J. R. MITCHELL.

REFRIGERATOR DOOR FASTENER.

APPLICATION FILED NOV. 4, 1916.

1,290,283.

Patented Jan. 7, 1919.

Fig. 1

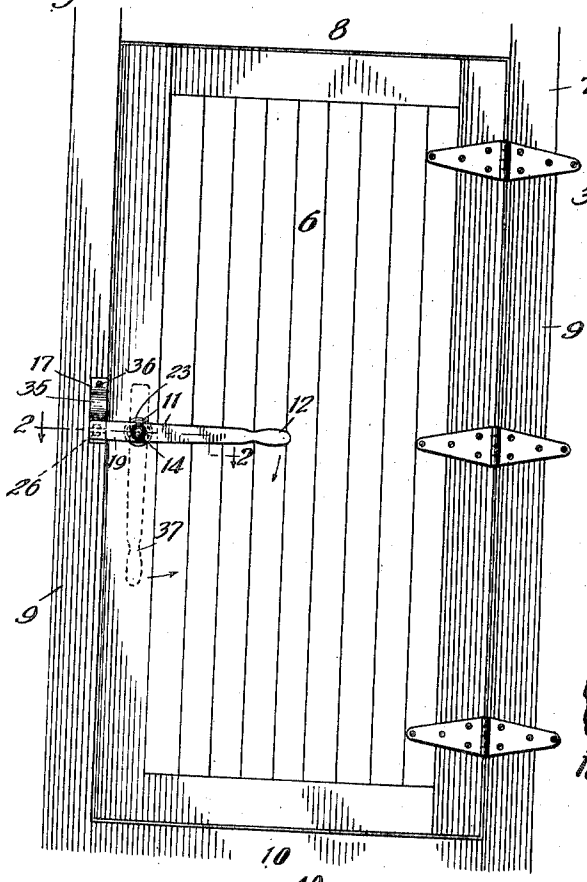


Fig. 3

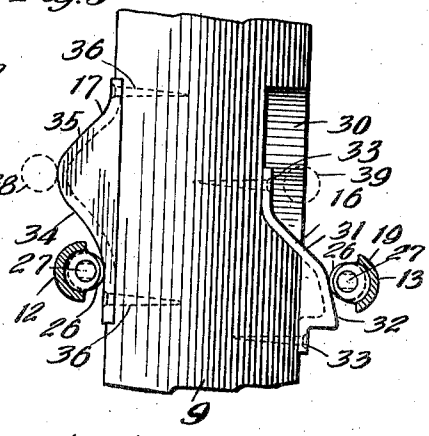


Fig. 4

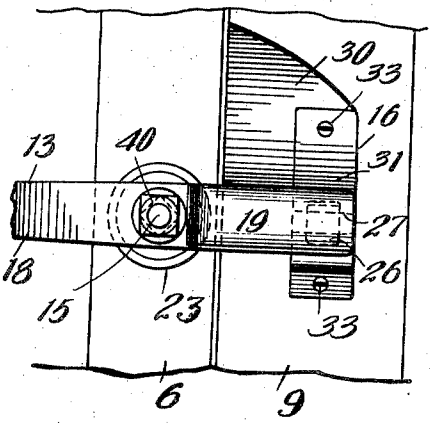


Fig. 2

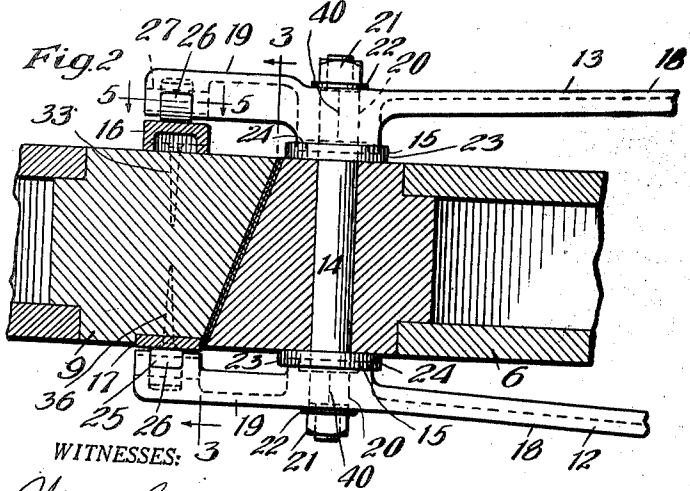
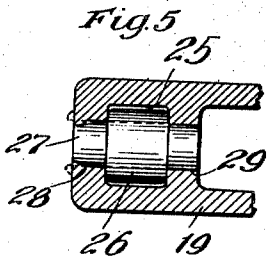


Fig. 5



WITNESSES:

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REFRIGERATOR-DOOR FASTENER.

1,290,283. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed November 4, 1916. Serial No. 129,457.

To all whom it may concern:

Be it known that I, JOHN R. MITCHELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Refrigerator-Door Fasteners, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in refrigerator door fasteners.

One of the objects of my invention is to provide a door fastener adapted to both open and close refrigerator doors and one which may be operated from either side of the door.

Another object is to provide an efficient refrigerator door fastener.

In the drawings forming a part of this specification, Figure 1 is an elevation of a refrigerator door showing the outer part of my improved door fastener mounted thereon.

Fig. 2 is an enlarged detail showing a section taken on line 2—2 of Fig. 1 and further illustrating the inner mechanism of the improved door fastener.

Fig. 3 is a vertical section, taken on line 3—3 of Fig. 2.

Fig. 4 is an enlarged detail, showing the bearing end of one of the operating levers.

