the latch member of the fastener in place thereon with the latch bolt in the housing.

Referring to the drawings and the figures thereof: The number 10 indicates a door, such as a refrigerator door and is hinged in the ordinary manner to the door frame (not shown). Opposite the hinge side of the door is secured the latch member 11 of my invention. The latter member consists of a housing 12, preferably semi-cylindrical in shape with outwardly extending flanges 13, for its securement to the door as by bolts 14.

The housing is provided at its inner end with a round hole 15, and at its outer end with a square hole 16 in alignment with the former hole. 17 is a bolt adapted to fit and operate within the said holes; the head 18 thereof is squared to correspond with the square hole 16, and its inner end forms a shoulder against which a coil spring 19 abuts. Said coil spring encircles the shank of the bolt and is supported thereon and within the housing, and abuts against the inner face of the latter as at 21.

One end of the bolt is threaded and is provided with a nut and jam nut 22 which limits the outward travel of said bolt to its at-rest position as shown in full lines Fig. 2, and also provides an adjustment for the spring 19 which latter is of great strength.

The bolt when in engagement wedges the door tightly shut as shown in Fig. 1. In this position it will be observed that the bolt is not at its limiting position as shown by the clearance space 30; therefore, as the door shrinks in due time the bolt will still constantly wedge, as it still has the said clearance space to travel before it is at rest at its set limiting position. The bolt has a sufficient long-threaded portion to give a greater clearance if desired.

The engaging member of my invention is denoted in general by the number 23, and consists of a roller disc 24 supported within a bracket 25 on a shaft 26. The bracket is

secured to the face of the jamb 27 by bolts 28.

In Fig. 1 the spherical head of the bolt is shown in contact with the disc 24 and considerably back of it when viewed from the front. The outward pressure exerted by the coil spring 19 on the bolt 17, wedges the head of the latter tightly against the circumferential surface of the disc and binds the door tightly against the jamb 27 as shown in said figure.

The closing of the door in service, is generally accomplished by an automatic door closer exerting exterior pressure thereon, which pressure is augmented by my device to insure the positive sealing of the door. In closing, my bolt strikes the disc, and which latter forces the bolt inwardly against the compression of the spring 19 and past its diametrical center to a position behind the disc, which is the shut position of the door and the locking position of my fastener.

To open the door, the operator pulls the handle 29 thereon, and my device goes through the reversal operation to that above. When the bolt passes the diametrical center line of the disc, it is freed and again assumes the normal position as shown in Fig. 2.

In some cases a padlock or other lock may be desirable on the fastener to secure the door at night or at other times. To accomplish this, I provide the head 18 of the latch bolt 17 with a suitable hole 31 between the housing 12 and the engaging member 23 for the slipping therethrough the bow 32

of a padlock 33. As shown in Fig. 1, the padlock confines the said latch bolt of my invention in such a position that it cannot be withdrawn from engagement with the disc roller 24.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired, as fall within the scope of the appended claim.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

In a latch device, a housing, means securing said housing to a door a double acting latch bolt slidably mounted in said housing, a coil spring urging said bolt outward from said housing, means governing the protrusion of said bolt, a keeper member adapted to be secured to the outer face of the door jamb provided with a roller adapted to engage said bolt, means for rigidly locking said bolt in extended position by a padlock on the bolt between the housing and the keeper member and said bolt being so adjusted that when the door is fully closed it still exerts a pressure against said roller tending to close the door further.

In testimony whereof I affix my signature.

JOHN T. HILL.