

[54] **CABINET DOOR MOUNTING**

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[58] Field of Search **49/386;**
312/326-329, 311, 276; 126/191, 194

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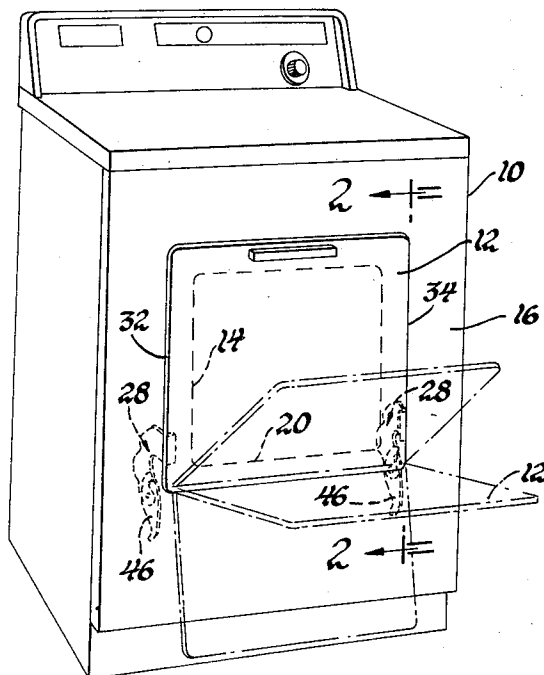
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[57]

ABSTRACT

A door pivotally mounted about a horizontal axis on the front surface relative to a cabinet access opening. Sector brackets having a cam surface and retaining recesses are attached to each side of the door for movement into and out of the cabinet. Spring biased detent members are positioned on the inner side of the cabinet front surface continuously engaging the sector brackets releasably retaining the door in open positions of varying degrees so the door can be utilized as a chute, a shelf, or be moved to a non-obstructing open position. Engagement of the detent members with the cam surfaces continually urges the door closed.

