

Sept. 12, 1939.

N. B. GEDDES  
REFRIGERATOR LATCH

2,172,467

Filed July 23, 1935

2 Sheets-Sheet 1

Fig. 2.

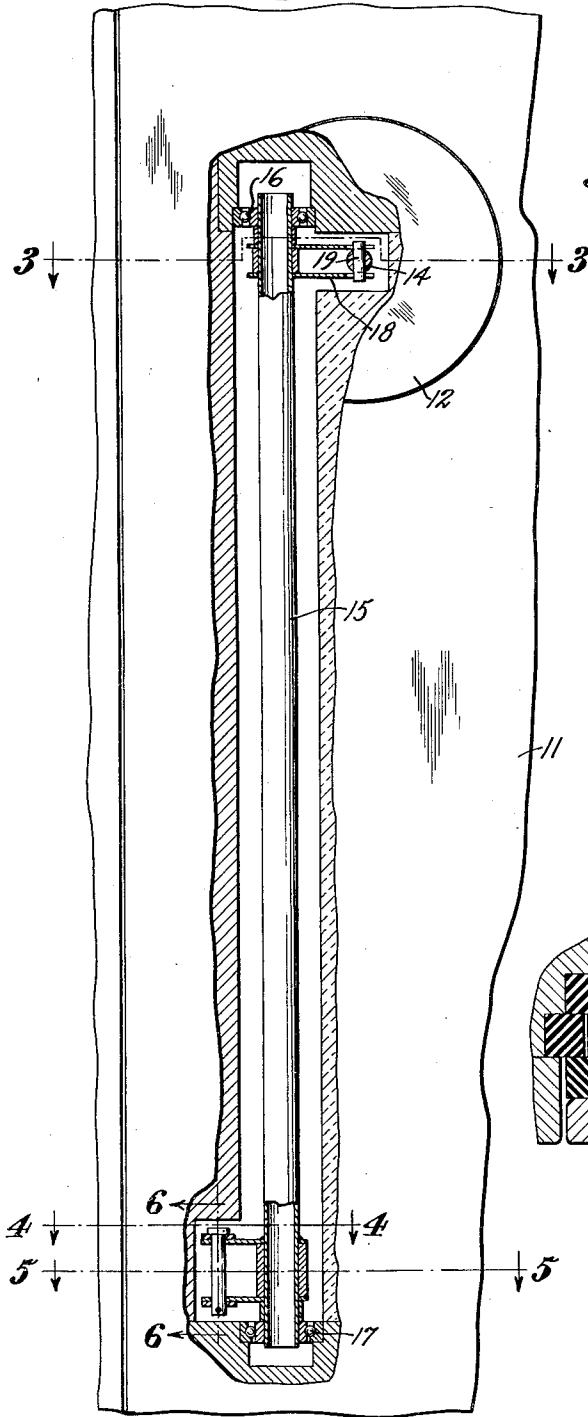


Fig. 1.

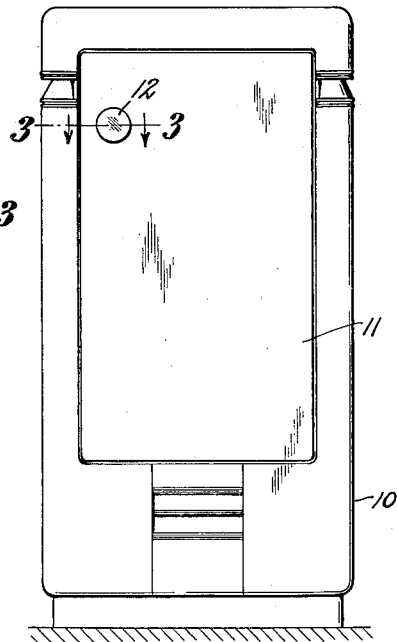
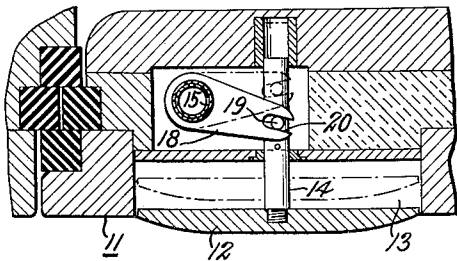


Fig. 3.



