

June 19, 1934.

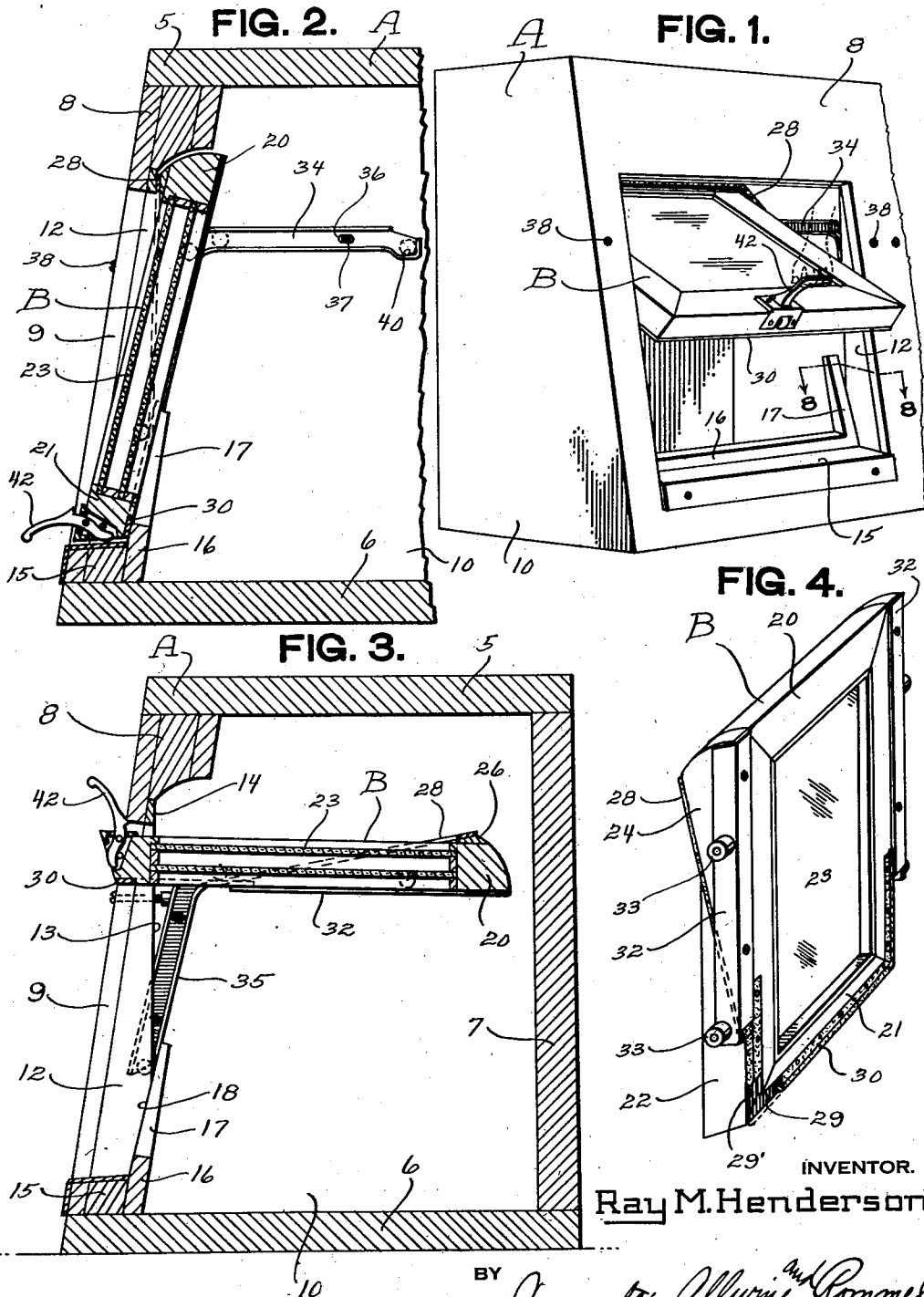
R. M. HENDERSON

1,963,089

CABINET DOOR

Filed Nov. 1, 1932

2 Sheets-Sheet 1



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FIG. 7.

