Jan. 20, 1959 O. V. SAUNDERS 2,869,952

DOOR LATCH

Filed April 24, 1957 2 Sheets-Sheet 1

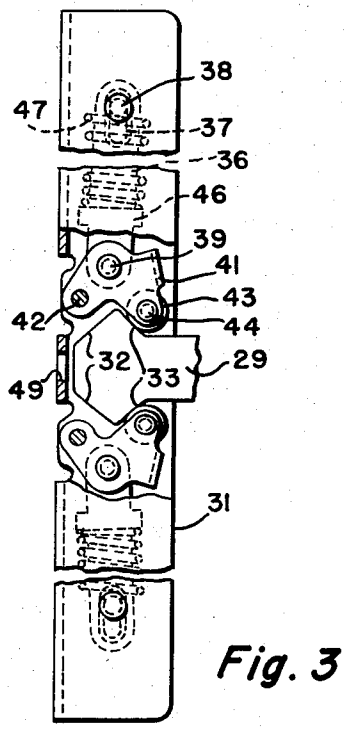


Fig. 3

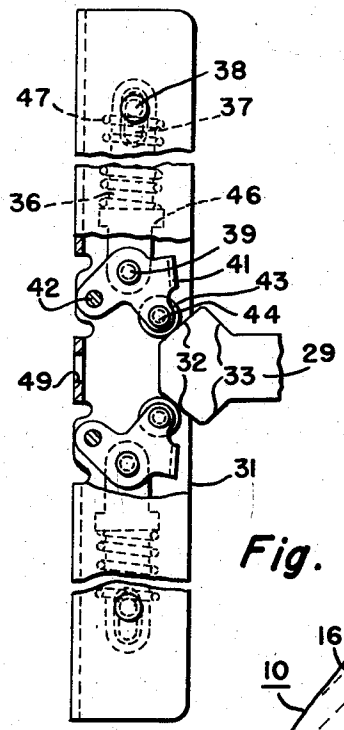


Fig. 4

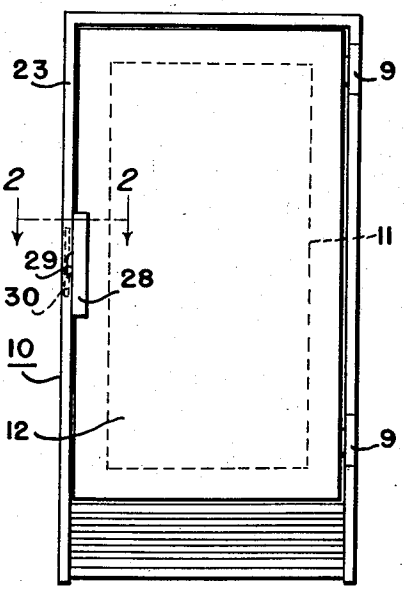


Fig. 1

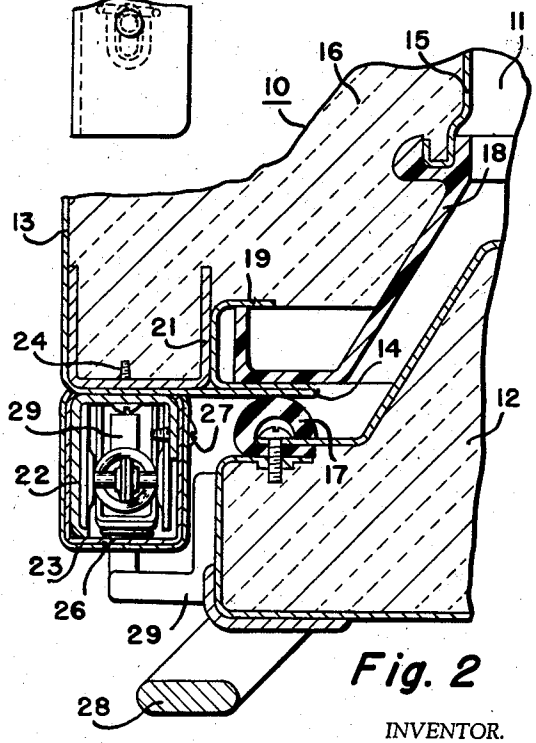


Fig. 2

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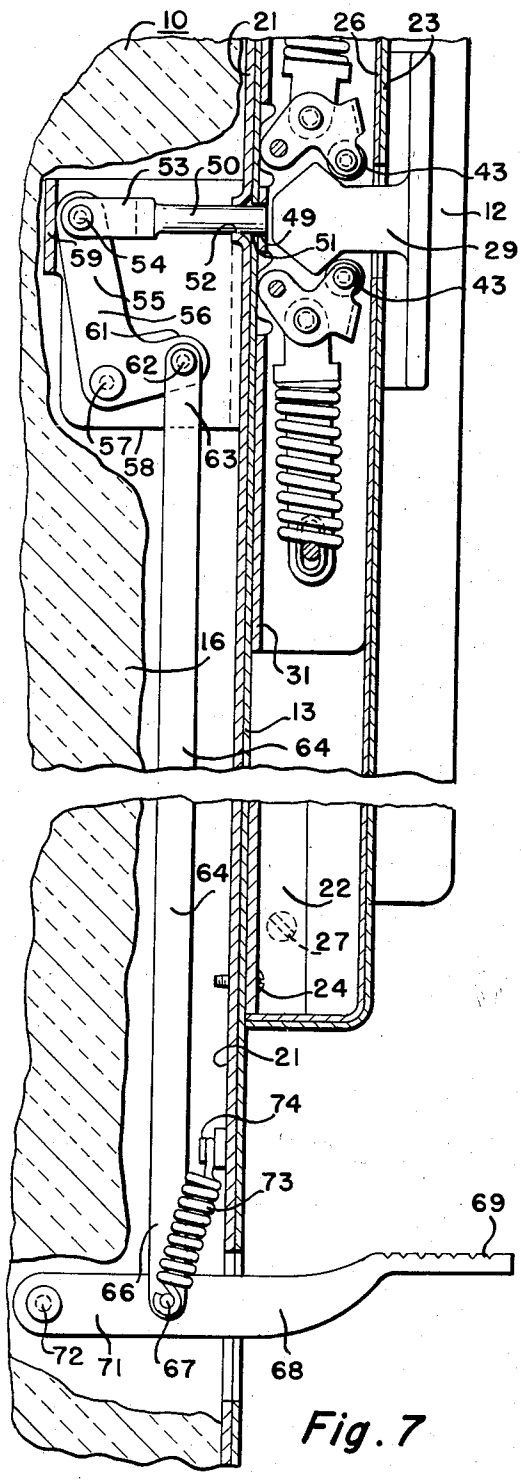


