Feb. 22, 1938. F. E. GRAY 2,108,965

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Original Filed Feb. 19, 1934 5 Sheets-Sheet 1

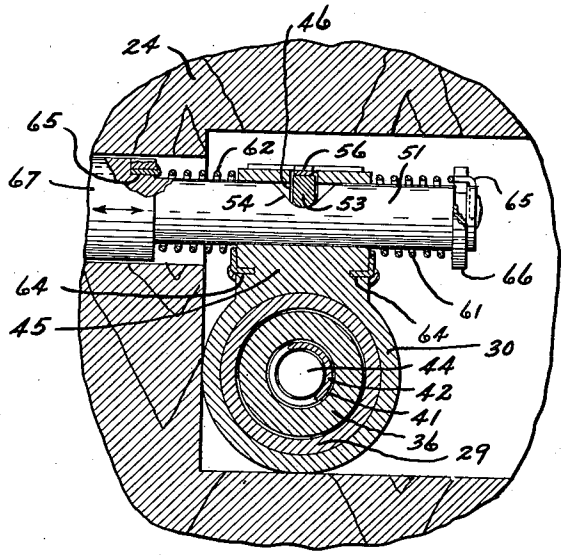


Fig. 4

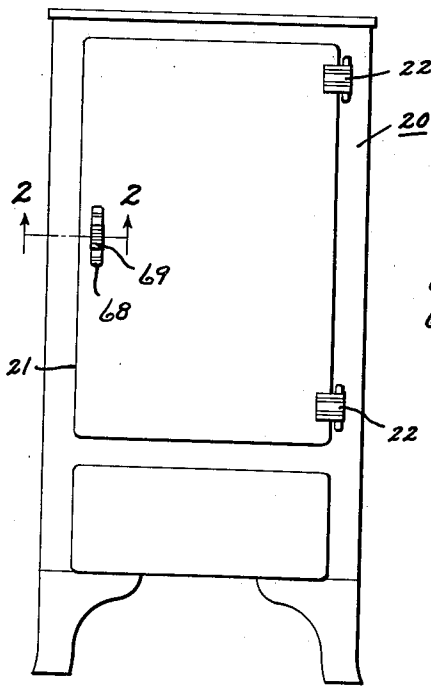


Fig. 1

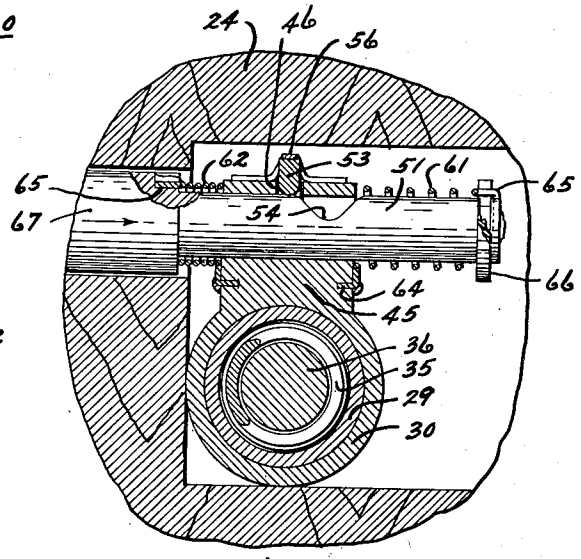


Fig. 6

Inventor

Floyd E. Gray.

By Spencer Hardman and Fehr.

his Attorneys.