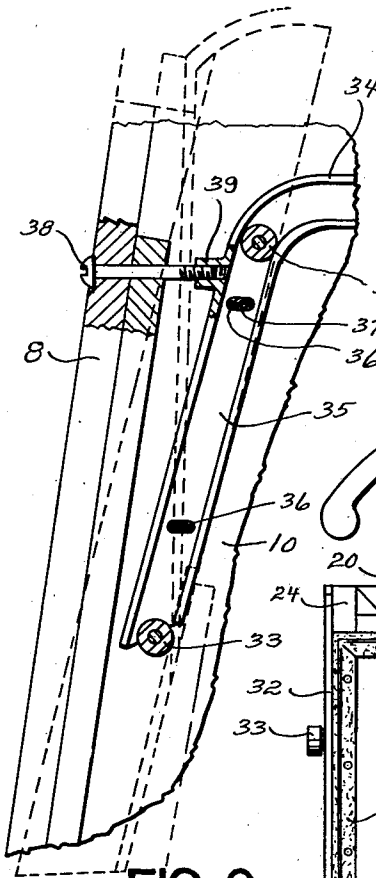


FIG. 6.

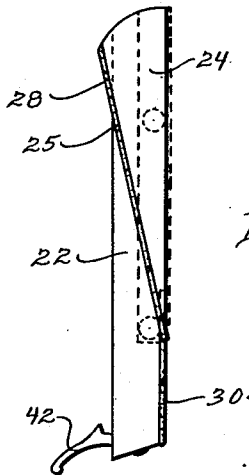


FIG. 8.

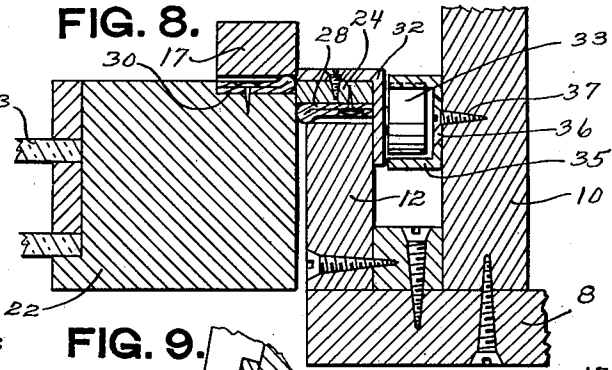


FIG. 9.

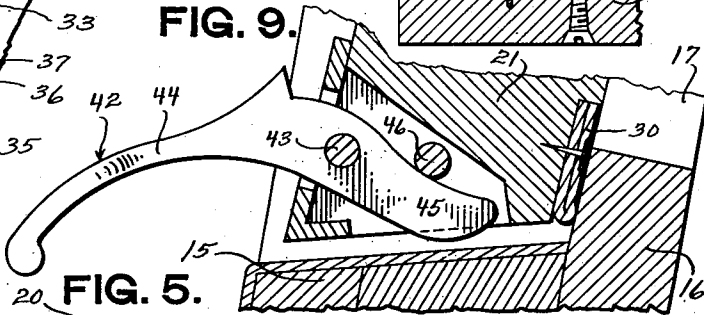
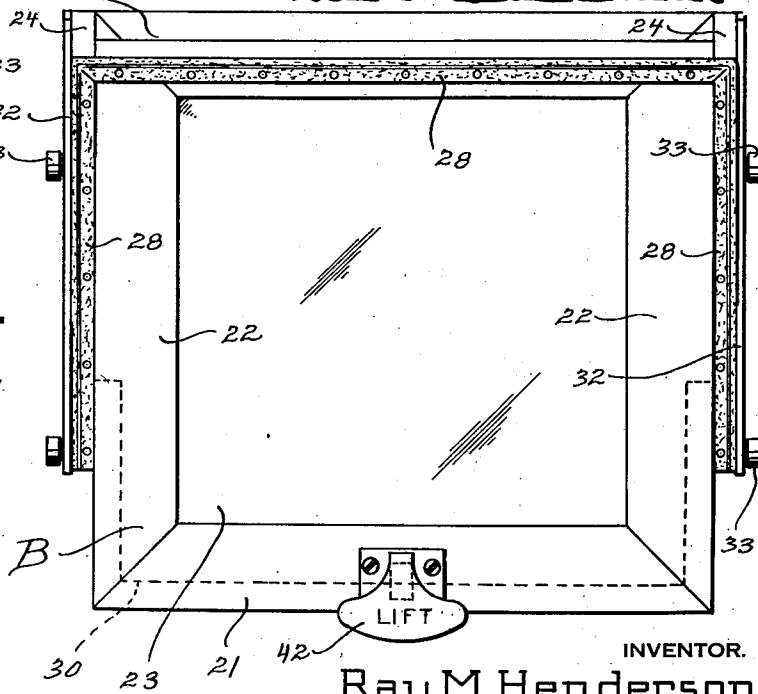