Fig. 7

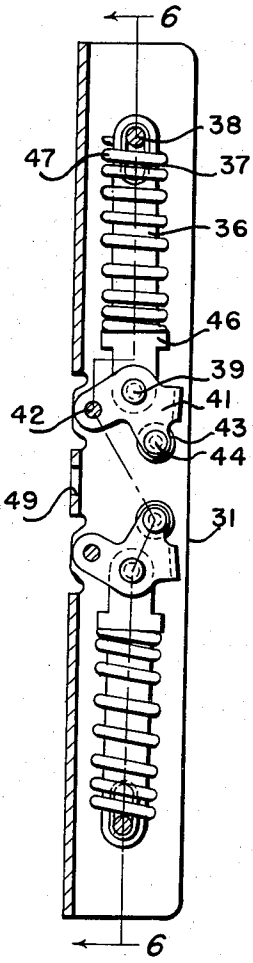


Fig. 5

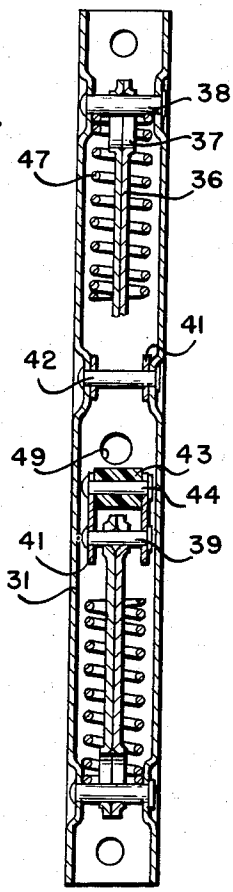


Fig. 6

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DOOR LATCH

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4 Claims. (Cl. 312—214)

This invention relates to door latches and particularly to a latch for the door of a refrigerator cabinet.