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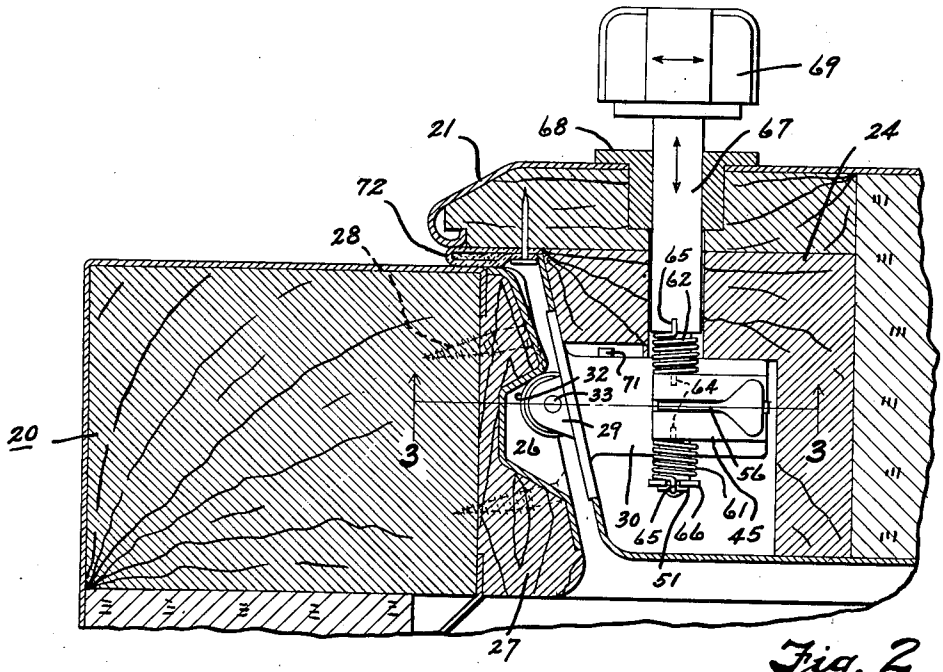


Fig. 2

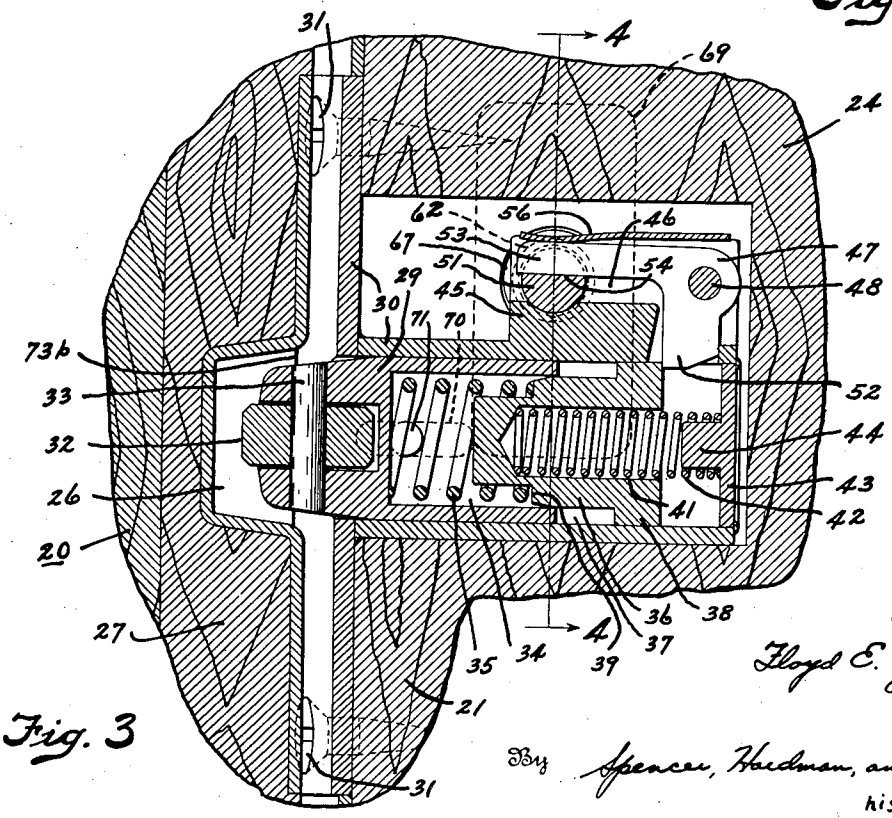


Fig. 3

Inventor
Floyd E. Gray.

By Spencer, Hardman, and Fehr.
his Attorneys.