FIG. 5.



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CABINET DOOR

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13 Claims. (Cl. 312—189)

The present invention relates primarily to display cases or cabinets and the primary object of the invention is to provide an improved door construction and mounting for refrigerated cases or cabinets, or any other form of cabinet adapted for display purposes and wherein it is desired if not essential to have an air-tight or dust proof case or cabinet.

A further object is to provide a case or cabinet door of the sliding type, movable by gravity into a wedged sealing position over an opening to be closed thereby, and adapted to remain in a sealing position by its own weight without requiring the use of a latch or other fastening means.

A further object is to provide a door for refrigerated cases having an improved sealing arrangement whereby any slight wear upon the door gaskets will be automatically compensated for, and embodying means whereby the door may be quickly and easily adjusted so as to close with an air-tight fit against the door frame should such become necessary.

A further object is to provide a sliding door for refrigerated cases, wherein the door is partially movable through the opening to be closed thereby during opening and closing movement of the door, with an arrangement of sealing gaskets so carried by the door and extending at opposite sides thereof as to have sealing engagement with the door jamb with a wedging fit when the door is closed.

A further object is to provide a sliding door for refrigerated cases having a pivoted lift handle acting with a lever action for initially moving the door from a closed position and thereby allowing for ready and easy opening of the door should the door stick to the frame due to freezing or other causes.

Other objects and advantages of the invention will be apparent from the following detailed description, taken in connection with the accompanying drawings, forming a part of this specification and in which drawings:—

Figure 1 is a fragmentary perspective of a cabinet provided with the improved door and showing the door in a partially opened position.

Figure 2 is a vertical section showing the door closed.

Figure 3 is a vertical section showing the door in an open position.

Figure 4 is a perspective view of the door looking at the inner side thereof.

Figure 5 is an enlarged plan view of the door looking at the outer side thereof.

Figure 6 is an end elevation of the door showing the roller carrier angle removed.

Figure 7 is an enlarged fragmentary detail view showing the forward portion of one of the trackways for the door and the manner of adjusting the same.

Figure 8 is an enlarged fragmentary section on the line 8—8 of Figure 1, but showing the door closed.

Figure 9 is an enlarged fragmentary section through the lower portion of the door and the lift handle.

Referring to the drawings in detail, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A designates a cabinet of any preferred type and preferably a refrigerated cabinet, provided with the improved door B.

The cabinet A may be of any preferred construction and embodies the top and bottom walls 5 and 6 respectively, rear wall 7, a sloping front wall 8 provided with a doorway or opening 9, and the side walls 10 providing a compartment having the opening 9 to be closed by the sliding door B.

Secured inwardly of each vertical side edge of the door opening 9 is a wedge-shaped jamb piece 12 providing stops for the door B when closed in the opening 9. The inner or rear edges 13 of these wedge-shaped stops or jamb pieces 12 extend in angular relation to the plane of the front wall 8 and align with the rear face of a head piece 14 extending horizontally above the opening 9. These jamb pieces 12 as will be observed more clearly in Figure 8 are spaced slightly from the side walls 10 of the cabinet and extend flush with the opening 9. Provided at the lower side of the doorway 9 is the sill 15 provided along its inner side with the stop 16 against which the lower inner side of the door B abuts when closed. Projecting upwardly from each end of the stop 16 at the confronting surfaces of the jamb pieces 12 is a stop strip or block 17, the outer surfaces 18 of which are disposed in a plane traversing the plane of the surfaces 13 of the jamb pieces 12. Thus it will be noted that the forwardly facing surfaces of the stop strips 17 and upper portion of the stop 16 are arranged inwardly of the margins of the doorway 9, while the rearwardly facing surfaces of the jamb pieces 12 and head piece 14 are arranged outwardly of the margins of the doorway.

