F. N. PERKINS.

REFRIGERATOR DOOR FASTENER.

APPLICATION FILED FEB. 8, 1917.

1,257,522.

Patented Feb. 26, 1918.

2 SHEETS—SHEET 1.

FIG. 1.

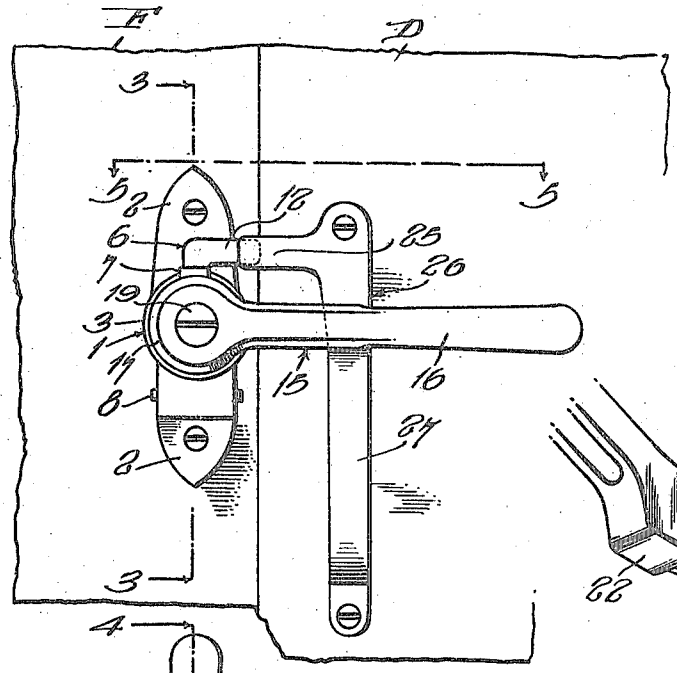
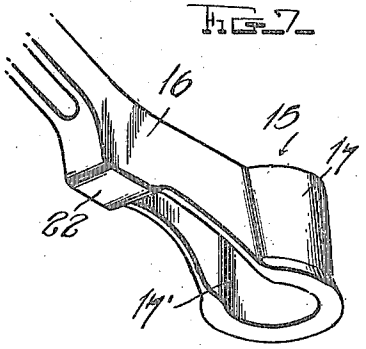


FIG. 7.



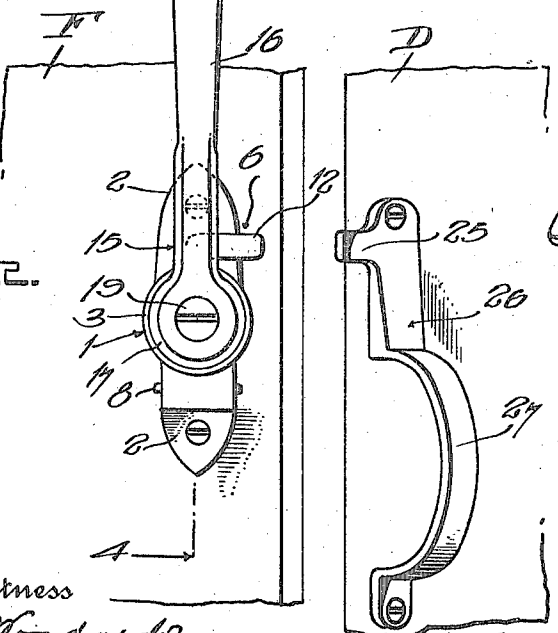


FIG. 2.

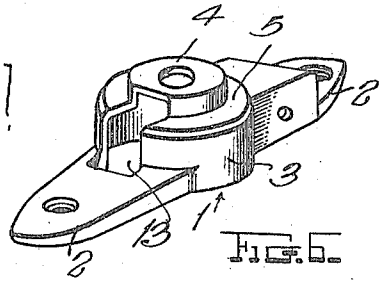


FIG. 6.

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2 SHEETS—SHEET 2.

FIG. 3.

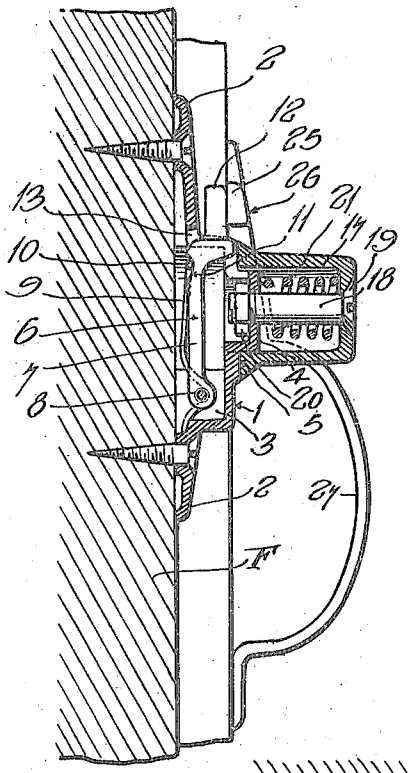


FIG. 4.