2 Claims, 3 Drawing Figures



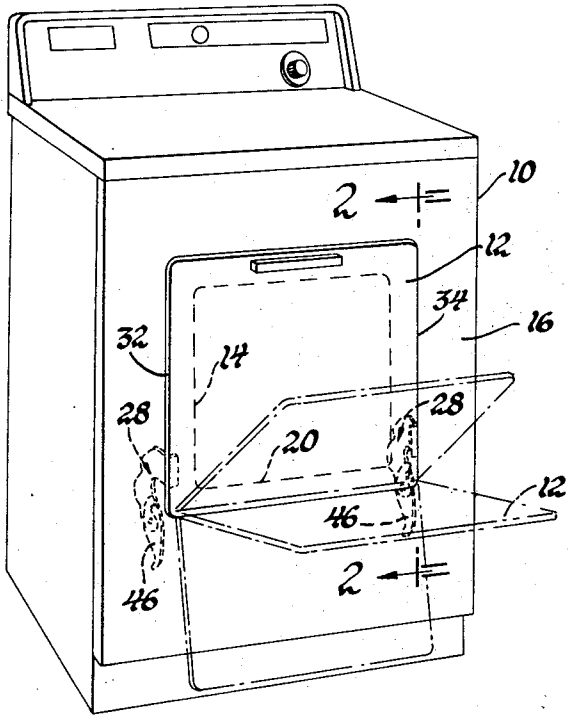


Fig. 1

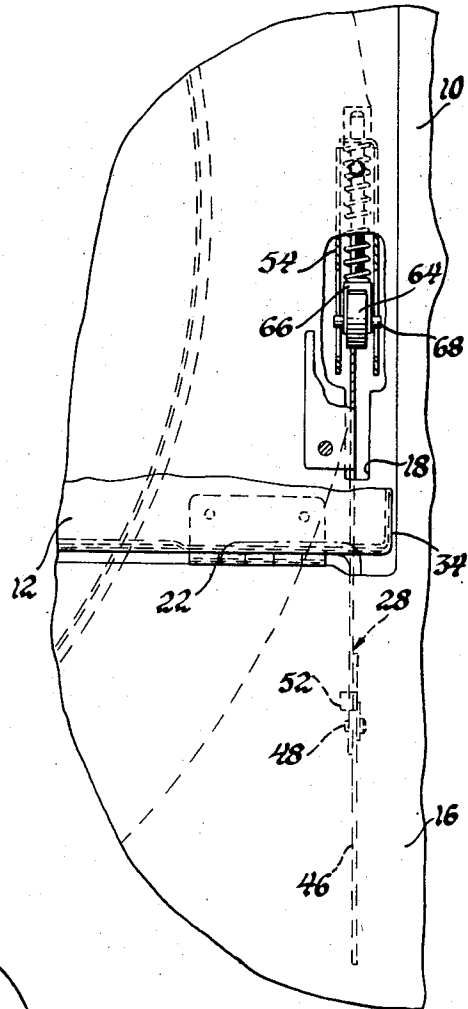


Fig. 3

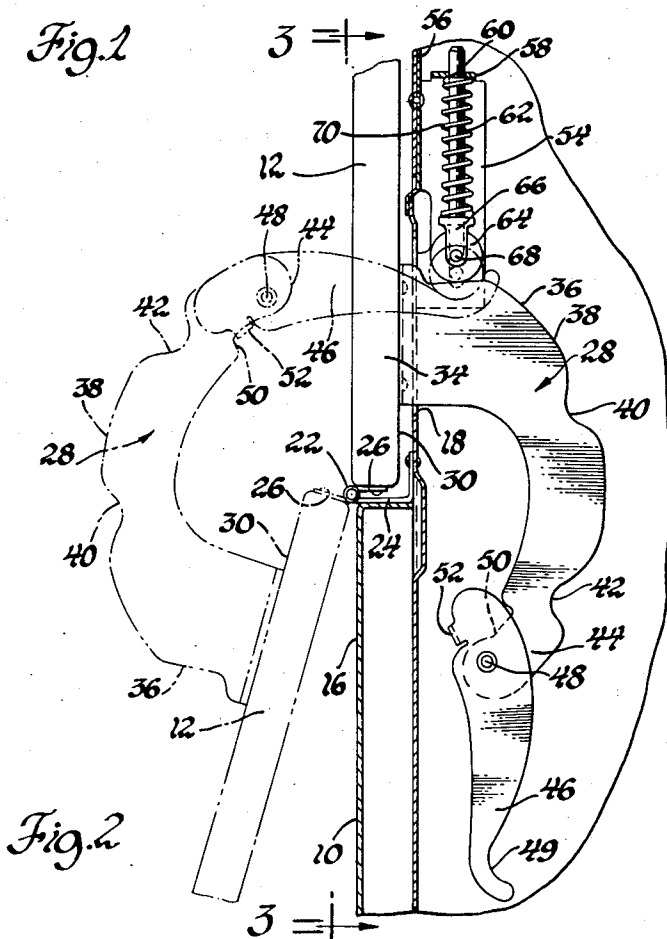


Fig. 2

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CABINET DOOR MOUNTING

This invention relates to a cabinet door mounting releasably retaining the door in various open positions. More specifically, it relates to a door mounting wherein a vertically movable door may be positioned as a chute feeding materials into the cabinet, as a shelf, or be fully actuated to a non-obstructing position.

In general application appliance cabinet doors are movable between a fully opened position and a fully closed position without any particular retaining means incorporated therewith. The door only performs the function of opening and closing the access opening in this type of arrangement. It is therefore the purpose of this invention to provide an appliance cabinet door capable of being releasably positioned in a plurality of opened positions, varying the degree of movement opened with a particular additional function in mind, that is, a function of utilizing the door for a purpose other than to merely open and close the opening. In the subject invention the door can be moved to a first partially opened position and serve as a surface or chute to convey clothes, for example, into a clothes dryer. Further movement of the door to a second releasably retained further open position provides a shelf surface for supporting articles while placing them within or removing them from the machine. Movement of the door to a fully opened position places the door downwardly adjacent the front cabinet surface in a non-obstructing position so that the appliance is more accessible to the operator.