Fig. 5 is an enlarged section, taken through one of the operating levers at line 5—5 of Fig. 2.

Referring to the drawings, the numeral 6 indicates a door, 7 a door frame comprising the lintel 8, the posts 9—9 and the threshold 10, all of which, for convenience, may be termed the frame surrounding the door.

My improved door fastener indicated as a whole by the numeral 11, it will be obvious, may be mounted either upon the door or upon the frame surrounding the same. In the form of my invention illustrated in the drawings, the fastener is shown mounted upon the door 6 and comprises an outer operating lever 12, an inner operating lever 13, a shaft 14, bearings 15—15 therefor, an inner plate 16 and an outer plate 17.

The outer lever 12 and inner lever 13 are substantially counterparts and therefore it will be necessary to describe only one. Each lever consists of an operating handle 18 at one end and a bearing arm 19 at its other end and is provided with a perforation 20 for the passage of the shaft 14, the said shaft being provided at its ends with a nut 21 and an adjacent washer 22. The bearings 15 for the shaft comprise a sleeve 23 surrounding the annular rib 24 on the bearing of the lever. The bearing arm of the lever is provided with a recess 25 within which is mounted a protruding roller 26 the said roller having a shaft 27 journaled at its ends in the perforations 28 and 29 provided in the bearing arm therefor.

The frame surrounding the door, as for instance, the door post 9 is provided on its inner face with a recess 30 within which is mounted one end of the inner bearing plate 31, the said bearing plate extending outwardly as indicated at the numeral 32 in Fig. 3 of the drawings and being secured at its ends to the posts by suitable means, as for instance, the screws 33. The outer bearing plate 17 is mounted on the outer face of the post 9 substantially opposite the inner bearing plate 16 and has an outwardly extended bearing face 34 which is extended in the inwardly-turned portion 35 as illustrated in Fig. 3. The outer bearing plate is secured to the post 9 by suitable means, as for instance, the screws 36—36. The bearing faces of the outer and inner bearing plates are substantially parallel throughout.

When the door is in closed position, as illustrated in Fig. 1, the same may be opened by pulling the lever 18 downwardly until it assumes substantially the position indicated by the dotted lines indicated at the numeral 37 in Fig. 1 of the drawings. As the lever moves downwardly, the bearing arm thereof moves upwardly, the roller 26 traveling upwardly and outwardly on the bearing plate 34, thus forcing the door open. During this movement the inner bearing arm is moving upwardly and substantially parallel in its travel to the outward movement of the outer bearing arm.

When the roller of the outer bearing arm has reached the position indicated by the dotted lines indicated at the numeral 38 in Fig. 3 of the drawings, the roller of the inner bearing arm will be substantially at the position indicated by the dotted lines indicated by the numeral 39 in Fig. 3 of the drawings.

The distance between the inner and outer rollers is always sufficiently great to permit

proper clearance and prevent binding of the same in the operation of the levers.

To close the door from the outside, the outer lever is moved from the position shown by the dotted lines indicated at the numeral 37 in Fig. 1 of the drawings in a contra-clockwise direction, thus likewise rotating the inner lever and through the action of the bearing arm thereof upon the inner bearing plate, forcing the door to its closed position.

It will be understood that the shaft 14 is squared or similarly conformed at its ends 40 to prevent the rotation of the levers upon the shaft and to transmit the force applied to the lever on one side of the door to the lever upon the other side of the door. When inside the door, in a similar manner the door may be opened or closed through the operation of the inner lever 13.

It is thus apparent that by the use of my invention, one can enter a refrigerator and when within the same can tightly close the door thereof to prevent the escape of the cold air or the inrush of the warmer, outside air; likewise can open the door from the inside as well as the outside thereof.

What I claim is—

1. In a device of the character described, the combination with a pivoted door and a door frame, of cam bearing plates secured to the opposite sides of the door frame adjacent the free edge of the door when the latter is in closed position, said cam plates having their bearing surfaces oppositely arranged, a shaft extending through the door near its free edge, operating levers coöperable with said shaft on the inner and outer faces of the door, each of said levers having a bearing arm adapted to coöperate with one of said cam bearing plates, one plate and one lever coöperating to pull the door to closed position and the other lever and plate coöperating to force the door open.

2. In a device of the character described, the combination with a door and a frame adjacent the door, of a shaft passing through one of said members and bearing plates secured to the other of said members, the shaft being provided with an inside and an outside lever each non-rotatably secured thereto, each of said levers having a bearing arm adapted to engage a bearing plate, the bearing plates having substantially parallel bearing faces for said bearing arms.

3. In a device of the character described, the combination with a door and a frame adjacent the door, of a shaft passing through one of said members and bearing plates secured to the other of said members, the shaft being provided with an inside and an outside lever each non-rotatably secured thereto, each of said levers having a bearing arm adapted to engage a bearing plate, the bearing plates having substantially parallel bearing faces for said bearing arms, the bearing faces of said plates being angular to the member to which they are secured.

4. In a device of the character described, the combination with a door and a frame adjacent the same, of a shaft passing through one of the said members, inner and outer bearing plates secured to the other of said members, a collar surrounding said shaft, a lever at each end of said shaft, the collar having enlarged washer-like ends to be engaged by the adjacent lever, the said levers having bearing arms, each adapted to engage a bearing plate, the said bearing plates having substantially parallel bearing faces, said bearing faces being angular to the normal path of the levers.

In witness that I claim the foregoing I have hereunto subscribed my name this 30th day of October, 1916.

JOHN R. MITCHELL.

Witnesses:

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CLAIRE M. CUNNINGHAM.