April 19, 1938. W. D. FERRIS ET AL 2,114,418

DOOR LATCH

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Fig. 1.

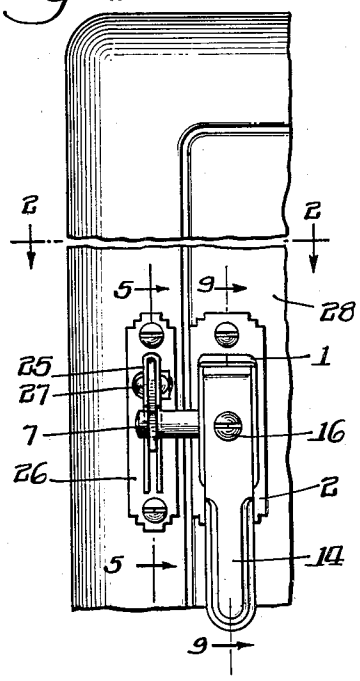


Fig. 2.

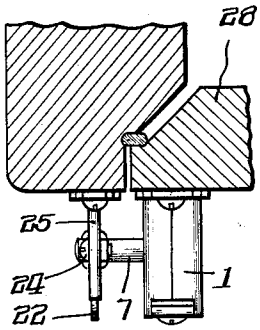


Fig. 3.

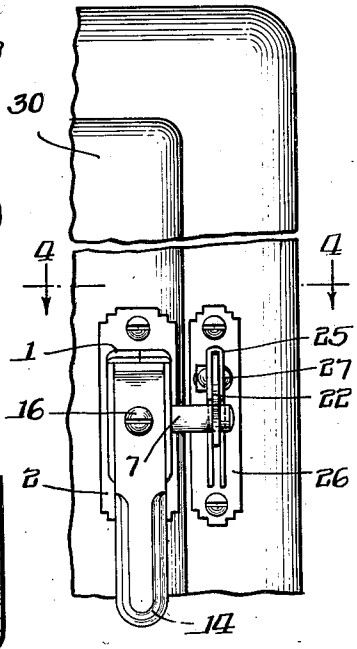


Fig. 4.

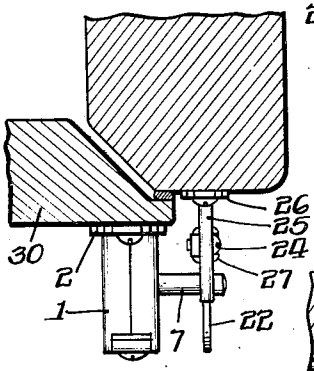


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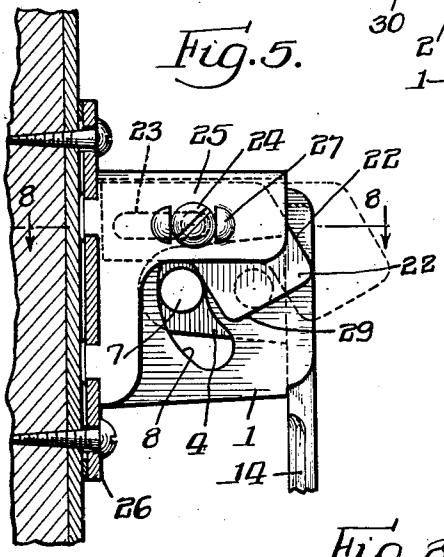


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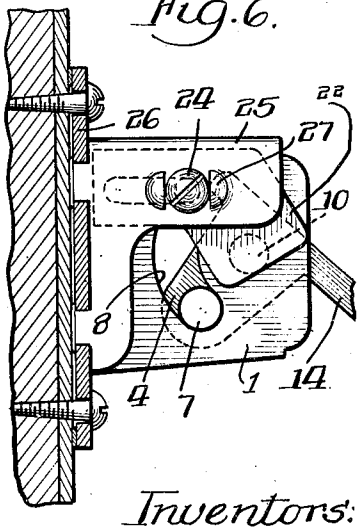


Fig. 7.

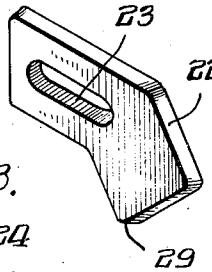
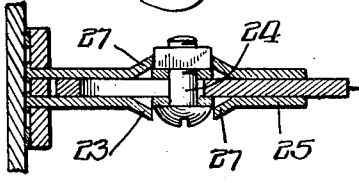


Fig. 8.