Accordingly among the objects of this invention is the provision of an appliance door movable to open positions of varying degrees to perform an additional function and utilize the surface of the door as desired.

Another object of this invention is the provision of a sector bracket secured to the cabinet door wherein the bracket comprises a cam surface engageable by a spring biased detent maintaining and urging the door fully closed.

A still further object of this invention is the provision of a releasable retaining means continually urging the door closed eliminating the necessity of a latch mechanism.

Another object of this invention is the provision of a sector bracket secured to the appliance door and extending within the cabinet comprising retaining recesses and a pivotally mounted pawl on its terminal end engageable with a spring biased detent member allowing for movement of the door to its fully opened position; the pawl pivoting in response to gravity during closing movement of the door to extend in a vertical position eliminating interference between the sector bracket and the front cabinet surface.

In the drawings:

FIG. 1 is a perspective view of a cabinet incorporating the door mounting of the subject invention.

FIG. 2 is a partial sectional view taken on line 2—2 of FIG. 1.

FIG. 3 is a partial sectional view taken on line 3—3 of FIG. 2.

Referring to FIG. 1, a clothes drying cabinet 10 is shown having a door 12 pivotally mounted thereon in accordance with this invention. The clothes drying cabinet 10 has an access opening 14 in front cabinet surface 16 that is closed by the door 12. Surface 16 contains vertical slots 18 on either side and in proximity

of the lower edge 20 of opening 14 for a purpose later to be described.

As best illustrated in FIG. 2, the door 12 is pivotally mounted on the cabinet 10 by a horizontally extending hinge assembly 22. One hinge plate 24 is secured to the cabinet while the other plate 26 is attached to the door 12. A sector bracket 28 is secured to inner surface 30 adjacent the side edges 32 and 34 of the door 12. The sector brackets 28 are positioned in alignment with cabinet slots 18 and extend therethrough into the cabinet interior. The upper surfaces 38 of the brackets 28 contain a cam surface 36 adjacent the inner door surface 30 and at least two retaining recesses 40 and 42 located progressively outwardly away from the door. The brackets 28 have terminal ends 44, each freely pivotally supporting a pawl 46 by a pin 48. The pawls 46 contain a retaining recess 49. Ends 44 contain a notch 50 receiving a laterally bent stop 52 formed on each of the pawls 46.

A bracket 54 is secured to the inner surface 56 of cabinet front surface 16 on each side of the opening 14. The bracket 54 comprises a lateral flange 58 containing an aperture 60 receiving pin 62 attached to a detent member 64. The pin 62 is secured to a clevis 66 rotatably mounting the detent member 64 on a pin 68. A spring 70 is positioned between the flange 58 and the clevis 66 continuously urging the detent member into engagement with the upper surface 38 of the sector bracket 28.

In operation, when closed, the door 12 positions the sector bracket 28 interiorly of the cabinet with its terminal end 44 adjacent front surface 16. The pawl 46 pivots on pin 48 in response to gravity assuming a substantially vertical position shown in FIG. 2. It is apparent that the pawl 46 must be pivotally mounted in this manner to avoid interference with the cabinet front surface 16 when the door is moved fully closed.

Movement of the door 12 to a first open position wherein detents 64 engage retaining recesses 40, places the door approximately 45° from vertical as shown by broken lines in FIG. 1. In this position the door 12 can be utilized as a chute with the inner surface 30 conveying articles through opening 14 into the cabinet. When the door is moved further open, engaging detents 64 with retaining recesses 42, the door is substantially normal to the front surface 16. The inner surface 30 can be used as a shelf for handling articles while placing them into or removing them from the cabinet. This position of the door is also illustrated by broken lines in FIG. 1. Further door opening movement causes the detents 64 to ride upwardly out of recesses 42 and engage bracket upper surface 38 while compressing springs 70. The detents 64 eventually engage pawls 46 and rotate them counterclockwise about pivot pins 48 until the stops 52 engage notches 50 in the sector brackets. The pawls 46 conform the arc of the sector brackets 28 and constitute a continuation thereof in this position. The door is moved further open until the detents 64 engage the pawl retaining recesses 49 whereby the door is releasably retained in a fully opened position. As is best illustrated in FIG. 2, the door in this position is rotated approximately 165° extending downwardly in close proximity of the cabinet front surface 16. The opening 14 is readily accessible with the door moved to this non-obstructing location.

