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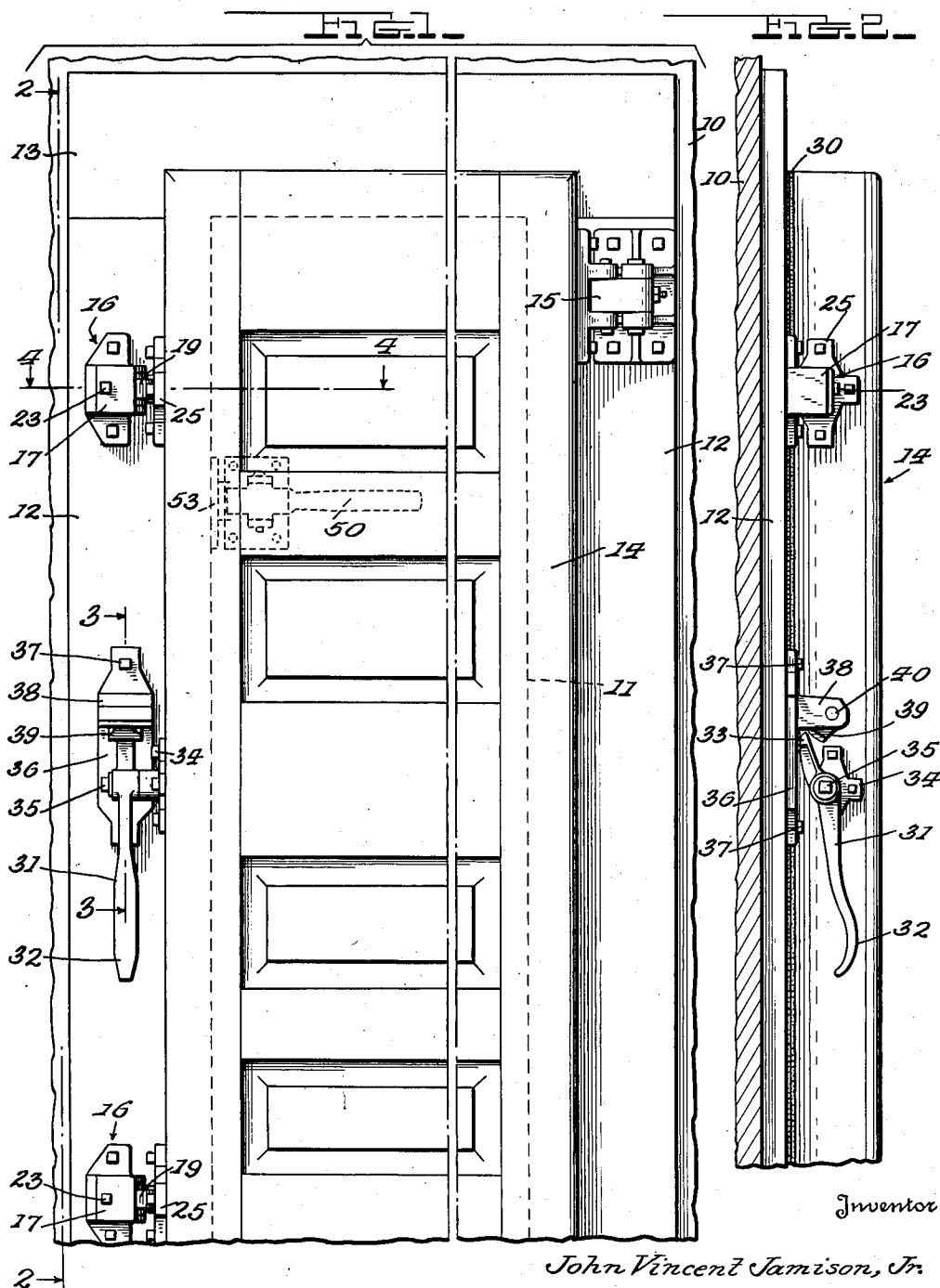
J. V. JAMISON, JR

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CLOSURE MEANS FOR SUPER FREEZER DOORS