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Fig. 9.

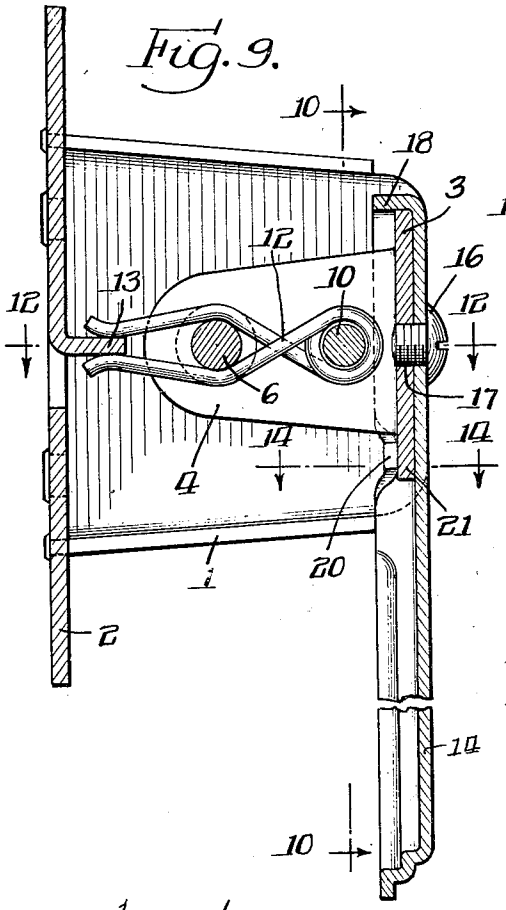


Fig. 10.

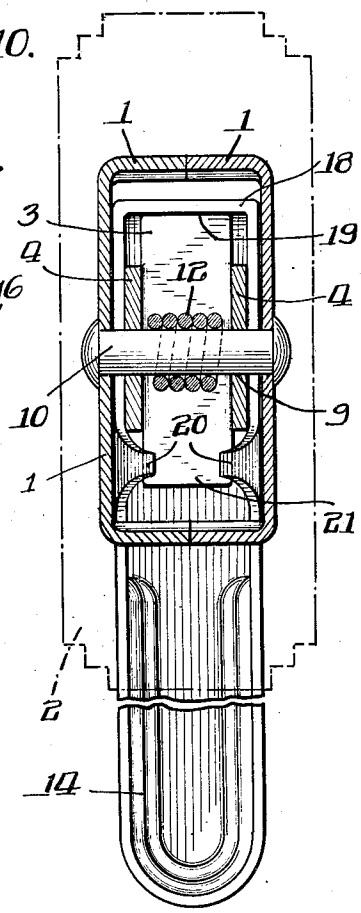


Fig. 11.

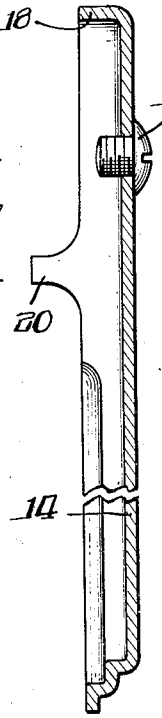


Fig. 12.

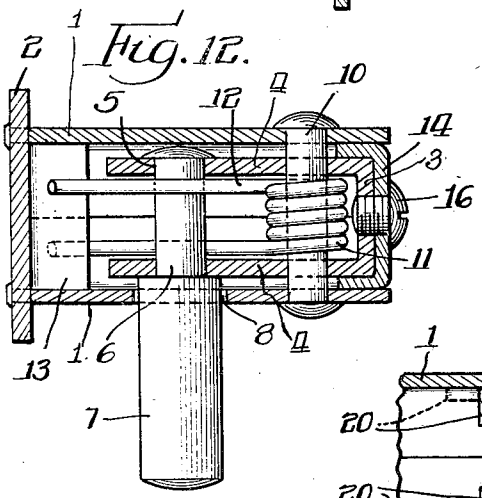


Fig. 13.