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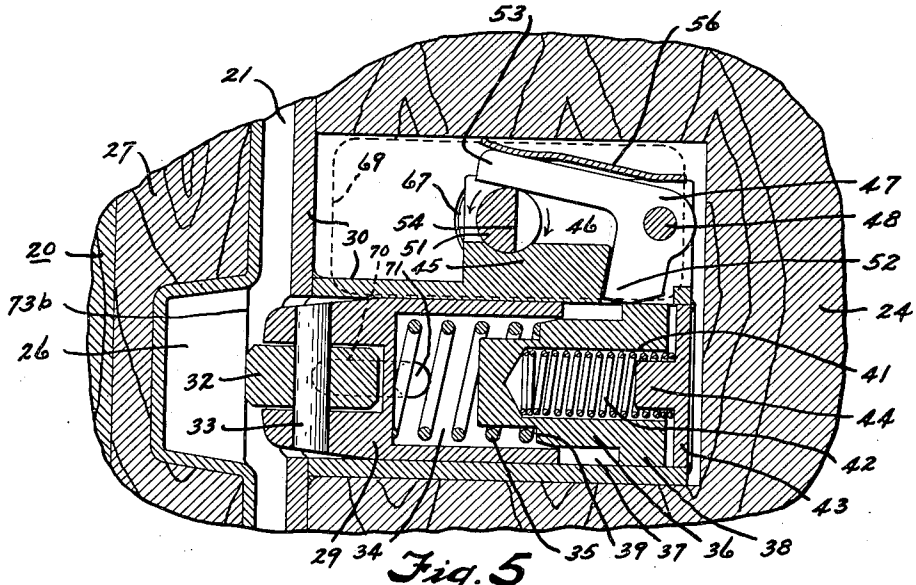


Fig. 5

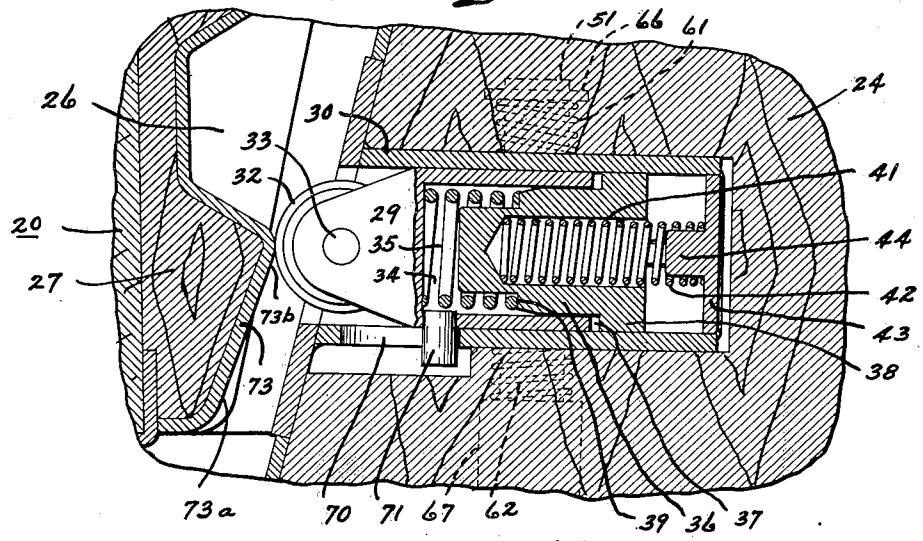


Fig. 7

Inventor
Floyd E. Gray.

By Spencer, Hardman, and Fehr.
his Attorney.