Filed Oct. 9, 1950

2 SHEETS--SHEET 1



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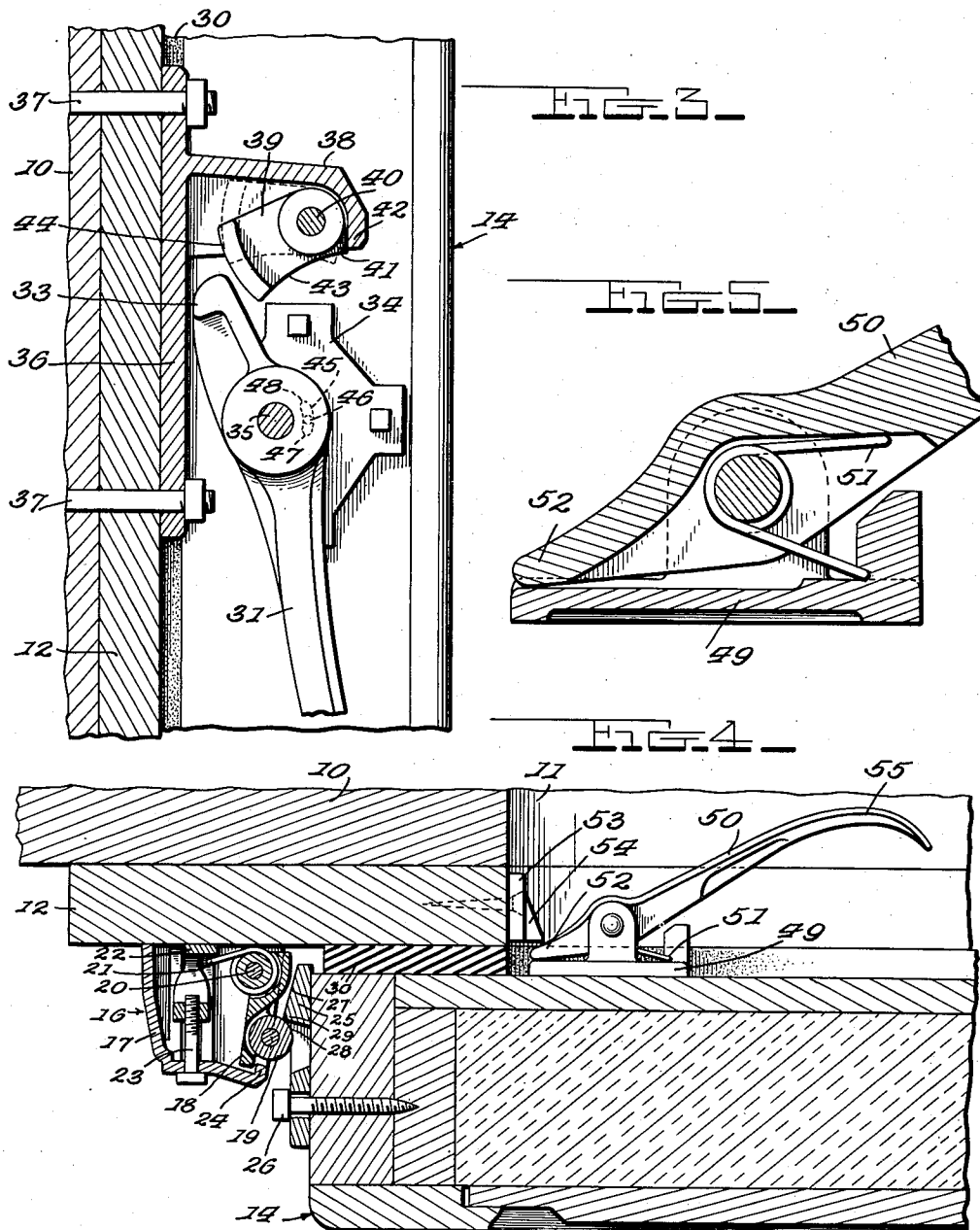
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2 SHEETS—SHEET 2



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CLOSURE MEANS FOR SUPER FREEZER DOORS

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4 Claims. (Cl. 268-72)

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The invention relates to new and useful improvements in a closure means for a super freezer door of the overlap type for commercial refrigerators and freezer structures.