INVENTOR.

*Norman Bel Geddes*

BY

*D. E. Heath*  
ATTORNEY.

Sept. 12, 1939.

N. B. GEDDES

2,172,467

REFRIGERATOR LATCH

Filed July 23, 1935

2 Sheets-Sheet 2

*Fig. 4.*

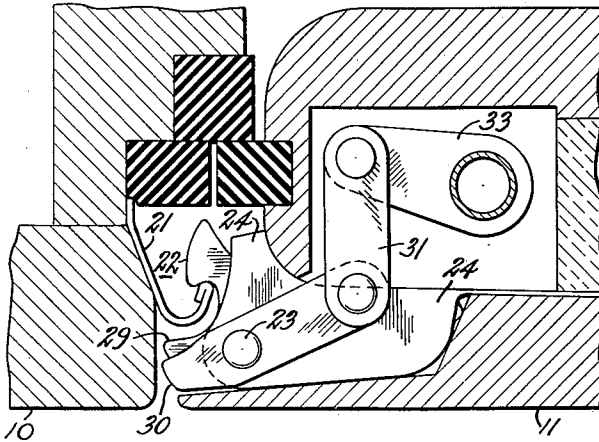


*Fig. 6.*

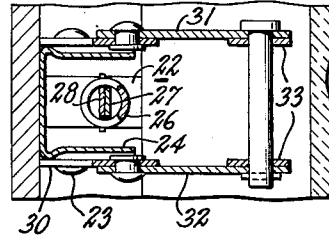


*Fig. 5.*

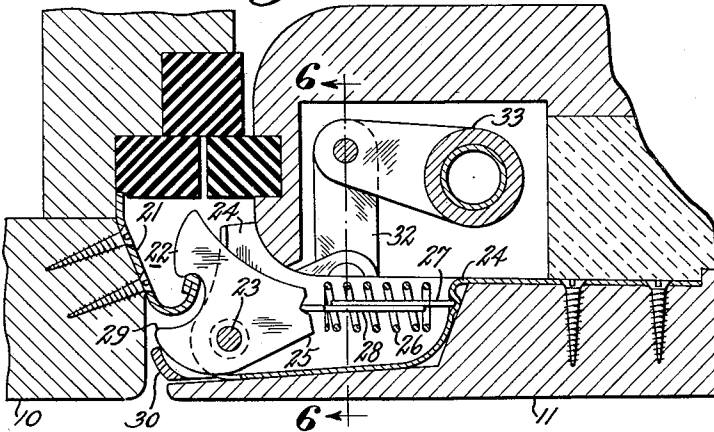
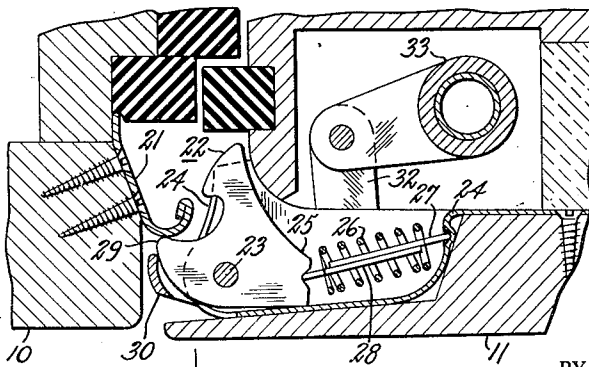


*Fig. 7.*

INVENTOR.

*Norman Bel Geddes*

BY

*L. E. Heath*  
ATTORNEY.