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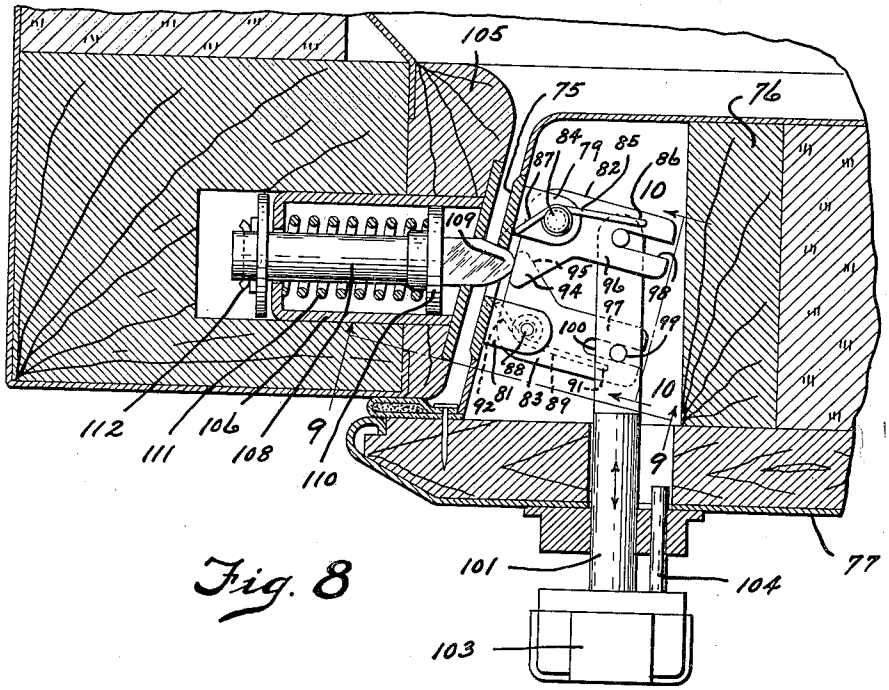


Fig. 8

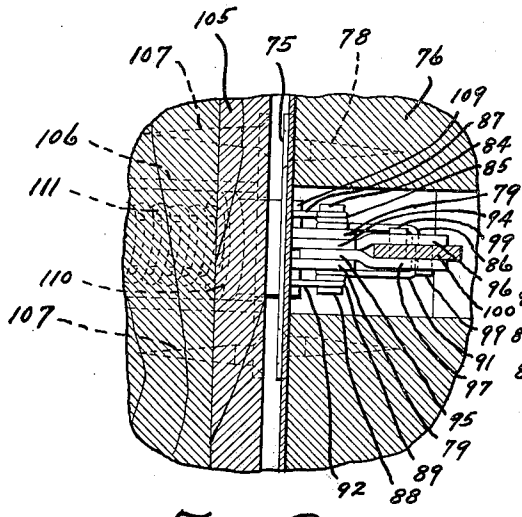


Fig. 9

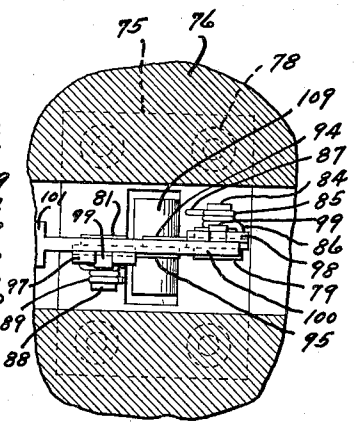


Fig. 10

Inventor
Floyd E. Gray.

By Spencer, Hardman, and Fehr.
his Attorneys.

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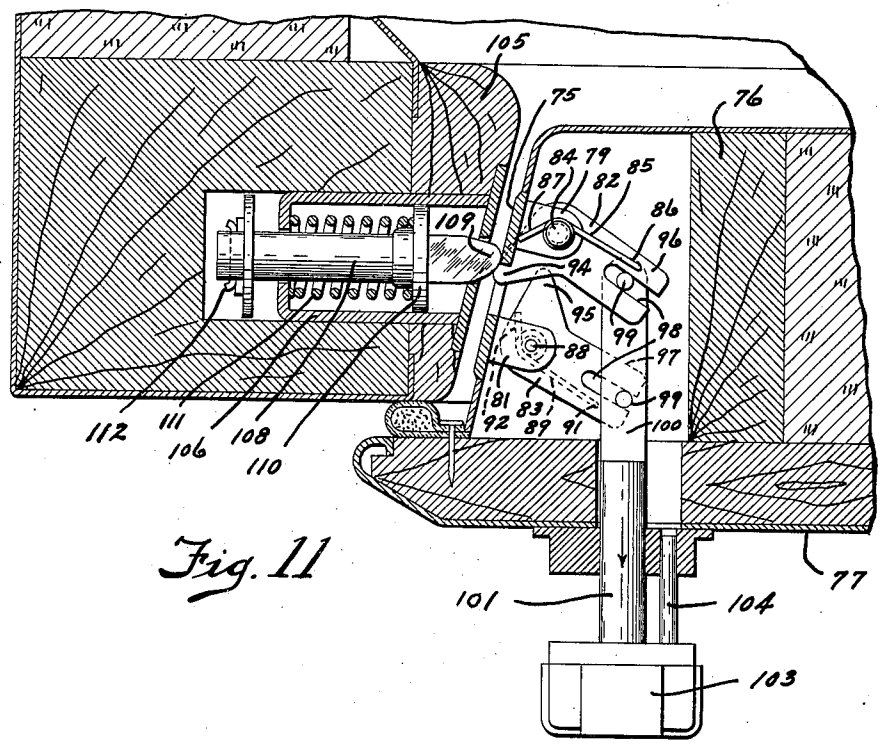