The door B for closing the opening or doorway 9 is formed with top and bottom rails 20 and 21

respectively and side rails 22 providing an open door frame in which transparent panels 23 such as of glass may be secured in any preferred manner. Secured to each side of the door frame upon the upper portions of the side rails 22 are wedge-shaped stops 24 which terminate short of the lower ends of the side rails and have their beveled edges 25 arranged in confronting relation to the edges 13 of the jamb pieces 12 when the door is closed. The top rail 20 is preferably rounded off as shown and is provided along its outer surface with a strip 26 having a surface in the plane of the beveled edges 25. Secured in any preferred manner along the beveled edges 25 and spacing strip 26 is a gasket 28 adapted to engage the surfaces 13 and head piece 14 when the door is closed.

The lower inner edge of the bottom rail 21 is rabbeted as at 29 and this rabbet is extended upwardly along the side rails 22 as at 29' to a point slightly above the lower end of the wedge-shaped stops 24. A gasket 30 is secured in the rabbets 29 and 29' at the inner side of the door to engage the stop 16 and top strip 17 when the door is closed. Thus, a substantially U-shaped gasket is provided at the upper outer side of the door and a substantially U-shaped gasket is provided at the lower inner side of the door with the ends of the gaskets at the side rails of the door extending beyond one another. With this arrangement, the door has a wedged sealing engagement with the margins of the doorway 9.

Secured along the straight inner edge of each wedge-shaped stop 24 is an angle-shaped roller carrier 32. Mounted upon each of the carriers 32 is a pair of rollers 33 and these rollers as will be observed in Figure 4 are spaced a substantial distance from the upper and lower edges of the door with the lower roller arranged at the lower end of the stop 24.

Mounted upon each side wall 10 is a channel-shaped trackway each formed with horizontal portion 34 having at its forward end a downturned portion 35 the lower ends of which are beveled off in an upward and rearward direction and terminate a short distance below the upper ends of the stop strips 17. The trackway portions 34 and 35 are each provided with elongated countersunk slots 36 adapted to receive fastening screws 37 for adjustably securing the trackways to the cabinet side walls. As will be observed, the elongated slots 36 extend longitudinally of the horizontal trackway portions 34 and substantially transversely of the downturned track portions 35 and permit adjustment of the trackways forwardly and rearwardly in the cabinet. As will be observed in Figure 8, the lower ends of the downturned track portions 35 extend between the cabinet side walls 10 and the wedge-shaped jamb pieces 12. An adjustment screw 38 for each trackway is extended through the front cabinet wall 8 at each side of the doorway 9 and these screws have threaded inner ends for threading into tapped bosses 39 provided adjacent the upper ends of the downturned track portions 35. In adjusting the trackways, the fastening screws 37 may first be loosened and then turning of the adjustment screw 38 will impart bodily movement to the trackway. This adjustment of the trackways insures proper seating engagement of the gaskets when the door is closed.

The rear end of the horizontal portion 34 of each trackway is slightly downwardly offset providing a shallow pocket 40 in which the upper

rollers 33 of the door engage for retaining the door in a horizontal open position.

A combined starting and lift handle 42 is provided for operating the door B and this device comprises a lever member intermediately pivoted as at 43 midway the ends of the lower door rail 21 and providing a grip portion 44 and a cam portion 45 having movement through the lower side of the rail 21 into engagement with the upper side of the sill 15. A stop pin 46 is provided for limiting upward swinging movement of the cam portion 45 by the weight of the grip portion 44. As will be observed in Figure 9, when a person lifts upon the grip portion 44 the cam portion 45 will bear upon the sill 15 so as to readily free the door should the same stick due to freezing or other causes.