Latch mechanisms for refrigerator cabinet doors have in the past usually included a manually movable latch handle which would trip the latch mechanism or open jaws thereof to release a keeper or striker for unlatching the door from the cabinet to permit same to be swung open. The handles for such latches were rather long and would project outwardly of a refrigerator cabinet door so far as to hamper a housewife passing back and forth in front of the cabinet while working in a kitchen. Movable refrigerator cabinet door latch handles required a housewife to exert force thereto not only in a direction to open the door but also in another direction so as to pivot the handle about its mounting. Furthermore such latches on refrigerator cabinets were devoid of means permitting the door of the cabinet to be opened from interiorly thereof and thus created a hazard in that children could be trapped in an abandoned or discarded refrigerator during the course of their play. I therefore in addition to providing a latch that will overcome objections to latches having a movable handle also contemplate a latch for a refrigerator cabinet door which is releasable in response to a small force applied to the door from within the cabinet by a child trapped therein so as to prevent the child being suffocated.

An object of my invention is to provide an improved spring pressed mechanical latch for a refrigerator cabinet door which will firmly secure the door shut in closed position and yet enable the door to be released from the cabinet and swung open by merely exerting a slight pulling force on the door or by applying a small pushing force to the door from within the cabinet.

Another object of my invention is to provide a latch for a refrigerator cabinet door that is durable, reliable in operation and consists mainly of parts which can be stamped from sheet metal and are therefore economical to manufacture.

A further object of my invention is to provide a latch for a refrigerator cabinet member which requires a minimum of effort to latch the door member thereon closed and which thereafter biases the door member toward the cabinet member with a slight force to render a resilient gasket located between the members sealingly engageable with both members so as to substantially retard heat loss into the cabinet at or around the door opening.

In carrying out the foregoing objects a still further and more specific object of my invention is to provide a door latching device which when latched will bias a door against a cabinet and to arrange opposed spring pressed movable gripping or roller members of the latch mechanism so that these members alternately engage simultaneously oppositely inclined companion cam surfaces on opposed sides of a latch striker element on the door upon closing and/or opening same whereby the force required to actuate the movable mechanism is reduced to a minimum while retaining an effective biasing action thereof.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings,

wherein a preferred form of the present invention is clearly shown.

In the drawings:

Figure 1 is a front view of a refrigerator cabinet having my improved latch mechanism incorporated therein;

Figure 2 is an enlarged fragmentary sectional view taken on the line 2—2 of Figure 1 showing the refrigerator cabinet door held closed by my latch mechanism;

Figure 3 shows my latch mechanism or structure removed from the refrigerator cabinet with portions of the latch casing broken away to indicate the position of parts of the latch when the door is fully closed and illustrating certain surfaces of a striker element on the cabinet door engaged by gripping members of the mechanism;

Figure 4 is a view similar to Figure 3 indicating the refrigerator cabinet door being opened with gripping members of the latch mechanism engaging outer surfaces on the striker element;

Figure 5 is a view similar to Figures 3 and 4 with the striker element removed from the latch mechanism to indicate the position of parts of the mechanism when the door is opened;

Figure 6 is a sectional view taken on the line 6—6 of Figure 5 showing a pivotal mounting and swingable attachment of parts of the latch mechanism or structure to the latch casing; and

Figure 7 is a fragmentary broken sectional view of front portions of the refrigerator cabinet disclosed in Figure 1 showing a foot pedal operated device for moving the cabinet door out of latching engagement with my latch structure.