Fig. 11

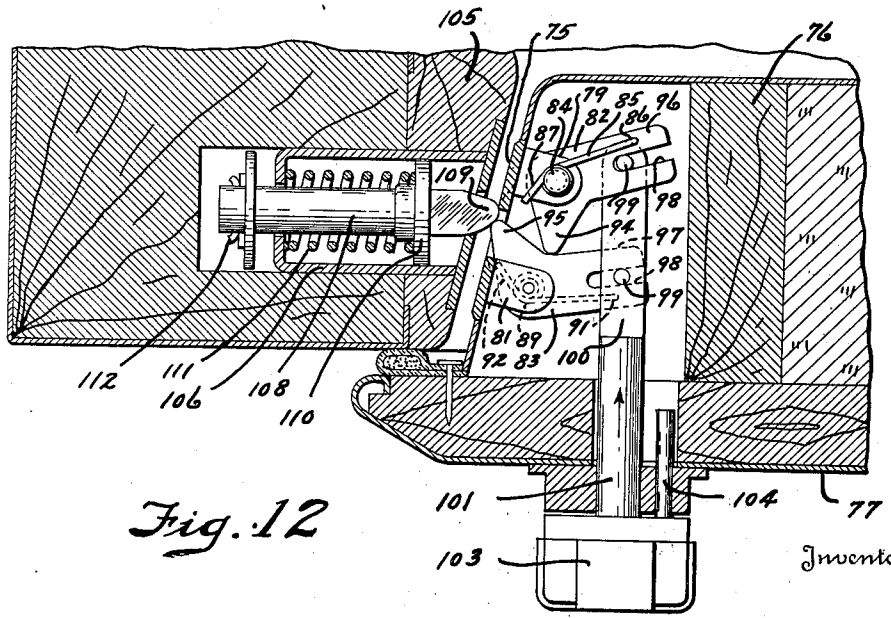


Fig. 12

Inventor

Floyd E. Gray.

By Spencer, Hardman, and Fehr.

his Attorneys

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UNITED STATES PATENT OFFICE

2,108,965

LATCH

Floyd E. Gray, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware

Application February 19, 1934, Serial No. 711,832
Renewed June 4, 1937

13 Claims. (Cl. 292—74)

This invention relates to refrigerating apparatus and particularly to latches for doors of refrigerator cabinets.

An object of the present invention is to provide an improved door latch for refrigerator cabinets which facilitates opening of the food storage compartment door thereof.

Another object of the present invention is to provide an improved latch for doors of refrigerator cabinets which can be unlatched to cause opening of the door by movement of the latch operating handle in any one of a plurality of directions.

Another object of the invention is to provide an improved door latch for refrigerator cabinets which can be unlatched by rotating the operating handle thereof in either a right hand or left hand direction or by pulling or pushing the same and which is also capable of tightly holding the door in abutting relation with the cabinet upon movement of the door in closed position without grasping and tightening the latch handle.

In carrying out the foregoing objects it is a still further object to provide a refrigerator cabinet door latch having the foregoing mentioned characteristics, which is compact, sturdy, not likely to get out of order and neat in appearance by virtue of concealing the mechanism thereof.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein preferred forms of the present invention are clearly shown.

