March 26, 1957 A. T. TOBIASZ 2,786,240

CABINET

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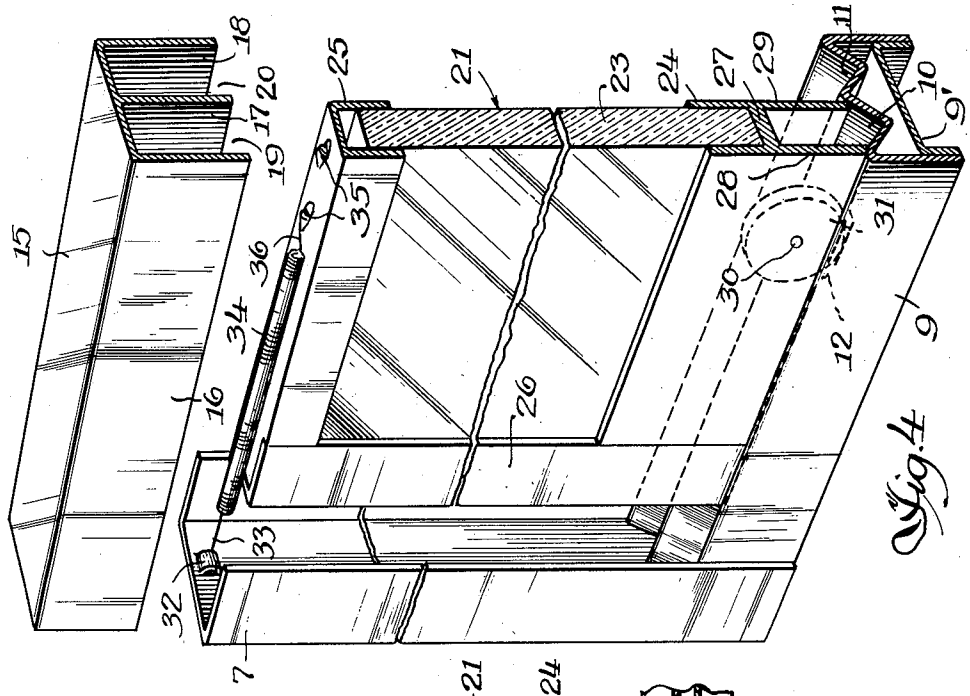