## UNITED STATES PATENT OFFICE

2,172,467

## REFRIGERATOR LATCH

Norman Bel Geddes, New York, N. Y., assignor  
to Servel, Inc., New York, N. Y., a corporation  
of Delaware

Application July 23, 1935, Serial No. 32,741

6 Claims. (Cl. 292—199)

This invention relates to a latch for a door of a refrigerator and it is an object of the invention to provide an improved latch whereby the appearance and convenience in operation of a refrigerator door are improved.

The invention, together with the objects and advantages thereof, will appear upon consideration of the following description taken in conjunction with the accompanying drawings, forming a part of this specification, and of which:

Fig. 1 is a front elevation of a refrigerator embodying the invention;

Fig. 2 is an enlarged fragment of the refrigerator shown in Fig. 1, partly broken away;

Fig. 3 is a detail section taken on line 3—3 in Figs. 1 and 2;

Fig. 4 is a detail section taken on line 4—4 in Fig. 2;

Fig. 5 is a detail section taken on line 5—5 in Fig. 2;

Fig. 6 is a detail section taken on lines 6—6 in Figs. 2 and 5; and

Fig. 7 is a view like Fig. 5 showing the mechanism in a different position of operation.

There is shown in Fig. 1 a front view of a refrigerator cabinet 10 accessible by means of a door 11. The outer surface of the door 11 is flush with the outer surface of the front of the cabinet 10 and the door is hinged to the cabinet on one side by means of concealed hinges. The door 11 is provided on the free side opposite the hinges with an improved latch to be presently described, which latch is operated by what may be termed a target 12 or other suitable impact receiving member. The target 12, as seen in Figs. 1 and 3, may be a disc reciprocable in a recess 13 in the outer surface of the door 11 and is located at a desired height that it may be operated either by hand or other part of the body such as the shoulder. The operating disc or target 12 is secured on the end of a short rod 14 which is slidably journaled in the door 11 so that the target 12 is movable perpendicularly to the plane of the door.

As seen in Fig. 2, a shaft 15 is rotatably journaled in a vertical position within the door 11 by means of a suitable bearing 16 at its upper end and a thrust bearing 17 at its lower end. The upper end of the shaft 15 is adjacent the rod 14 on the target 12, and the lower end of the shaft 15 is adjacent the latch bolt to be described. The rod 14 on the target 12 is operatively connected to the upper end of the shaft 15 by means of a short lever arm 18. One end of the lever arm 18 is secured to the shaft 15. The other end

of the lever arm 18 is bifurcated and straddles the rod 14. A pin 19 in the rod 14 engages in slots 20 in the end of the lever arm 18. Thus, when the operating disc or target 12 is moved from its full line position in Fig. 3 to its dotted line position, the rod 14 is thrust inwardly and rotates the lever arm 18 and shaft 15 in a counter-clockwise direction as seen in Figs. 3, 4, 5 and 7.

Referring now to the detail Figs. 4, 5, 6 and 7, the refrigerator cabinet 10 is provided with a striking plate 21 adapted to be engaged and disengaged by a latch bolt 22 on the door 11. The bolt 22 is pivoted at 23 on a stationary housing 24 in a suitable recess in the door 11. Between an inwardly projecting portion 25 of the pivoted bolt 22 and the stationary housing 24 is arranged a compressed spiral spring 26. The spring 26 is carried by usual slide bars 27 and 28, the head of the slide bar 27 being pivoted in a suitable groove in the housing 24, and the head of the slide bar 28 being pivoted in a suitable groove in the projecting portion 25 of the pivoted bolt 22. The pivoted bolt 22 and the spring 26 constitute a snap action toggle. This toggle is shown displaced to one side of dead center in Fig. 5, and to the other side of dead center in Fig. 7. When this toggle is on the side of dead center illustrated in Fig. 5, the bolt 22 engages behind the striking plate 21 if the door 11 is closed. When the toggle is shifted to the side of dead center illustrated in Fig. 7, the bolt 22 is disengaged from the striking plate 21 and, if the door is closed, an outer lip 29 is brought into contact with the outer edge of the striking plate 21, giving an opening movement to the door 11.