The trackways serve to guide movement of the door B from a closed to an open position and vice versa, and by observing Figure 7 it will be noted that when the door is in a closed position, the two lower rollers are out of the lower ends of the downturned track portions 35 and thus permit the door to adjust itself to fit snugly at all points. The door is free at its top and bottom to pivot about the top two rollers.

When the door is closed, the upper rollers 33 are in the upper end of the downturned track portions 35 and thus force the beveled edges 25 of the wedge-shaped stops 24 against the edges 13 of the wedge-shaped jamb pieces 12. The downward pressure of the door due to its own weight, wedges the lower inner side of the door against the surfaces 18 of the stop strips 17 with a wedging action. When the door is slid to an open horizontal position, the rollers adjacent the top rail 20 engage in the shallow pockets 40 while the rollers adjacent the door rail 21 are at the forward ends of the horizontal track portions 34 so that the door is releasably held in an open position. When the door is closed with a wedging action closing the doorway 9, the lower portion of the door 9 moves through the opening 9 above the stop strips 17 and at the same time is guided downwardly by the track portions 35 so that the sealing gaskets 28 and 30 will seat with little or no sliding movement tending to wear the gaskets.

The particular wedging action of the door when closing allows for the door to automatically adjust itself so as to form a sealed joint at all points of contact. After the door has been in use for some time and the gaskets 28 and 30 become slightly compact or worn, resulting in loss of refrigeration, the door may be adjusted to seat properly by means of the adjustment screws 38. Adjustment of the screws 38 will vary the degree which the door may drop in the downturned track portions 35 for proper contact of the gaskets with the door frame. It will be noted that when the door is left in a partially open position such as shown in Figure 1, the door will automatically close due to its own weight and close with an airtight joint. When opening the door, the door will pivot about the rollers adjacent the lower rail 21 so that a part of the weight of the door is relieved from the operator.

Thus it will be seen that an improved type of sliding and frame doors for cabinets has been provided which is extremely well adapted for use in connection with display cases wherein an airtight joint is desired to prevent loss of refrigeration or to exclude dust and dirt from the cabinet. It will further be apparent that a novel arrangement is provided whereby the door closes with a wedging action due to its own weight and is

therefore extremely desirable for use in cabinets of the self-serving type in that it relieves the operator of any doubt as to whether the door is properly closed.

5 I claim:

1. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening, a wedge-shaped stop provided on each side edge of the door at the upper portion thereof, an outer gasket extended along the outer edge of each stop and across the upper outer side of the door, an inner gasket extended about the lower portion of the door on the inner face thereof in a plane in angular relation to the plane of the outer gasket, and framing about said opening providing oppositely facing angularly related seating surfaces for the gaskets.

2. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening, a wedge-shaped stop provided on each side edge of the door and terminating above the bottom of the door, an outer gasket extended along the outer edge of each stop and across the upper outer side of the door, an inner gasket extended about the lower portion of the door on the inner face thereof, a wedge-shaped jamb piece at each side of the opening and providing rearwardly facing seating edges for the gasket along said stops, and a stop strip at each side of the opening at the lower portion thereof and providing forwardly facing seating edges for said inner gasket.

3. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening and partially movable through the opening, a gasket secured along the upper portion and on the outer face of the door and having portions extending downwardly at each side edge of the door and terminating short of the bottom of the door, a gasket secured along the lower portion and on the inner face of the door and extending upwardly at each side of the door inwardly of the downwardly extending gasket portions, and a framing about said opening providing rearwardly facing gasket seating surfaces about the upper portion of the opening for the outer gasket, and forwardly facing gasket seating surfaces about the lower portion of the opening for the inner gasket.

4. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening, a gasket secured along the upper portion and at the outer face of the door and extending downwardly at each side edge of the door, a gasket secured along the lower portion and at the inner face of the door and extending upwardly at each side of the door, said gaskets being arranged in planes in angular relation to each other, and a framing about said opening providing rearwardly facing gasket seating surfaces about the upper portion of the opening and forwardly facing gasket seating surfaces about the lower portion of the opening, said gasket seating surfaces being arranged in planes in angular relation to receive with a wedging fit the gaskets on the door.

5. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening, a wedge-shaped stop provided at each side edge of the door and terminating short of the lower edge of the door, an outer sealing gasket about the upper portion of the door and extending along the stops, an inner sealing gasket about the lower portion of the door, a wedge-shaped jamb piece arranged at each side of the opening, and a stop strip extending upwardly at each jamb piece, said jamb pieces to be engaged

by the outer gasket and the stop strips to be engaged by the inner gasket.

6. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening embodying top and bottom rails and side rails, a wedge-shaped stop provided on each side rail at the upper portion thereof, an outer gasket extended along the outer side of the top rail and along the outer edge of the stops, an inner gasket extended along the inner side of the bottom rail and upwardly for a distance along the inner side of the side rails above the lower ends of said stops, a jamb piece at each side of the opening against which the gasket on the wedge-shaped stops abuts, and a stop strip at the lower end of each jamb piece against which the inner gasket abuts.

7. In a cabinet having a wall provided with an opening, a door, a sealing gasket provided about the upper outer side of the door, a sealing gasket provided about the lower inner side of the door, trackways provided at opposite sides of the opening each embodying a horizontal portion having a downturned portion at its forward end, sets of upper and lower guide rollers provided on each side of the door for travel in said trackways, a wedge-shaped jamb piece at each side of the opening providing rearwardly facing seating edges arranged in upwardly diverging relation to the downturned forward ends of the trackways, stop strips at each side of the opening having forwardly facing seating edges, said lower guide rollers being free from the lower ends of the downturned trackway portions when the door is closed upon the jamb pieces and stop strips, and means for independently adjusting the trackways forwardly and rearwardly in the cabinet.

8. In a cabinet having a wall provided with an opening, a framing about the opening providing opposed seating surfaces arranged in planes in angular relation which intersect each other at a point intermediate the height of the opening, and a door slidably guided to close the opening and having opposed seating surfaces arranged in planes in angular relation which intersect each other at a point intermediate the height of the door.

9. In a cabinet having a wall provided with an opening, framing about the opening providing upper and lower opening portions with the lower opening portion narrower than the upper opening portion, said opening portions providing oppositely facing seating surfaces arranged in planes in angular relation to each other and intersecting intermediate the height of the opening, and a door slidably guided for closing said opening and having a portion adapted to pass through the upper opening portion, said door having oppositely arranged seating surfaces arranged in planes in angular relation to each other and intersecting intermediate the height of the door for engaging upon the seating surfaces of the framing when the door is closed.

10. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening and having a narrow lower portion adapted to pass through the opening, and coacting angularly related seating surfaces provided on each side of the door and on the cabinet at each side of the opening to have wedging engagement for sealing the opening when the door is closing the opening.

11. In a cabinet having a wall provided with an opening, said opening being wider at its upper portion, a door slidably guided for closing the open-

ing and having a narrow lower portion movable through the wider upper portion of the opening, and co-acting, oppositely facing angularly related sealing surfaces provided on each side of the door and on the cabinet at each side of the opening to have wedging engagement for sealing the opening when the door is closed.

12. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening, an outer gasket secured along the upper portion and at the outer face of the door and extending downwardly and inwardly at each side edge of the door to the inner face of the door and terminating above the bottom of the door, an inner gasket secured along the lower portion and at the inner face of the door and extending upwardly in the plane of the door at each side of the door to points above the lower end of the outer gasket, and a framing about said opening providing rearwardly facing gasket seating surfaces about the upper portion of the opening for the

outer gasket, and forwardly facing gasket seating surfaces about the lower portion of the opening for the inner gasket.

13. In a cabinet having a wall provided with an opening, a door slidably guided for closing the opening and having its lower portion movable thru the upper portion of the opening, a wedge-shaped stop provided on each side edge of the door at the upper portion thereof and each providing a sealing edge extending diagonally across the edges of the door from the outer to the inner faces thereof, an outer sealing gasket about the upper portion of the door and extending along the sealing edges, an inner sealing gasket about the lower portion of the door at the inner face thereof, a wedge-shaped jamb piece arranged at each side of the opening for engagement by the outer sealing gasket, and a stop strip extending upwardly at each jamb piece to be engaged by the inner gasket.

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