Fig. 4

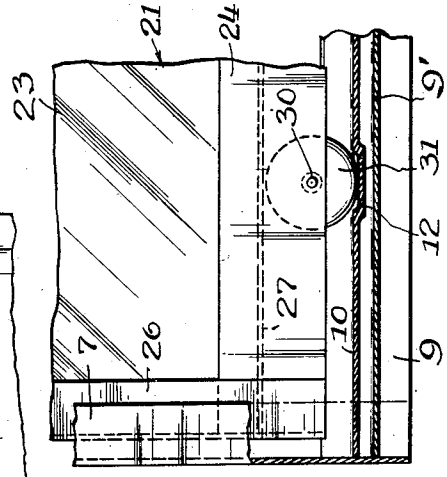


Fig. 3

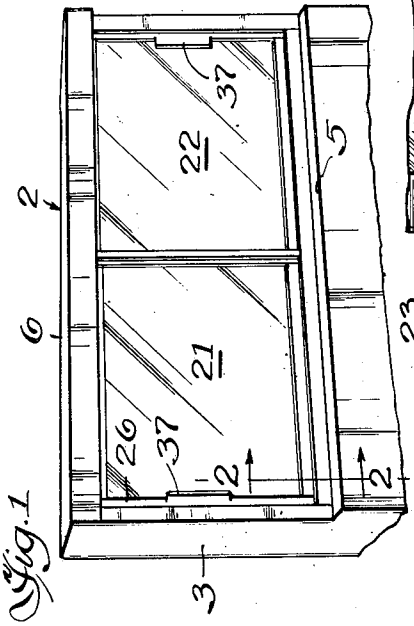


Fig. 1

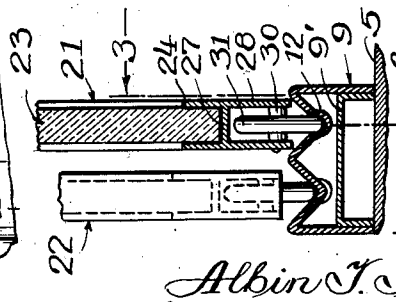


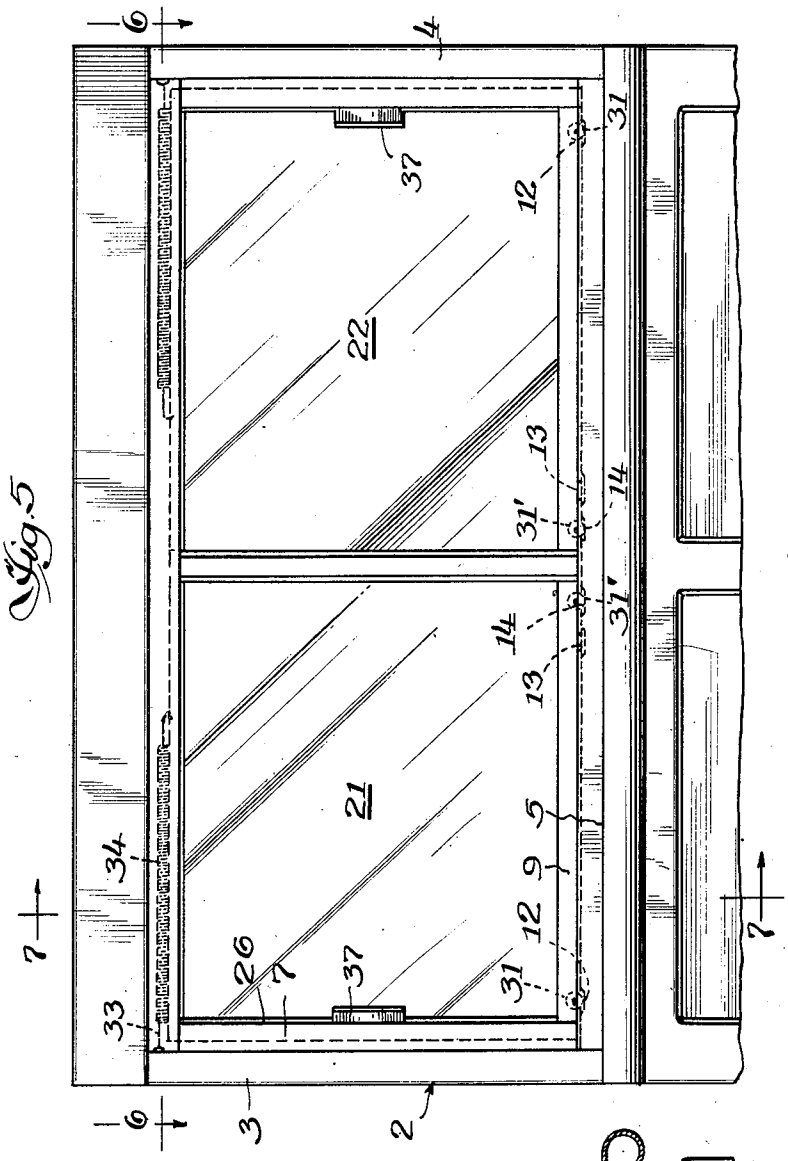
Fig. 2

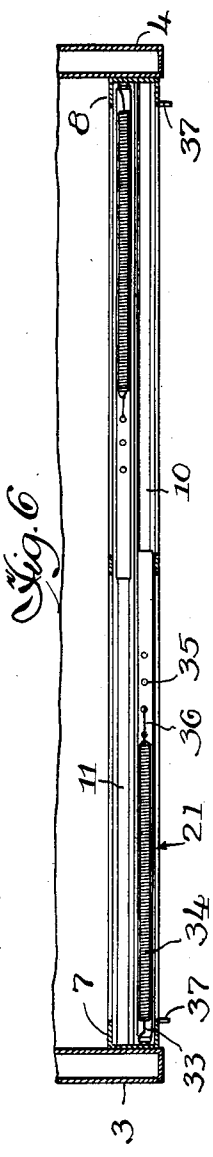
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By: Schneider & Dressler, Attys.