Referring to the drawings, for a better understanding of the descriptions which follow and for illustrating my invention, reference numeral 10 generally designates a household refrigerator cabinet member having a plurality of insulated walls forming a food storage compartment 11 therein. The food compartment 11 is provided with a forwardly facing access opening normally closed by an insulated door structure or member 12 which may be of any suitable or conventional construction. Door 12 is pivotally mounted on cabinet 10 for horizontal swinging movement relative thereto by a pair of hinges 9. As best shown in Figure 2 of the drawings the cabinet member 10 includes an outer metal shell 13 having an inturned flange 14 at its front edge and an inner metal liner 15, forming walls of the food compartment 11, spaced from shell 13 with any suitable or desirable but preferably packaged or wrapped insulating material 16 disposed between the shell and liner. The inturned part of shell 13 forms a flat face or shoulder at the front of the insulated wall portion of cabinet 10 which is adapted to be engaged by a bulbular sealing portion of a resilient gasket 17 attached to door member 12 and extending therearound. A resilient non-metallic or molded plastic breaker strip 18 is snapped or wedged in place between an integral extension 19 of the flange 14 and a bent portion of the front edge of liner 15 to form the throat or collar portion of the food compartment opening. A metal reinforcing or stiffening channel member 21 is provided behind the flanged front portion of shell 13. A plurality of trim strip mounting brackets 22 are attached to and extend along the front edge or face of the insulated cabinet walls for supporting a door edge guard or trim strip 23. The brackets 22 are in spaced apart sections or lengths of approximately eight inches long and are held in place by means of self-tapping metal screws 24 which pass through shell 13 into channel 21. The length of brackets 22 and the spacing apart thereof may be varied and would be different with various sizes

of cabinets. The brackets 22 serve to removably support the substantially U-shaped in cross section decorative or trim strips 23. The trim strips 23 are preferably made of light-weight plated and highly polished metal and overlie a heavier U-shaped channel element 26 so as to provide a rigid backing therefor and prevent deformation thereof upon being struck by objects. The legs of both channel elements 26 and trim strips 23 are sprung outwardly and then snapped over the brackets 22 and may be further secured thereto by widely spaced apart self-tapping metal screws 27 which pass therethrough and are threaded into the brackets 22. It is to be noted that cabinet 10 includes a unitary insulated wall structure and non-insulated substantially hollow wall portions projecting forwardly thereof at least along the two upright sides of door 12 and that the one side of the forwardly projecting wall portions are substantially flush with the outer surface of the cabinet side walls. The other or inner side of the forwardly projecting hollow wall portions are spaced from the front opening of food compartment 11 and provide a recess in the forward face of cabinet 10. At least a portion of door 12 is disposed in this cabinet recess and a handle 28 is stationarily secured to the door in any suitable or conventional manner so as to be immovable with respect thereto. A striker or striker element 29, forming a part of the door latch to be hereinafter described, is bolted or otherwise rigidly secured upon door 12 against movement relative thereto. The movable latch mechanism or structure of the present invention is located in one of the non-insulated hollow wall projections, intermediate spaced brackets 22, and is concealed by a trim strip 23 with its casing rigidly secured by screws or the like to the stiffening or reinforcing channel member 21 as is represented in dotted lines in Figure 1 of the drawings and generally indicated by reference numeral 30.