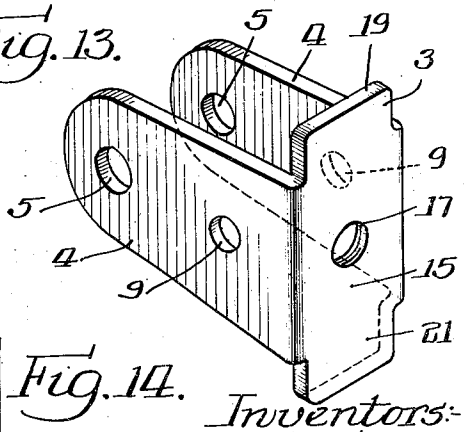
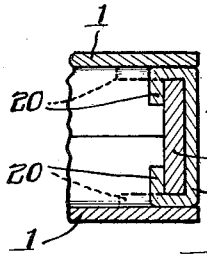


Fig. 14.



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UNITED STATES PATENT OFFICE

2,114,418

DOOR LATCH

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Application February 24, 1936, Serial No. 65,191

7 Claims. (Cl. 292—244)

This invention relates to door latches, and more particularly to latches for refrigerator doors.

Generally stated, the object of the invention is to provide a novel and improved construction whereby a latch is provided that can be used conveniently and satisfactorily on either a right or left door.

Another object is to provide a novel form of adjustable strike-piece for the latch.

It is also an object to provide certain details and features of construction tending to increase the general efficiency and the desirability of a door latch of this particular character.

To the foregoing and other useful ends, the invention consists in matters hereinafter set forth and claimed and shown in the accompanying drawings, in which—

Fig. 1 is a front elevation of a latch embodying the principles of the invention, shown in use on a right-hand refrigerator door.

Fig. 2 is a horizontal section on line 2—2 in Fig. 1 of the drawings.

Fig. 3 is a view similar to Fig. 1, showing the latch in use on a left-hand door, which latter is offset instead of flush.

Fig. 4 is a horizontal section on line 4—4 in Fig. 3 of the drawings.

Fig. 5 is an enlarged vertical section on line 5—5 in Fig. 1 of the drawings.

Fig. 6 is a view similar to Fig. 5, showing the parts in a different position.

Fig. 7 is a perspective of the adjustable strike-piece.

Fig. 8 is a horizontal section on line 8—8 in Fig. 5 of the drawings.

Fig. 9 is an enlarged vertical section on line 9—9 in Fig. 1 of the drawings.

Fig. 10 is a vertical section on line 10—10 in Fig. 9 of the drawings.

Fig. 11 is a longitudinal section of the handle of said latch.

Fig. 12 is a horizontal section on line 12—12 in Fig. 9 of the drawings.

Fig. 13 is a perspective of one of the parts of the latch.

Fig. 14 is a horizontal section on line 14—14 in Fig. 9 of the drawings.

As thus illustrated, the invention comprises a two-part housing 1, fastened at its base to a plate 2, which latter may be secured by screws to the door of the refrigerator, or to any other door, for which a latch of this character is desirable. Within the said housing, which latter can be made of suitable metal, there is a metal yoke 3, having its side portions 4 provided with horizontally aligned holes 5 for the reduced end portions 6 of the latch bolt 7, which latter is rigidly secured to said yoke, and is adapted to travel back and forth in the curved slot 8, formed in one side of the housing. The said yoke is also provided with holes 9 for the pivot pin 10, which latter is suitably mounted in the side portions of the said housing. A coil spring 11 is carried on the pivot pin 10, with its end portions arranged crosswise of each other, at 12, between the pin 6 and the pivot 10, as shown in Fig. 9 of the drawings, and with the extreme ends of these end portions engaging the lug 13, suitably formed on the plate 2, previously mentioned. The handle 14 is secured flatwise to the face 15 of the yoke, by a screw 16 inserted through the handle and into the threaded opening 17, formed in said yoke. The said handle preferably has a flange 18 at its upper end to engage the upper edge 19 of the yoke, as shown more clearly in Fig. 9 of the drawings, and in addition, the opposite side edges of the handle preferably have lugs 20 that are bent around and upon the inner surface of the lower end portion 21 of the yoke, as shown more clearly in Fig. 14 of the drawings.

The latch bolt 7 is adapted to engage and disengage the strike-piece 22, which latter has a slot 23 for the bolt 24, which latter is suitably carried by the side walls of the bracket 25 that is suitably secured to the plate 26, which latter is secured to the body of the refrigerator. The side portions of the bracket 25, spaced apart to receive the strike-piece 22 between them, are provided with lugs 27 to engage the nut of the bolt 24 to prevent the latter from becoming loose. The strike-piece 22 can be adjusted outwardly or in the opposite direction, to suit the requirements of any particular situation, and the bolt 24 can then be tightened to hold the strike-piece in its adjusted position.