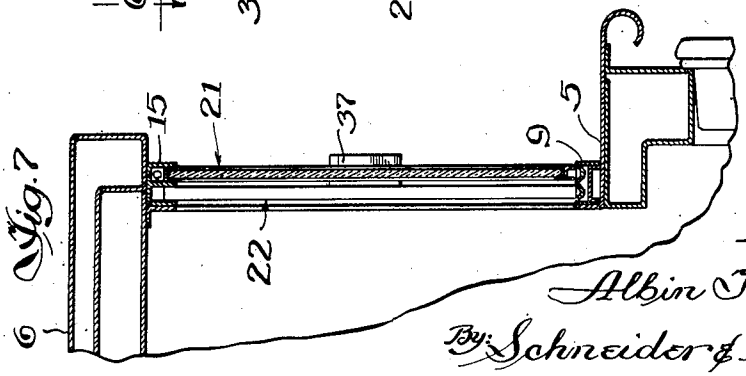
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CABINET

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CABINET

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Application January 30, 1956, Serial No. 562,282

6 Claims. (Cl. 20—19)

This invention relates to a cabinet provided with a self-closing sliding door, and is particularly concerned with cabinets used in restaurants for keeping food for service to customers.

Waitresses often forget to close the door after removing food from a food service cabinet, and sometimes leave the door open because the number of dishes removed from the cabinet may require the use of both hands. Failure to close the door of such cabinets is particularly disadvantageous in the case of refrigerated cabinets because of the resultant loss of refrigeration.

In accordance with the present invention a cabinet is provided with means for closing either sliding door automatically and for normally holding both doors closed. When the cabinet is being filled it is undesirable to have the door constantly closing. Accordingly, means are provided for holding either door open when it is moved to fully open position. Waitresses do not ordinarily open either door to fully open position in order to remove food from the cabinet, and therefore the means for holding the door open does not interfere with the automatic closing of the door in the normal use of the cabinet.

In refrigerated cabinets heretofore known the clearance between the doors and the frame required for the sliding engagement of the doors with the track of the frame results in some loss of refrigeration. In cabinets constructed in accordance with the present invention the sealing engagement of the doors with the frame is improved in the closed position of the doors, and the loss of refrigeration is substantially eliminated.

The structure by which the above and other advantages of the invention are attained will be described in the following specification, taken in conjunction with the accompanying drawings showing a preferred illustrative embodiment of the invention, in which:

Figure 1 is a fragmentary perspective view of a cabinet embodying the invention;

Fig. 2 is a cross sectional view, taken along the line 2—2 of Fig. 1;

Fig. 3 is a cross sectional view, taken along the line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary perspective view, with the top channel lifted from its normal position to facilitate illustration of the door structure;

Fig. 5 is a fragmentary front elevational view of the cabinet;

Fig. 6 is a cross sectional view, taken along the line 6—6 of Fig. 5; and

Fig. 7 is a cross sectional view, taken along the line 7—7 of Fig. 5.

Referring to the drawings, the reference numeral 2 indicates a cabinet having end walls 3 and 4, a bottom wall 5, and a top wall 6. A vertical channel 7 is mounted adjacent the front edge of end wall 3, and a similar channel 8 is mounted adjacent the front edge of end wall 4. Channels 7 and 8 are of equal size and the side walls of each channel extend towards the opposite channel. A track 9, mounted on the bottom wall 5 of the

cabinet, extends across the front of the cabinet between the lower ends of channels 7 and 8. The ends of track 9 fit snugly between the side walls of channels 7 and 8. Track 9 is preferably reinforced throughout its length by an inverted channel 9'. The top of track 9 is divided into two parallel guide channels 10 and 11 each of which has a V-shaped cross section. The bottom of each guide channel has three longitudinal depressions 12, 13 and 14. Depression 12 is spaced a predetermined distance from end wall 3. Depressions 13 and 14 are spaced from depression 12 a distance slightly less than half the length of the track. The reasons for the V-shaped cross section of the guide channels and the depressions in the guide channels will be discussed later.