Referring now to Figure 3 it will be noted that the casing 31 of my improved latch structure or mechanism is an elongated U-shaped in cross section narrow metal piece. The space between legs of the U-shaped casing 31 provides the latch mechanism with a striker reentry opening which registers with a striker reentry opening formed in the trim strip 23. Before proceeding with the description of parts of the movable latch mechanism or structure it is desired to point out that the projecting end of striker or striker element 29 is flat and is of substantially diamond shape. In other words the flat projecting end of striker 29 is provided with oppositely inclined cam surfaces 32 and 33 on its top and on its bottom edges (see Figure 3). Both the upper and lower inclined surfaces 32 and the upper and lower inclined surfaces 33 are in substantially vertical alignment with each other and are companion to one another. The movable latch mechanism or structure within the latch casing 31 includes opposed separate or individual retainers 36, each in the form of two metal pieces disposed in back-to-back relation, and provided at one end with an elongated opening 37 surrounding or mounted upon vertically spaced apart pivot pins 38 riveted or otherwise suitably supported by casing 31. This mounting of the one end of retainers 36 permits vertical sliding thereof lengthwise of casing 31 relative to and along the pins or studs 38 in addition to rotation thereof about these pins. The other end of the metal pieces of each opposed retainer 36 has a round hole therein receiving or fitting over a pin 39 riveted or otherwise suitably secured to legs of a U-shaped arm 41. One end of arms 41 is pivotally attached to a pin 42 riveted to casing 31 for swinging movement relative to the casing. Another or the other end of swingable arms 41 carries a striker gripping member or roller 43 on a pin 44 riveted to the legs of the U-shaped arms. It should be noted that the connection of the other end of the vertically spaced apart opposed retainers 36, which is pivotally secured to the arm 41 by pin 39, is located intermediate the swingable attachment of the arms to casing 31 and the member or roller 43 carried by the arms. Both the upper and lower opposed retainers 36 are provided with shouldered portions 46. A spring means is associated with each of the retainers 36 and this means is in the form of a coil spring 47 surrounding a retainer and compressed between the shoulders 46 thereon and its pivot or mounting pin 38. Springs 47 act between the pin 38 and shoulders 46 to normally urge or force the striker gripping members or rollers 43 toward one another. The opposed retainers 36, arms 41, rollers 43 and springs 47 form separate and individually spring pressed striker means or members for the movable latch mechanism. The elongated opening 37 and pin 38 mounting or connection of the retainers 36 serve as the sole means to control longitudinal sliding of the retainers vertically within latch casing 31 and consequently limit approaching movement of the striker gripping members or rollers 43 toward one another under the force or action of the springs 47 particularly when striker 29 is moved out of casing 31 (see Figures 5 and 6). A hole or opening 49 provided in the rear wall of casing 31, between and in back of rollers 43, is for a purpose to be described in connection with the disclosure shown in Figure 7 of the drawings of the present application. While I prefer to mount casing 31 containing the movable parts of the latching mechanism or structure on the cabinet and to carry the striker 29 on door 12 it is to be understood that reversal of these elements of the latching arrangement herein disclosed is within the realm of my invention.

It will be noted by reference to Figure 3 of the drawings, wherein the latch striker element 29 is clearly shown, that door 12 is depicted as being held in closed position. The diamond-shaped projecting end of striker 29 on door 12 has been moved into the latch casing 31 by swinging of the door shut and in so being moved the nose of striker 29 was wedged between the two rollers 43 to cause these rollers to be engaged by and simultaneously ride upward along the inclined companion cam surfaces 32 on the striker. Rollers 43 have ridden past the apex of cam surfaces 32 and 33 and have come to rest against the cam surface 33 behind this apex whereby the latch mechanism latches the door shut. Springs 47 at all times bias the opposed retainers 36, arms 41 and rollers 43 toward one another and it is to be understood that during movement of the flat diamond-shaped projecting end of striker element 29 and engagement of the opposite companion surfaces 32 and 33 thereon by the rollers 43 these rollers have shifted away from one another, arms 41 have been swung about their pivotal attaching pins 42 relative to casing 31 and the retainers 36 have consequently been slid relative to and along the pivotal mounting pins 38. The position of the rollers 43 on the cam surfaces 33 of striker 29 in Figure 3 of the drawings represents door 12 being wedged or biased by the opposed springs 47 toward or against cabinet 10 tending to compress gasket 17 and seal the access opening of food storage compartment 11 in the cabinet. It is to be noted that, when door 12 is latched shut as shown in Figure 3, the apex of cam surfaces 32 and 33 are substantially in alignment with a straight vertical line drawn through the pivotal mountings, pins 38 and pins 39, and this together with the particular shape of striker 29 enables force exerted upon the rollers 43 by springs 47 to be readily overcome. This is a feature of the present disclosure which distinguishes same from a single spring mechanism and a hook or the like shaped striker and which permits the refrigerator door to be opened from within cabinet 10 by a pushing force of approximately twelve pounds applied to door 12.