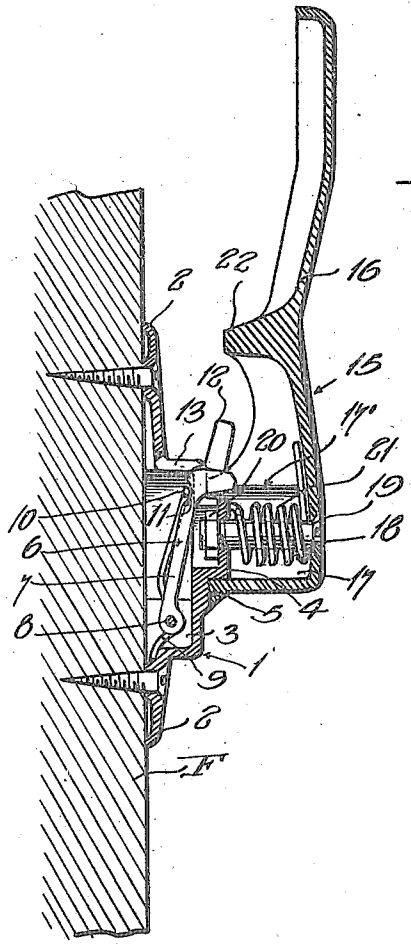
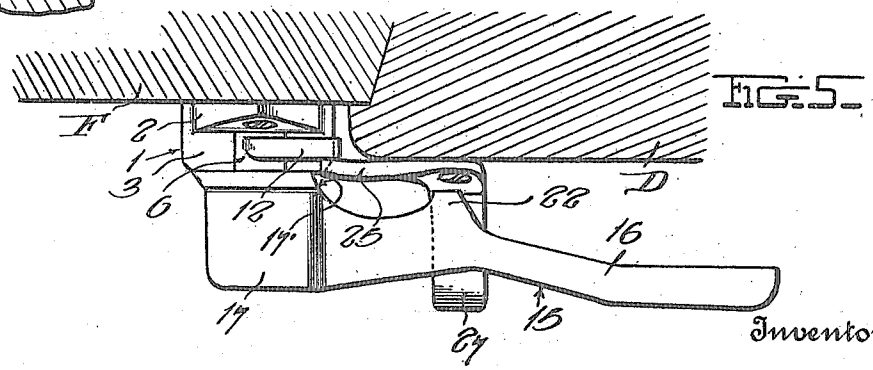


FIG. 5.



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UNITED STATES PATENT OFFICE.

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REFRIGERATOR-DOOR FASTENER.

1,257,522. Specification of Letters Patent. Patented Feb. 26, 1918.

Application filed February 3, 1917. Serial No. 147,399.

To all whom it may concern:

Be it known that I, FLOYD N. PERKINS, a citizen of the United States, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Refrigerator-Door Fasteners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in door fasteners and more particularly to those designed for use on refrigerator and similar doors.

The main object of the invention is to provide a simple and efficient door fastener of this character which in the opening of the door requires only a single movement of one hand to release the latch and open the door, and which operates automatically to lock the door on the closing of the latter.

Another object of the invention is to provide a fastener of this character in which a hollow handle is employed in connection with a hollow hub having a winding spring therein operating in connection with a trip to hold the latch in place when the door is open, and when the door is closed forces the latch into wedging engagement with the door handle and positively holds the door in tightly closed position.

Still another object is to provide a trip attachment which not only holds the latch in a desired position when the door is open but will also operate to throw the door open when the latch is released.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 represents a front elevation of a portion of a refrigerator with this improved fastener applied;

Fig. 2 is a similar view with the parts in open position;

Fig. 3 is a vertical section on line 3—3 of Fig. 1;

Fig. 4 is a vertical section on line 4—4 of Fig. 2;

Fig. 5 is a horizontal section on line 5—5 of Fig. 1;

Fig. 6 is a perspective view of the casing member of the fastener; and

Fig. 7 is a similar view of the latch member.

In the embodiment illustrated a door frame F is shown which when the device is used on a refrigerator constitutes a portion of the box against which the door D swings in the ordinary manner when closed.

Mounted on this frame adjacent the door opening is an elongated casing 1 having apertured ears 2 for securing it to the frame F. This casing has a central tubular boss 3 with a reduced extension 4 forming a journal for a pivoted latch 15 to be described, a shoulder 5 being formed at the base of said extension for a purpose to be described.

A combined spring-pressed latch locking dog and door opening device 6 is shown in the form of a heavy L-shaped bar, the free end of the long arm 7, which is pivoted in the casing at one side of the tubular boss 3. The pintle 8 at the free end of the long arm 7 of this bar is journaled in the side walls of the casing and has a heavy spring 9 coiled therearound with one end engaging the casing at the rear of the pintle and the other end provided with a laterally extending arm 10 which engages the lower or inner face of the dog, being shown arranged in a transverse groove 11 near the inner end of long arm 7 whereby the spring exerts its tension to force the dog outward toward the latch 15. The long arm 7 of the dog projects through an opening 13 in the casing and boss at a point diametrically opposite the pintle 8 and carries arm 12 which extends toward the door opening in position to be engaged by a lug 25 carried by the door, said lug operating to depress said dog against the tension of its spring on the closing of the door, thereby releasing the latch 15 which is held open by said dog in a manner now to be described.