An upper track 15 is mounted on the underside of top wall 6 adjacent its front edge. Track 15 is provided with three downwardly extending walls 16, 17 and 18 which form parallel guide channels 19 and 20 aligned vertically with guide channels 10 and 11. The width of track 15 is the same as that of channels 7 and 8, and the lower edges of side walls 16 and 18 abut the upper edges of the sides of channels 7 and 8 with which they are aligned.

A door 21 is slidably mounted between guide channels 10 and 19, and a door 22 is slidably mounted between guide channels 11 and 20. Since these doors are alike and both are mounted in the same manner, only one door will be specifically described, it being understood that the description applies to both doors.

Each door comprises a glass panel 23 mounted in a metal frame comprising a bottom channel 24, a top channel 25, and an end channel 26. Another end channel may be provided at the opposite end of the glass panel, if desired. Channel 24 is provided with a horizontal web 27, against which the lower edge of glass panel 23 is seated, and with a pair of depending walls 28 and 29 which form a lower channel having an open bottom. Two studs 30 extend transversely of the lower channel and are secured in depending walls 28 and 29. A roller 31 is rotatably mounted on one stud 30 and a similar roller 31' is mounted on the other stud. The rollers have a diameter large enough so that the periphery of the roller extends below the lower edges of side walls 28 and 29. The studs are so positioned that when the door is in closed position, that is with the end of channel 26 abutting the inner surface of channel 7, roller 31 is in registration with depression 12 and roller 31' is in registration with depression 14.

The depressions are comparatively shallow so that the door may be moved easily. A transverse pull on the door causes both rollers to move out of the depressions and roll along the bottom of channel 10. The depressions are deep enough to hold the door in closed position against accidental movement of the door. In addition to holding the door closed against accidental displacement, the depressions improve the seal between the door and the cabinet when the door is in closed position. When rollers 31 and 31' are in rolling contact with the upper surface of channel 10 a slight clearance is required between the lower edges of depending walls 28, 29 and the upper surface of the channel to permit the door to slide easily. Channel 24 is slightly narrower than channel 10, and walls 28 and 29 are aligned vertically with the sloping surfaces of channel 10. When rollers 31 and 31' drop into depressions 12 and 14, the angular configuration of the top of channel 10 causes the lower ends of side walls 28 and 29 to engage the surface of channel 10 upon very slight downward movement of the door, thereby forming an efficient seal for retention of refrigerated air in the cabinet.

A loop 32 is secured to the upper edge portion of channel 7, and one end 33 of a tension spring 34 is hooked into the loop. Any suitable form of attaching device may be

used instead of loop 32. If desired, a hook may be used, and the end 33 of the spring may be curled into an eye member to engage the hook to hold the end of the spring in place. The upper surface of channel 25 is embossed to provide a plurality of spaced hook engaging members 35. The opposite end 36 of spring 34 is curled to form a hook adapted to engage any of the embossments 35, depending upon the amount of tension desired for the spring. The embossments 35 face away from channel 7 so that hook end 36 of the spring engages a sharp edge that prevents it from slipping out of engagement. Each door is provided with a handle 37, of any suitable shape, to facilitate manipulation of the door. As shown, handle 37 is integral with channel 26, but it may be formed separately and secured to the door in any suitable manner. A slight force against handle 37 is sufficient to move the door into open position against the holding engagement of rollers 31 and 31' with depressions 12 and 14. Normally the door is opened far enough to provide access to the cabinet, and when the required dish or dishes are removed the force is released. Upon release of the force holding the door open spring 34 retracts the door into its closed position. The action of the spring prevents the user from unintentionally leaving the door open, and keeps the door closed as much as possible consistent with the normal use of the cabinet. Accordingly, loss of refrigeration due to the opening of the door is kept at a minimum, thus increasing the efficiency of the cabinet and reducing its maintenance cost.