Springs 47 of the present mechanical spring pressed latching structure may be readily compressed either by a slight pulling force on door 12, from exteriorly of

cabinet 10, or by a small pushing force on the door from within compartment 11 of the cabinet. Door 12 can be opened with ease and without manipulating or swinging a door handle or lever about a pivotal mounting therefor on the door. For example a slight forward pull on the stationarily mounted door handle 28, in a direction away from cabinet 10, will cause the rollers 43 to ride over the apex of surfaces 32 and 33 and along the opposed companion inclined upper and lower surfaces 32 of striker 29 (see Figure 4). This rolling of rollers 43 along the surfaces 32 of striker 29 on door 12, aided by force exerted by the springs 47 at this time, tends to assist in swinging the door open relative to cabinet 10. In Figure 5 of the drawings the striker 29, carried by cabinet door 12, is removed from the latch structure or movable latch mechanism with parts of the mechanism at rest and springs 47 holding one end of elongated holes 37 in the opposed retainers 36 against pivot pins 38 thus preventing the rollers 43, on swingable arms 41, to be moved closer together. In other words the abutment of the one end of elongated opening 37 in the opposed retainers with pins 38 serve or form the sole means of limiting approaching movement of the striker gripping members or rollers 43 toward one another under the force exerting action of the spring means or springs 47. Thus rollers 43 on the swingable arms 41 are maintained in sufficiently spaced apart relation to one another, when the movable latch mechanism is at rest (see Figure 5) with the striker element 29 removed therefrom, to permit engagement of the nose of diamond-shaped projection on striker 29 with the opposed rollers 43 and entry of this striker projection into the latch casing.

It may be desirable to eliminate the handle 28 from door 12 of cabinet 10 and to cause unlatching of striker 29 from the mechanical spring-pressed latch mechanism 30 and opening of door 12 by a foot pedal actuated device or it may be preferable to provide the refrigerator cabinet 10 with both the door handle and a foot pedal actuated device whereby the door 12 can be opened during use of the refrigerator by optional arrangements. Referring therefore to Figure 7 of the drawings I show a foot actuated linkage device associated with the refrigerator cabinet 10 which is for the purpose of moving a shaft or plunger means 50 in a direction outwardly of a front portion of the cabinet through hole 49, hereinbefore referred to, in latch casing 31. Hole 49 registers with an aligned hole 51 provided in the inturned part of shell 13 on cabinet 10 and with an aligned flanged hole 52 provided in the channel member 21. The flanged hole 52 serves as a bearing for supporting a round end of the plunger 50. The openings or holes 49, 51 and 52 may, if desired, be sealed by a flexible bellows or the like (not shown) which would be secured to plunger 50 and to channel member 21 for preventing heat leakage into the space of the cabinet wall containing the insulating material 16. The other or yoked end 53 of plunger means 50 is connected, by a pin 54, to one end 55 of a bell-crank lever 56 pivotally secured, as by pin 57, to a bracket 58 rigidly attached to the cabinet channel member 21 by suitable screws or the like. Bracket 58 is provided with an ear 59 which serves as a stop for lever 56 to limit movement of plunger 50 away from the latch mechanism 30. Another end 61 of lever 56 is pivotally attached, by a pin 62, to the upper end 63 of a vertical link 64. Lower end 66 of link 64 is pivotally secured, as by pin 67, to a foot pedal member 68 intermediate its pedal end 69, which extends outwardly from the cabinet at the front thereof, and the end 71 of member 68 is pivotally mounted on a lower portion of cabinet 10 by the pin or stud 72. A coil spring 73 has one of its ends wrapped around or hooked over movable pin or stud 67 and has its other end hooked over a stud 74 stationarily secured to a lower portion of the channel 21 of cabinet 10. Spring 73 normally biases foot pedal 69 upwardly and this spring consequently holds the end 55 of bell-crank lever 56 against the stop 59 on the stationary bracket 58 so as to maintain the plunger means 50 retracted out of latch casing 31 as shown.