This latch 15 is preferably made in the form of an arm 16 having a hollow hub 17

which is mounted to rotate on the extension 4 of the boss 3 with its inner free end resting and turning on shoulder 5.

An axle or shaft 18 extends through hub 17 and the boss 3 having a kerfed head 19 at its outer end and a nut 20 on its inner end which holds it in rotative engagement with the casing.

A spring 21 is coiled around shaft 18 with one end engaged with the boss extension 4 and its other end with the outer end of the hub and exerts its tension to swing the latch toward the door opening when the device is applied.

The hub 17 has an aperture 17′ in one side wall which is here shown at a point below arm 16, said aperture opening through the free end of said hub and is designed to receive dog 6 when the latch is swung to open position, as shown in Figs. 2 and 4, in which position the aperture registers with dog 6 and the spring of said dog forces it into said aperture and thus locks the latch against the tension of its spring and so holds it until the dog is depressed, which occurs on the closing of door D by the lug 25, as will be presently described.

As shown the free end of latch arm 16 is offset outwardly to facilitate the grasping thereof for operating it, and has a depending laterally extending lug 22 formed at the inner end of said offset hand grip portion and which is designed for engagement with a coöperating door closing cam 26 now to be described.

Mounted on the door D is a handle 27 from the upper end of which extends the cam 26 which is in the form of a longitudinally extending incline tapering toward its free upper end and which is positioned in the path of lug 22 on latch arm 16 when the latch is swung into position for closing and locking the door, whereby a powerful wedging action is exerted upon the door to force the latter into its closed position and crowd it tightly against its seat.

The dog depressing arm or lug 25 extends laterally from cam 26 and projects beyond the front edge of the door and is adapted to engage the short arm of said dog on the closing of the door and depress it against the tension of its spring, thereby releasing latch 15 which under the tension of its spring swings toward the right over the door, causing its lug 22′ to ride up on cam 26 and close and lock the door.

When the latch is swung to open position, the dog under its spring moves outward and its short arm 12 forcibly engages lug 25 and thereby opens door D, and if the dog spring is sufficiently strong the door will be completely opened. At the same time the dog on its movement outwardly will enter aperture 17′ in the latch hub and lock the latch in open position where it is held until the dog is again depressed on the closing of the door which releases latch 15 and which automatically closes and locks the door.

I claim.

1. The combination with a door and its frame; of a latch pivotally mounted on said frame to swing into locking engagement with said door, said latch including means for moving it to locking position, a combined latch-lock and door-opener movably mounted on said frame and including means for moving it to operative position, and held in inoperative position by said latch when the latter is in locking engagement with said door, said combined latch-lock and door-opener being positioned to engage said latch and said door to simultaneously lock the latch and open the door when said latch is swung into open position.

2. The combination with a door and its frame; of a latch mounted on said frame and pivoted to swing parallel with said door into locking engagement therewith, a spring for moving said latch toward said door, and a combined spring-pressed latch lock and door opener operable simultaneously to lock the latch and open the door on the swinging of said latch into open position against the tension of its spring.

3. In a door fastener, an attaching member having a journal thereon, a latch having a laterally extending hollow hub mounted to rotate on said journal, a spring in said hub for turning said latch in one direction, said hub having an aperture therein, and a spring pressed dog held depressed by said hub when the latch is in closed position, said dog springing into said hub aperture on the opening of said latch, whereby the latch is locked in open position.

4. In a door fastener, an attaching member having a journal thereon, a latch having a laterally extending hollow hub mounted to rotate on said journal, a spring in said hub for turning said latch in one direction, said hub having an aperture therein, a spring pressed dog held depressed by said hub when the latch is in closed position, said dog springing into said hub aperture on the opening of said latch, whereby the latch is locked in open position, and means adapted to be carried by the door and positioned to engage and depress said dog to release said latch on the closing of the door.

5. In a door fastener, a casing having means for attachment to a door frame, a tubular boss carried by said casing with a shoulder at its inner end on its outer face, a latch having a laterally extending hollow hub mounted to rotate on said boss with its end resting and turning on said shoulder, a spindle extending through said hub into said casing for connecting said latch and

casing, a spring coiled around said spindle and secured at one end to said hub and at its other end to said casing and operating to swing said latch toward the door when applied, a dog mounted in said casing below said boss and projecting at one end through said casing, a spring pressing said dog toward said hub, said hub having an aperture to receive the dog when the latch is swung to open position, and means to be mounted on the door in position to depress the dog and release the latch on the closing of the door.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FLOYD N. PERKINS.

Witnesses:
H. C. TEMPEL,
G. F. KORF.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."