

E. J. WIRFS.
DOOR FASTENER.
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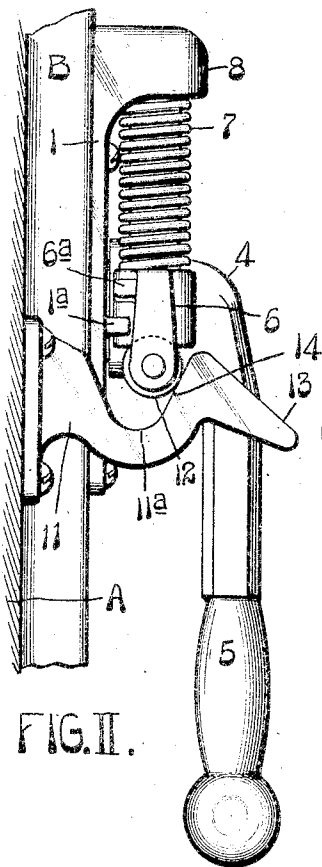


FIG. II.

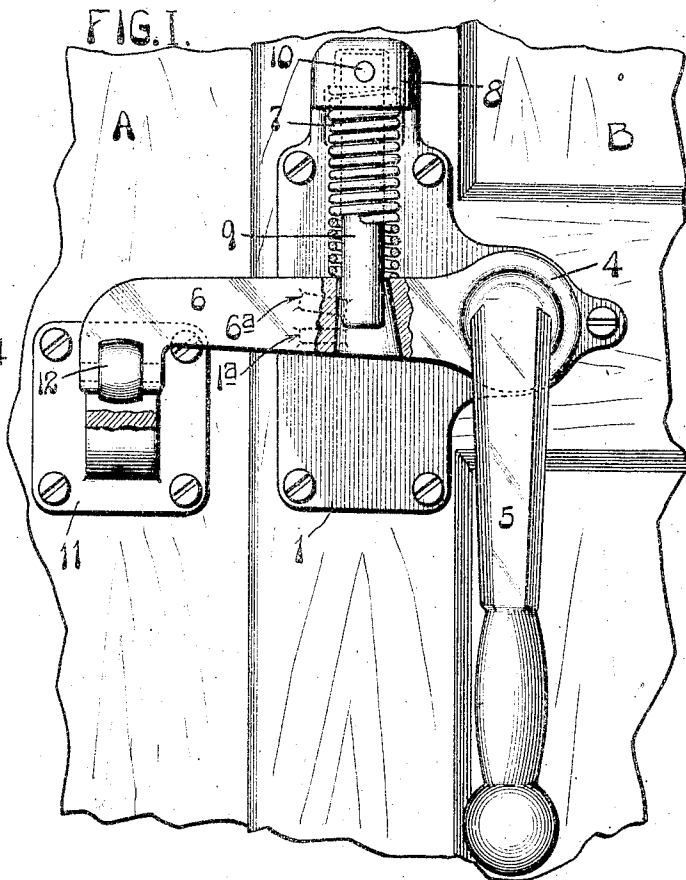
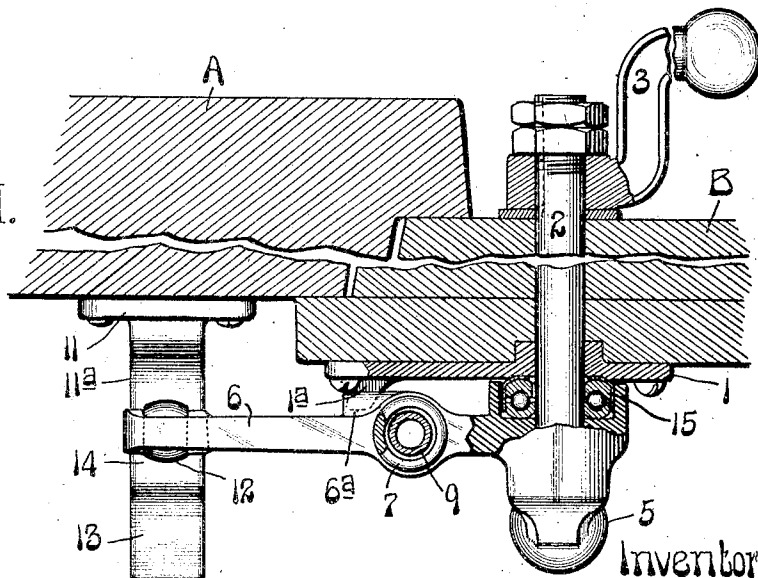


FIG. III.



Attest
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DOOR-FASTENER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, Edward J. Wirfs, a citizen of the United States of America, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Door-Fasteners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a door fastener that is more particularly adapted for use on refrigerator doors.

The object of this invention is to produce an efficient door fastener that can be very easily operated and which, when the door is closed, will automatically force the door firmly against its seat.