In the above type of door the door overlaps the door frame and between the door and the frame is the sealing gasket. The tightness of the seal when the door is closed depends upon the compression force of the door against the gasket. It is a common expedient to use spring pressed latching devices for pressing the door against the gasket when closed for sealing the same. When ice or frost accumulates on the gasket which often occurs with super freezers, the slamming of the door into engagement with the spring pressed latching devices and against the gasket does not tightly seal the door.

An object of the invention is to provide a super freezer door of the overlap type having associated therewith spring pressed latching devices for holding the door closed with a manually operated lever means for positively forcing the door against the gasket so that it will be held in tight sealed engagement therewith by the spring pressed latching devices.

A further object of the invention is to provide a lever operating means for forcing the door against the gasket which is also equipped for applying force to the door for releasing it from the gasket and for opening the door.

A still further object of the invention is to provide a means for positively closing the door against the sealing gasket and releasing the door therefrom which includes a manually operated lever mounted on the edge of the door which lever has a contact end adapted to engage a fulcrum member on the door frame for forcing the door to closed position when moved in one direction and wherein the contact end engages the door frame when moved in the other direction for releasing the door from the gasket.

In the drawings, which show by way of illustration one embodiment of the invention:

Figure 1 is a front view of a portion of a super freezer showing the door for closing the opening to the freezer, its mounting, and the closure means therefor;

Figure 2 is a sectional view on the line 2-2 of Figure 1;

Figure 3 is a sectional view on the line 3-3 of Figure 1;

Figure 4 is a sectional view on the line 4-4 of Figure 1; and

Figure 5 is a sectional view of the lever on the

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inside of the door for opening the same and the mounting therefor.

The invention has to do with a closure means for super freezer door of the overlap type. A portion of the freezer or refrigerator is indicated at 10 in the drawings. The opening leading to the interior of the freezer is indicated in dotted lines at 11. The sides of the door frame surrounding the opening are indicated at 12 and the upper trim of the door frame is indicated at 13.

The opening 11 leading to the interior of the freezer is closed by a door 14 which overlaps the door frame at the top and at both sides of the opening. The door is mounted on hinges, one of which is shown at 15. These hinges are of the usual construction and a detailed description thereof is not thought necessary.

The door is held in closed position by two spring pressed latching devices, which are similar in construction and are indicated at 16. Each spring pressed latching device includes a housing 17 which is rigidly attached to the door frame 12. Mounted within the housing is a latching lever 18 carrying a roller 19. The latching lever is pivoted at 20. A coil spring 21 serves to move the latching lever in a counterclockwise direction. This coil spring abuts against a plate 22 which is adjustable by means of a bolt 23 for increasing or decreasing the latching force of the latching lever. The housing has a projecting lug 24 which serves as a stop for limiting the movement of the latching lever when the door is in open position. Each latching device includes a keeper 25 mounted on the edge of the door 14. This keeper 25 is secured to the door by clamping bolts 26. The keeper has a tapered face 27 and a tapered face 28 which meet to form a locking shoulder 29. The keeper may be adjusted to change the position of the locking shoulder 29 on the edge of the door.

Between the door and the door frame is a gasket 30. This gasket is of the usual construction. When the door is closed it contacts the gasket and compresses the same so as to make a tight seal. When the door is in open position and pushed or slammed to closed position, the roller will be engaged by the tapering face 27 and moved over the shoulder 29 onto the tapered face 28. This spring pressed latched not only locks the door in closed position but the force of the spring tending to turn the latching lever in a clockwise direction will, to a certain extent, press the door against the gasket. The pressure of the latch

against the keeper may be adjusted by turning the bolt 23. It often occurs in these super freezers that ice or frost will accumulate on the gasket. When the door is slammed into engagement with the spring pressed latching devices and into engagement with the gasket, the ice or frost on the gasket will prevent the tightly sealing of the door.