Whenever it is necessary to keep the door open, as when the cabinet is being filled, the door is opened to its fully opened position, and roller 31 drops into depression 13. The holding engagement of roller 31 with depression 13 is sufficient to hold the door in fully opened position until the door is manually moved towards closed position. As soon as roller 31 is forced out of depression 13 spring 34 pulls the door to its closed position. Although a cushioning member may be provided within channel 7, it is preferred to have the tension of spring 34 light enough so that the door will not slam when the spring pulls it shut.

While I have described a preferred embodiment of my invention in considerable detail, it will be understood that the description thereof is illustrative, rather than restrictive, as many details may be modified or changed without departing from the spirit or scope of my invention. Accordingly, I do not desire to be restricted to the exact structure described.

I claim:

1. In a cabinet, a guide channel, a door having a pair of rollers rotatably mounted thereon, said rollers being in rolling contact with said channel, spring means urging said door to its closed position, and means engaging one of said rollers in one predetermined position of said door to hold said door against the action of said spring means.

2. In a cabinet, a guide channel, a door having a pair of rollers rotatably mounted thereon, said rollers being in rolling contact with said channel, spring means urging said door to its closed position, and a depression in said channel, one of said rollers fitting in said depression when said door is opened to a predetermined position to hold said door in said predetermined position against the action of said spring means.

3. In a cabinet, a guide channel, a door having a pair of rollers rotatably mounted thereon, said rollers being in rolling contact with said channel, spring means urging said door to its closed position, a pair of depressions in said channel engageable by said rollers when said door is closed to hold it against accidental opening, and another depression engageable by one of said rollers when said door is open to hold said door open against the action of said spring means.

4. In a cabinet, a guide channel having a top surface of angular shape in cross section, a door having a bottom edge aligned with said channel, a pair of rollers rotatably mounted on said door adjacent its bottom edge, the periphery of each roller extending below the bottom edge of said door, said rollers being in rolling contact with the angular top surface of said channel and the bottom edge of said door being spaced above said angular top surface to provide clearance for sliding movement of said door, and a pair of depressions in said channel, said rollers fitting in said depressions when said door is in closed position, the bottom edge of said door being in contact with said angular top surface of said channel when said rollers are positioned in said depressions.

5. In a cabinet, a guide channel having a top surface of angular shape in cross section, a door having a bottom edge aligned with said channel, a pair of rollers rotatably mounted on said door adjacent its bottom edge, the periphery of each roller extending below the bottom edge of said door, said rollers being in rolling contact with the angular top surface of said channel and the bottom edge of said door being spaced above said angular top surface to provide clearance for sliding movement of said door, a pair of depressions in said channel, said rollers fitting in said depressions when said door is in closed position, the bottom edge of said door being in contact with said angular top surface of said channel when said rollers are positioned in said depressions, and spring means urging said door to its closed position when said rollers are spaced from said depressions.

6. In a cabinet, a guide channel having a top surface of angular shape in cross section, a door having a bottom edge aligned with said channel, a pair of rollers rotatably mounted on said door adjacent its bottom edge, the periphery of each roller extending below the bottom edge of said door, said rollers being in rolling contact with the angular top surface of said channel and the bottom edge of said door being spaced above said angular top surface to provide clearance for sliding movement of said door, a pair of depressions in said channel, said rollers fitting in said depressions when said door is in closed position, the bottom edge of said door being in contact with said angular top surface of said channel when said rollers are positioned in said depressions, spring means urging said door to its closed position, and another depression in said channel, one of said rollers fitting in said last mentioned depression when said door is in predetermined open position, said last mentioned depression holding said one roller to prevent movement of said door from said predetermined open position to closed position under influence of said spring.

No references cited.