Assume now that the door 11 is open and the bolt 22 is in the position indicated in Fig. 7. Upon closing the door the lip 29 of the bolt is brought up against the striking plate 21, causing the toggle to snap to the position shown in Fig. 5 in which the bolt 22 engages behind the striking plate 21 to hold the door closed. To unlatch the door, there is provided a bolt shifting member 30 which is a generally U-shaped member also pivoted at 23 on the stationary housing 24. The closed end of the U-shaped member 30 is operatively associated with the lip 29 of the latch bolt 22, and the ends of the legs of the U-shaped member 30 are connected by similar links 31 and 32 to the ends of a bifurcated lever arm 33 secured on the lower end of the vertical shaft 15. It will now be understood that when the shaft 15 is rotated in a counter-clockwise direction by pressing in on the target 12, as previously described, the lever arm 33 rotates from its position

shown in Fig. 5 to its position shown in Fig. 7 and, by means of the links 31 and 32, rotates the bolt shifter 30 so that the closed end thereof engages the lip 29 of the bolt 22 and shifts the bolt to the position shown in Fig. 7. This operation causes the door to open as previously described.

It will be understood that various changes may be made within the scope of this invention which is not limited except as indicated in the following claims.

What is claimed is:

1. A latch for a refrigerator door including a pivotally mounted bolt having a latching finger and a trip finger, means for imparting a snap-action to said bolt to rotate the latter about its pivot either to unlatched or latched position, a strike adapted to be engaged by the trip finger to impart opening movement to the door when said bolt is rotated to unlatched position, an impact receiving member, and mechanism operatively associating said impact receiving member and said bolt to cause said bolt to rotate to unlatched position to effect opening movement of the door upon impact delivered to said impact receiving member in a direction substantially opposite to the opening movement of the door.
2. A latch for a refrigerator door including a pivotally mounted bolt having a latching finger and a trip finger, means for imparting a snap-action to said bolt to rotate the latter either to latched or unlatched position, a strike adapted to be engaged by the trip finger to impart outward opening movement to the door when said bolt is rotated to unlatched position, a member recessed in the outer surface of the refrigerator, and mechanism operatively associating said member and said bolt to cause said bolt to rotate to unlatched position to effect outward opening movement of the door upon impact on said member.
3. A latch for a refrigerator door having a recess in the outer surface thereof, said latch including a pivotally mounted bolt having a latching finger and a trip finger, means for imparting movement to said bolt to rotate the latter about its pivot either to latched or unlatched

position, a strike adapted to be engaged by the trip finger to impart outward opening movement to the door when said bolt is rotated to unlatched position, a movable member located in the recess, and mechanism operatively associating said member and said bolt to cause said bolt to rotate to unlatched position to effect outward opening movement of the door when said member is pressed inward.

4. A latch for a refrigerator door including a pivotally mounted bolt having a latching finger and a trip finger, means for imparting movement to said bolt to rotate the latter about its pivot either to latched or unlatched position, a strike adapted to be engaged by the trip finger to impart outward opening movement to the door when said bolt is rotated to unlatched position, an impact receiving member located in the outer surface of the door, and mechanism operatively associating said member and said bolt to cause said bolt to rotate to unlatched position to effect outward opening movement of the door upon impact delivered to said member in a direction substantially opposite to the opening movement of the door.

5. A latch for a refrigerator door having a recess in the outer surface thereof, said latch comprising means including a bolt to impart opening movement to the door when it is released, a movable member located in the recess, and mechanism operatively associating said member and said bolt to cause said first-mentioned means to release said bolt to impart opening movement to the door when said member is pressed inward.

6. A latch for a refrigerator door comprising means including a bolt to impart opening movement to the door when it is released, an impact receiving member located in the outer surface of the door, and mechanism operatively associating said member and said bolt to cause said first-mentioned means to release said bolt to impart opening movement to the door upon impact delivered to said member in a direction substantially opposite to the opening movement of the door.

NORMAN BEL GEDDES.