The present invention has particularly to do with a manually operated means for forcing the door into tight sealing engagement with the gasket. This manually operated means includes a lever 31 having a handle end 32 and a contact end 33. A bracket member 34 is bolted to the edge of the door. The lever is pivotally mounted intermediate its ends on this bracket. The pivotal support for the lever is indicated at 35. Mounted on the door trim adjacent the edge of the door is a housing 36. The housing 36 is secured to the door trim by suitable bolts 37, 37. The housing has an outwardly projecting portion 38, and pivotally mounted in this outwardly projecting portion of the housing is a fulcrum plate 39. Said plate is pivoted at 40 and normally swings by gravity to the position shown in full lines in Figure 3. Said plate has a shoulder 41 which engages an abutment stop 42. The lower side of this fulcrum plate is curved as indicated at 43. The free end of the fulcrum plate is provided with a projecting flange and the outer face 44 of the flange is curved about a pivot 40 as a center.

As shown in Figure 3, the door is in closed position. When it moves to closed position the contact end of the lever 31 passes the fulcrum plate 39. The contact end 33 of the lever will engage the curved face 43 and move the plate in a clockwise direction as indicated in dotted lines in Figure 3. Just as soon as the contact end passes the fulcrum plate it will drop to the full line position and inward movement of the handle end of the lever 31 will cause the contact member to engage the fulcrum plate and this enables the lever to force the door against the gasket so as to compress the same regardless of any frost or ice thereon and thus produce a tight seal for the door all the way around the door.

The lever 31 is provided with an arcuate slot 45 and a pin 46 carried by the bracket 34 engages said slot. When the door is in open position the lever 31 will swing so that the pin 46 is intermediate the ends of the slot. When the door is pushed towards closed position if the fulcrum plate 39 should stick for any reason then the lever will be turned in a clockwise direction until the pin 46 engages the end 47 of the slot. The lever cannot turn further and will force the fulcrum plate so that the lever will pass the same and then swing to the position shown in full lines in Figure 3. After the lever contact end has passed the fulcrum plate it will swing to the full line position shown in this figure. If the door is not tightly sealed, pressure on the handle end of the lever will cause the contact end of the lever 31 to engage the fulcrum plate and pressure on the handle end will provide a leverage for forcing the door against the gasket so as to insure a tight sealing of the door. The spring pressed latching devices will automatically hold the door in the tightly sealed position to which it had been forced by the lever 31. When it is desired to open the door the handle end of the lever 31 is grasped and pulled upon and this will turn the lever so that the contact end 33

thereof will contact with the bracket 36 on the door trim. Pressure applied to the handle end of the lever 31 to move it in a counterclockwise direction will force the door toward open position so as to break it loose from the gasket or the gasket from the door trim depending whether or not the gasket is attached to the door or the door trim. As soon as the door moves a slight distance from the gasket then further pressure on the handle end of the lever 31 will move the end 48 of the slot 45 into contact with the pin which will limit the turning movement of the lever in a counterclockwise direction and therefore the door may be pulled to full open position.

The door shown is equipped with a device for forcibly opening the door from the inside thereof. Said device includes a supporting bracket 49 to which is pivoted a lever 50. There is a spring 51 which holds the contact end 52 of the lever in contact with the base portion of the bracket 49. Mounted on the door trim 12 is a plate 53 carrying a lug 54 which normally overlies the contact end 52 of the lever 50. When it is desired to open the door the handle end 55 of the lever is moved toward the door and in the direction for opening the door. The contact end will engage the lug 54 and this provides a leverage whereby the door may be forced past the spring pressed latches and moved to open position.

The essential features of the improved door closure means for closing and opening the door include the spring pressed latching means for holding the door closed. One of these is shown in Figure 1 at 16. The other is located on the door frame or trim toward the lower end thereof. Another feature of the door closure means is the lever mounted on the edge portion of the door which cooperates with a fulcrum plate to provide a leverage for forcing the door into sealed tight engagement with the gasket associated with the door even though ice or frost has accumulated on the gasket. This same lever forcing the door to closed position when moved in the opposite direction would force the door so as to release the door from its contact with the gasket after which the door may be pulled to full open position by the aid of said lever. Still another feature of the door closing and opening means is the lever arrangement on the inside of the door which may be operated from within the freezer for forcing the door so as to release it from the spring pressed latches.