If the user of the refrigerator desires to unlatch door 12 from the spring-pressed mechanical latch mechanism 30 on cabinet 10 by her or his foot, instead of pulling on handle 28, the user merely steps on and presses pedal end 69 of foot pedal 68 downwardly about the pivot stud 72. This downward swinging movement of pedal 68 carries link 64 downwardly therewith, against the tension of spring 73, which link thereupon rotates bell-crank lever 56 clockwise, about pin or stud 57, to cause its end 55 to push plunger means 50 in a direction outwardly of the cabinet. Plunger means 50 moves into latch casing 31 and abuts against the nose end of striker 29 to apply the foot pressure force thereto and consequently directly to door 12. This pushing force, acting similar to a small pulling force applied to door handle 28, causes the striker 29 to overcome the spring pressed striker engaging means or rollers 43 whereupon these rollers ride over the apex of the inclined surfaces 32 and 33 on striker 29. Riding or rolling of the rollers 43 down the striker surfaces 32 aids in pushing or moving door 12 outwardly and thus the foot pedal device simultaneously releases the striker 29 from the mechanical spring pressed latch mechanism and swings the door away from cabinet 10. As soon as the user's foot is removed from pedal 68 spring 73 returns the pedal to its normal position and causes counterclockwise rotation of bell-crank lever 56 to shift the plunger means 50 out of the latch casing 31. The end 55 of bell-crank lever 56 engages the stop 59 and holds the plunger means 50 in a retracted position with respect to the latch mechanism 30. Thus the cabinet door 12 can be opened by a small force applied directly thereto either by a hand or a foot of the user of the refrigerator while maintaining the feature of this door being capable of being opened by pushing on same from within the food compartment 11 of the cabinet.

It should, from the foregoing, be apparent that I have provided an improved mechanical spring-pressed latch structure or mechanism for a refrigerator cabinet which is compact and can be mounted in a somewhat restricted non-insulated space or trim strip occupying area of the cabinet. By virtue of substantially aligning the apex of upper and lower inclined companion cam surfaces of a latch striker with a straight line drawn through opposed reacting points of springs on movable latch retainers of a door latching mechanism the door is rendered openable and/or closable with the greatest of ease. My arrangement provides an emergency safety feature for refrigerator cabinets in that the mechanical door latching spring pressed structure can be unlatched by a slight pulling force applied to the door from exteriorly of the cabinet and/or can be unlatched with a small pushing force on the door from within the cabinet to thereby permit a child becoming trapped in a discarded or abandoned refrigerator cabinet to extricate himself or herself therefrom. My improved latching arrangement thereby eliminates the necessity of equipping a refrigerator cabinet with a special or additional latch releasing means or device as is required by laws or ordinances governing equipment to permit escapement of a child from abandoned refrigerator cabinets.

While the form of embodiment of the invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted, as may come within the scope of the claims which follow.

What is claimed is as follows:

1. A unitary structure comprising in combination, a refrigerator cabinet having main insulated walls defining an open front food storage compartment therein, said cabinet also having non-insulated wall portions directed forwardly of the front of said main compartment walls, said forwardly directed wall portions being substantially flush with the outer surface of said main walls of the

cabinet and extending along sides of said compartment front opening in spaced relation thereto whereby to form a recess in the front face of said cabinet having a door jamb adjacent to and extending around the compartment opening, a door for said compartment opening hingedly mounted on said cabinet with at least a portion thereof disposed in said recess inwardly of said non-insulated wall portions, a latch for said door, said latch including a casing containing a movable mechanism adapted to receive a striker, said latch casing being mounted within one of said forwardly directed non-insulated wall portions and concealed thereby, said latch casing having a striker reentry opening registering with a striker reentry opening provided in said one forwardly directed non-insulated wall portion on said cabinet, said latch also including a striker stationarily mounted on said door and having a flat diamond shaped end projecting therefrom adapted to be received by said latch mechanism, a resilient gasket extending around said door adapted to engage said door jamb and being concealed from view by said non-insulated forwardly directed cabinet wall portions, said striker being immovable with respect to said door and swingable therewith through said registering striker reentry openings into association with said latch mechanism, said movable latch mechanism including separate opposed individually spring pressed striker gripping rollers, and opposed companion surfaces on opposite edges of said flat diamond shaped end of said striker being simultaneously engageable alternatively by said rollers in the opening and closing movements of said door.