As shown in Figs. 1 and 2, the latch is applied to a right-hand door 28, of a refrigerator, which door is flush with the front of the refrigerator body. By pulling outwardly on the handle 14, the latch bolt 17 will be disengaged from the strike-piece 22, and will pass under the latter, so that the door may be opened outwardly. When the handle is released, the spring 11 will return the handle and the yoke and the latch bolt to normal position, as shown in Fig. 9 of the drawings. When the door is slammed shut, the bolt 7 will strike the outer end of the piece 22, and will pass under the corner 29 of said strike-piece, and will then assume the normal

position in which it is shown in Fig. 5 and Fig. 9 of the drawings, holding the door closed.

In Figs. 3 and 4, the latch has been adjusted to make it useful on a left-hand door, which latter is offset, as shown in Fig. 4 of the drawings. In order to do that, the handle 14 is removed, by taking out the screw 16, and is turned upside down and again fastened in place. Then the handle and the elements connected thereto, including the plate 2, are reversed or turned end for end, to bring them into the position shown in Fig. 3 of the drawings, and in such condition these elements are fastened to the offset door 30 of the refrigerator. In Fig. 1, the bolt 7 extends to the left, but after the reversal the bolt 7 extends to the right, as shown in Fig. 3 of the drawings. The strike-piece is then adjusted outwardly, and the bolt 4 is reversed to bring the nut thereof on the inside of the bracket 25 and the bolt is then tightened to hold the strike-piece 22 in its adjusted position, which adjustment is necessary because the plates 2 and 26 are not in the same vertical plane, and consequently the strike-piece must be adjusted outwardly. It is obvious that the slot 8 must be long enough to permit operation and movement of the bolt in the required manner on either a right or a left door.

It will be seen that the spring 11 functions to yieldingly keep the latch bolt in normal position, regardless of whether the latch is on a right-hand door or left-hand door, because the spring has two legs engaging the reduced inner end portion 6 of the latch bolt, as previously explained.

Thus, by simply reversing the handle on the latch, by turning it end for end, the latch is usable on either a right-hand or a left-hand door, and by adjusting the strike-piece, the latch is also usable on either a flush door or an offset door, in the manner shown and described.

From the foregoing it will be seen that the door latch shown and described is practically universal in its application to different kinds of doors, right or left doors, or flush or offset doors, and hence that the invention tends to bring about a saving of time and expense in various ways. For example, should a customer ask a hardware dealer for a latch for a left-hand offset door, or for a right-hand flush door, the necessity on the part of the storekeeper to locate the desired form of latch, by a search through the hardware stock, is avoided, as a stock of latches of the kind shown and described is sufficient for doors of different kinds, and the same latch is sold for the different purposes. Also, in case of discrepancies caused by shrinkage or otherwise, it is of advantage to be able to adjust the strike-piece accordingly, in order to insure correct and effective operation of the latch.

What we claim as our invention is:

1. A door latch comprising a movable handle for unlatching the door, means for mounting the handle on the door, and means whereby the handle is reversible on its mounting, by turning the handle end for end, whereby the latch may be used on either a right or a left door, said mounting being a housing, and said handle being detachably fixed to the front portion of a yoke that is pivoted within the housing, together with a latch bolt rigid with said yoke, projecting through and movable in one side of said housing.

2. A structure as specified in claim 1, said housing being reversible side for side to position said handle downward on either the right or left door.

3. A door latch having a pivoted member, a latch bolt rigid with said member, and a handle separable from and having its back rigidly engaging the outer front side of said member, reversible end for end on the latter, for a right or left door.

4. A structure as specified in claim 3, said back being flanged to fit and embrace said member.

5. A structure as specified in claim 3, having a screw extending horizontally through said handle into said member at right angles to the axis of the handle, whereby the latter is removable, together with a two-part casing enclosing said member but open at its front to expose the outer side of said member, said handle normally extending vertically and closing the open front of the casing.

6. A structure as specified in claim 3, said handle being flanged on its back to fit tightly around said member.

7. A structure as specified in claim 3, said handle having lugs bent around and upon the rear side of the front wall of said member.

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