From the above description it is apparent the cabinet door is releasably retained in open positions varying in degree depending upon which recess the detents engage. Movement of the door compress the spring 70 as the detents leave the recess and ride upon the bracket surface 36 providing for relatively easy movement of the door while the spring biases the detents into the recesses positively holding it in a selected position. The utilization of the pivotal pawls 46 permit movement to a fully opened position while preventing interference with the cabinet front surface when the door is closed.

A preferred embodiment of this invention has been described for purposes of illustration only and the scope of the invention is not intended to be limited thereby except as required by the following appended claims.

I claim:

1. In an appliance cabinet having a front access opening therein and a door pivotally mounted to said cabinet movable for closing and opening said access opening; a sector bracket secured to said door adjacent a vertical edge thereof and having a terminal end extending within said cabinet, a cam surface on the upper edge of said sector bracket adjacent said door, a plurality of door retaining detent recesses also in the upper surface of said sector bracket located progressively away from said door toward said terminal end, means pivotally mounted on the terminal end of said sector bracket providing an additional detent recess, said means pivoting into a position out of interfering engagement with the front surface of said cabinet when said door is moved to a closed position, stop means on said pivotally mounted means engaging said sector bracket when said pivotally mounted means is rotated forming a continuation of said sector bracket providing an additional detent recess, and a spring biased detent member mounted on the inner surface of said cabinet adjacent the access opening in alignment with said sector bracket continually engaging the upper surface thereof, said detent member engaging said recesses releasably holding said door in one of a plurality of open positions and engaging said cam surface continually urging the door toward the cabinet when the door is in its closed position, said detent member engaging said pivotal means and rotating the same during

opening movement of said door to a downwardly extending position adjacent the front surface of said cabinet until said detent engages said additional recess retaining the door fully open.

2. In an appliance cabinet of the type having an access opening in the front vertical surface thereof and a door pivotally journaled at its lower edge relative to the front access opening; a pair of sector brackets secured to said door adjacent the opposite vertical edges thereof and each having a terminal end extending within said cabinet through vertically formed slots therein, a cam surface on the upper edge of said sector brackets adjacent said door, a first door retaining detent recess formed in the upper surface of each of said sector brackets, a second detent recess formed in each of said sector brackets inwardly of said first recess, means pivotally mounted on the terminal ends of said sector brackets providing a third detent recess and pivoting out of interfering engagement with the front vertical surface of said cabinet when said door is closed, stop means on said pivotally mounted means engaging said sector bracket when said pivotally mounted means is rotated forming a continuation of said sector bracket providing a third detent recess, and a spring biased detent assembly secured to the inner surface of said cabinet adjacent each side of the access opening whereby a detent member is continuously biased into sliding engagement with the upper surface of each of said sector brackets, said detents engaging said first recesses to retain said door in a partially opening position whereby said door forms a sliding surface for conveying articles into the cabinet through said access opening, said detents engaging said second recesses releasably retaining said door in a further open position whereby said door forms a shelf for the placement of articles thereon prior to insertion within the cabinet and while removing articles therefrom, said detents engaging said pivotal means and rotating the same during opening movement of said door to a third downwardly extending position adjacent the front vertical surface of said cabinet until said detents engage the third recess in said pivotal means thereby retaining the door fully open, said detents engaging said cam surfaces to urge said door toward said cabinet when said door is moved to a fully closed position.

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