2. A unitary structure comprising in combination, a refrigerator cabinet member having an open front compartment therein bounded by insulated walls, said cabinet member being provided with non-insulated substantially hollow wall portions projecting forwardly of the front of said insulated walls, one side of said forwardly projecting wall portions being substantially flush with the outer surface of said cabinet insulated walls and having the other sides thereof extending along the open front of said compartment in spaced relation thereto whereby said insulated walls provide a shouldered part of a recess in the front face of said cabinet, a door member for the open front of said compartment hingedly mounted on said cabinet with a portion thereof disposed in said recess inwardly of said non-insulated wall portions, a latch for said door, said latch including a casing containing a movable mechanism adapted to receive a striker, said latch casing being mounted within one of said forwardly projecting wall portions and concealed thereby, said latch casing having a striker reentry opening registering with a striker reentry opening provided in said one forwardly projecting wall portion on said cabinet, said latch also including a striker stationarily mounted on said door and having an end projecting therefrom adapted to be received by said latch mechanism, resilient means on one of said members in the vicinity of the shouldered part of said recess for engagement by the other of said members to seal said compartment open front and being concealed from view by said forwardly projecting wall portions, said striker being immovable with respect to said door and swingable therewith through said registering striker reentry openings into association with said latch mechanism; said movable latch mechanism including separate opposed individually spring pressed striker gripping members, said projecting end of said striker being flat and provided with oppositely inclined cam surfaces on opposed edges thereof, and said opposed companion cam surfaces on said striker being simultaneously engageable alternatively by said gripping members in the opening and closing movements of said door.

3. A latch mechanism for a door member of a refrigerator cabinet member comprising in combination, a shallow elongated casing mounted in a wall portion of one of said members and having an outwardly facing opening for the reception of a projection on a striker element secured to the other of said members, opposed retainers located in end to end relationship within said casing and substantially paralleling the elongation thereof, each of said retainers being pivotally mounted at one of their ends upon spaced apart pivot pins supported by said casing whereby the retainers extend toward one another in lengthwise alignment with each other in the space between said pins, an arm for each retainer swingably attached at one end to said casing and carrying on its other end a striker gripping member, the other juxtaposed end of each aligned retainer being secured to a part of an arm intermediate the striker gripping member thereon and its swingable attachment to said casing, said retainers being slidable relative to their pivot pin toward and away from each other in a substantially straight line direction along their lengthwise alignment with one another, spring means associated with said retainers, said spring means acting between said retainer pins and said intermediate part of said arms to at all times bias said striker gripping members thereon toward one another, said striker element being provided with oppositely inclined cam surfaces on opposed sides of its projection alternately engageable by said gripping members in the opening and closing movements of said door, and the slidable mounting of said retainers on their pivot pins limiting swinging movement of said arms under the action of said spring means and forming the sole means for holding said gripping members in spaced apart relation to one another when said door member is opened.

4. A latch mechanism for the door of a refrigerator or the like comprising in combination, a shallow elongated casing mounted in a wall portion of the refrigerator and having an outwardly facing opening for the reception of a flat diamond-shaped end projection on a striker element stationarily secured to said door, opposed retainers located in end to end relationship within said casing and substantially paralleling the elongation thereof, each of said retainers being pivotally mounted at one of their ends upon spaced apart pivot pins supported by said casing whereby the retainers extend toward one another in lengthwise alignment with each other in the space between said pins, an arm for each retainer swingably attached at one end to said casing and carrying on its other end a striker gripping roller, the other juxtaposed end of each aligned retainer being secured to a part of an arm intermediate the roller thereon and its swingable attachment to said casing, said retainers being slidable relative to their pivot pin toward and away from each other in a substantially straight line direction along their lengthwise alignment with one another, a coil spring surrounding each of said retainers, said coil springs acting between said retainer pins and said intermediate part of said arms to at all times bias said striker gripping rollers thereon toward one another, the opposed companion edge surfaces of said diamond-shaped end projection of the striker element being alternately engageable by said rollers in the opening and closing movements of said door, and the slidable mounting of said retainers on their pivot pins limiting swinging movement of said arms under the action of said coil springs and forming the sole means for holding said gripping rollers in spaced apart relation to one another when said door is opened.

References Cited in the file of this patent

UNITED STATES PATENTS

2,079,608	Erickson	May 11, 1937
2,101,465	Beer	Dec. 7, 1937
2,185,161	Tinnerman	Dec. 26, 1939
2,376,325	Borchers	May 22, 1945
2,711,944	Meek	June 28, 1955
2,717,797	Savage	Sept. 13, 1955
2,777,315	Burke	Jan. 15, 1957

FOREIGN PATENTS

123,180	Austria	Jan. 15, 1931