While one illustrated embodiment of the invention has been shown and described, it will be understood that many changes in the details of construction and the arrangements of parts may be made without departing from the spirit of the invention as set forth in the appended claims.

I claim:

1. A closure means for an overlap super freezer door comprising a bracket secured to the edge portion of the door, a lever pivoted intermediate its ends on said bracket for swinging movement in a plane at right angles to the plane of the door, a housing mounted on the door frame, a fulcrum plate pivotally supported by the housing, a stop for limiting the swinging movement of said fulcrum plate, said fulcrum plate being so disposed that the contact end of said lever will engage the fulcrum plate and swing it away from the stop and pass the same when the door is moved to closed position, permitting the fulcrum plate to swing back to normal position against the stop and serve as the fulcrum for said lever whereby pressure applied

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to the lever will force the door into tightly sealed closed position against a sealing gasket.

2. A closure means for an overlap super freezer door comprising a bracket secured to the edge portion of the door, a lever pivoted intermediate its ends on said bracket for swinging movement in a plane at right angles to the plane of the door, a housing mounted on the door frame, a fulcrum plate pivotally supported by the housing, a stop for limiting the swinging movement of said fulcrum plate, said fulcrum plate being so disposed that the contact end of said lever will engage the fulcrum plate and swing it away from the stop and pass the same when the door is moved to closed position, permitting the fulcrum plate to swing back to normal position against the stop and serve as the fulcrum for said lever whereby pressure applied to the lever will force the door into tightly sealed closed position against the sealing gasket, said lever when pulled upon operating to contact the door frame so as to forcibly release the door from the gasket and move the same to open position.

3. A closure means for an overlap super freezer door comprising a lever pivoted intermediate its ends to the edge portion of the door and adapted to swing in a plane at right angles to the plane of the door a housing mounted on the door frame, a fulcrum plate pivotally supported by the housing, a stop for limiting the swinging movement of the fulcrum plate, said fulcrum plate being so disposed that the contact end of the lever will engage said plate and swing it away from the stop and pass the same when the door is moved to closed position, permitting the fulcrum plate to swing back into normal position against the stop and serve as the fulcrum for said lever whereby pressure applied to the lever will force the door into tightly sealed closed position against the sealing gasket, said lever when pulled upon operating to contact the door frame so as to forcibly release the door from the gasket and move the same to open position.

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4. A closure means for an overlap super freezer door comprising a lever pivoted intermediate its ends to the edge portion of the door and adapted to swing in a plane at right angles to the plane of the door a housing mounted on the door frame, a fulcrum plate pivotally supported by the housing, a stop for limiting the swinging movement of the fulcrum plate, said fulcrum plate being so disposed that the contact end of the lever will engage said plate and swing it away from the stop and pass the same when the door is moved to closed position, permitting the fulcrum plate to swing back into normal position against the stop and serve as the fulcrum for said lever whereby pressure applied to the lever will force the door into tightly sealed closed position against the sealing gasket, and spring pressed latching means independent of said lever for holding the door in closed position, said lever when pulled upon operating to contact the door frame and forcibly release the door from the spring latching means.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
517,353	Millard	Mar. 27, 1894
1,078,549	Northey	Nov. 11, 1913
1,127,116	Thorne	Feb. 2, 1915
1,290,283	Mitchell	Jan. 7, 1919
1,532,447	Schrader	Apr. 7, 1925
1,861,579	North	June 7, 1932
2,046,892	Blum	July 7, 1936
2,147,794	Leonard et al.	Feb. 21, 1939
2,295,827	Breen et al.	Sept. 15, 1942
2,389,056	Jamison, Jr.	Nov. 13, 1945
2,405,887	Hoffman	Aug. 13, 1946
2,422,770	Blum	June 24, 1947