Figure I is a front elevation of portions of a refrigerator provided with my door fastener. Fig. II is a side elevation of the parts shown in Fig. I; and Fig. III is a horizontal section, partly in elevation, the front wall of the refrigerator and the door being partly broken out.

In the accompanying drawings:—A designates a portion of the front wall of the refrigerator and B a door for closing the doorway in said wall.

1 designates a plate secured to the door by suitable means, such as screws and which, as is also the door, is provided with an aperture through which extends a rock shaft 2.

3 is an operating handle secured to the inner end of the rock shaft and 4 is a hub rigidly mounted on the rock shaft at its outer end. The hub 4 carries an operating handle 5 by which the rock shaft 2 may be rotated, and it also carries a latch arm 6 that extends laterally from the hub and projects beyond the edge of the refrigerator door.

7 is a coil spring surmounting the latch arm 6 and interposed between it and a spring seat overhanging member 8, extending outwardly from the upper end of the plate 1, which is preferably integral with said plate.

9 is a depending spring holding rod that is surrounded by the spring 7, the upper end of the rod being secured to the spring seat member 8 by a pin 10, while the lower end of the rod occupies an aperture in the latch arm 6 that is of sufficient dimensions to permit upward and downward movements of the latch arm, without the rod 9 interfering with such movements. The spring 7 exerts

a constant downward pressure upon the latch arm 6 and to limit the degree to which said latch arm is depressed under the influence of said spring, I provide the latch arm at its rear side with a stop lug 6^a that is adapted to engage a stop lug 1^a upon the face of the plate 1. The latch arm 6 terminates in a downwardly extending fork member in which is rotatably mounted a roller 12.

11 designates a keeper secured to the front wall of the refrigerator, and provided with a socket 11^a that is adapted to receive the roller of the latch arm, and at the forward end of the keeper is an arm having an upwardly inclined face 13 that leads to the socket in the keeper and is adapted to be traversed by the roller of the latch arm when the refrigerator door is being closed and the roller of the latch arm is moving to the socket of the keeper to become seated therein. As will be seen by reference to the drawings, particularly to Figs. I and III, the roller 12 has a periphery that is curved longitudinally and consequently only a minimum of peripheral surface of the roller is presented to the keeper of my door fastener when it is riding upon the inclined face of the keeper, and consequently there is a minimum of friction between the roller and said inclined face, due to which the roller is caused to travel to the socket of the keeper with much greater ease of movement than would be possible in the use of a roller having a flat periphery.

In the practical use of my door fastener, it is unnecessary by reason of the ease of movement of the parts incorporated therein to operate either of the handles associated with the rock shaft of the fastener in the act of closing the refrigerator door, inasmuch as when pressure is exerted against the door itself, or a quick push is given to it, the roller in the latch arm rides readily up the inclined face 13 of the keeper 11, causing the latch arm to be elevated against the action of the controlling spring 9 and when the roller has reached the front upper end of the socket in the keeper, it readily descends into said socket and is forced to its seat therein under the influence of the controlling spring. The front wall of the socket in the keeper is inclined downwardly and rearwardly, (as seen at 14 Figs. II and III,) and therefore when the roller descends into the socket, it moves rearwardly and

stops between the ends of said inclined face, with the result of causing the refrigerator door to be carried firmly to its seat against the front wall of the refrigerator. As the energy in the spring is relied on to actuate the latch arm 6 in forcing the door to its seat, it is very important that friction which would resist the movement of said latch arm be eliminated as much as possible. A ball bearing 15 is therefore interposed between the latch arm and the plate 1. This ball bearing in assisting to reduce the friction between the hub 4 that carries the latch arm 6 and the door plate back of it makes it possible for the latch arm to swing with such freedom of movement when it engages the keeper 11 as to provide for said keeper riding with the greatest ease into the socket of the keeper. The consequent result is that the door in being closed and becoming fastened, moves readily and easily to its seat, with a minimum degree of shock to the door and also to the hinges supporting it. Moreover, the ball bearing 15 provides for the disengagement of the latch arm from the keeper 11 with the greatest ease when either

of the handles 5 or 3 are operated to rotate the rock shaft 2 and elevate the latch arm in order that it may be withdrawn from the keeper. 30

I claim:—

1. In a door fastener, a pivotally mounted latch arm, a rod surmounting said latch arm and loosely seated in the latch arm, a spring surrounding said rod and serving to depress the latch arm, and a keeper adapted to receive the free end of said latch arm. 35
2. In a door fastener, the combination of a door plate provided at its upper end with a spring seat member, a latch arm pivotally fitted to said door plate, a rod mounted at its upper end in said spring seat member and loosely fitted at its lower end in said latch arm, a spring surrounding said rod and interposed between said arm and said spring seat member, and a keeper adapted to receive the free end of said latch arm. 40 45

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In the presence of—

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