In the drawings:

Fig. 1 discloses a refrigerator cabinet having the improved latching system of the present invention incorporated therein;

Fig. 2 is an enlarged horizontal sectional view taken on the line 2—2 of Fig. 1 and showing the door in closed position with the latch bolt in engagement with its keeper;

Fig. 3 is an enlarged fragmentary vertical sectional view of the latching system taken on line 3—3 of Fig. 2;

Fig. 4 is a fragmentary vertical sectional view through the latching system and taken on line 4—4 of Fig. 3;

Fig. 5 is a fragmentary sectional view similar to Fig. 3 showing certain parts of the latching system released to permit opening of the cabinet door;

Fig. 6 is a fragmentary sectional view similar to Fig. 4 showing the operating arm of the latching system reciprocated into a latch releasing position;

Fig. 7 is a fragmentary sectional view showing the cabinet door about to be closed and showing the latching system in a position to cause the latch bolt to tightly engage its keeper;

Fig. 8 is a sectional view similar to the view shown in Fig. 2 and disclosing a modified form of latching system;

Fig. 9 is a fragmentary sectional view of the latching system shown in Fig. 8 and taken on the line 9—9 thereof;

Fig. 10 is a fragmentary sectional view of the latching system shown in Fig. 8 and taken on the line 10—10 thereof;

Fig. 11 shows the operating arm of the latching system disclosed in Fig. 8 as being pulled outwardly of the door to permit same to open; and

Fig. 12 shows the operating arm of the latching system disclosed in Fig. 8 as being pushed inwardly of the door to permit same to open.

Referring to the drawings, I have shown in Fig. 1 thereof, for the purpose of illustrating one form of the present invention, a refrigerator cabinet 20 of the household type. Cabinet 20 includes the usual insulated food storage compartment provided with a door 21 which affords access thereto. Door 21 is pivotally supported or mounted upon the cabinet 20 by hinges 22. The door 21 includes a suitable rim member 24 (see Fig. 2) extending around the edges thereof and adapted to receive the fastening means of a door latching system and of the hinges 22.

The latching system for maintaining the door 21 in closed position and for causing opening of the door includes a strike plate or keeper 26 secured at the edge of the door frame 27 of the cabinet 20 by screws or other suitable fastening means 28 (see Fig. 2). A latch bolt 29 is mounted in a housing 30, which housing is secured in a cut-out portion provided therefor in rim member 24 by screws or other suitable fastening means 31 (see Fig. 3). Latch bolt 29 has a roller 32 secured to the end thereof by a pin 33. Bolt 29 has its end opposite the roller end hollowed out as at 34 for receiving a coil spring 35 (see Fig. 3). A movable backing member 36 is mounted in the aperture or opening 37 provided in housing 30 for bolt 29. Member 36 includes a cylindrical collar or guiding portion 38 and an abutting portion 39 against which the end of spring 35 bears. This member 36 is also hollowed out as at 41 for receiving a coil spring 42. A plug 43 having a button portion 44 formed thereon is soldered or otherwise secured to housing 30 at the end of the opening 37 therein. The button

portion 44 of plug 43 serves to hold the spring 42 in alignment with opening 41 in member 36. Spring 35 is considerably larger and of much greater tension than spring 42 and spring 35 thus serves as the holding means for causing bolt 29 to tightly or firmly engage the keeper or strike 26. Housing 30 includes a portion 45 extending from the main body thereof and this portion 45 is provided with a slot 46. A lever or pawl 47 is located in slot 46 and is fulcrumed or pivotally mounted therein by a pin or shaft 48 secured to the ears formed by a slot 46 in the portion 45 of housing 30 (see Figs. 3 and 5). An operating arm or shaft 51 extends through the portion 45 of housing 30 at right angles to the latch bolt 29. The pawl or lever 47 includes an end or finger portion 52 which is adapted to engage the end of the movable backing member 36 adjacent the collar portion 38 formed thereon. The other end or finger portion 53 of pawl or lever 47 is adapted to normally engage a flattened portion 54 provided on shaft 51. A suitable spring such as a leaf spring 56 has one of its ends soldered or secured in any manner to the portion 45 of housing 30 while its other end extends over and bears against the end or finger portion 53 of lever 47 to thereby force finger 53 into engagement with the flattened portion 54 of shaft 51.

As previously stated, the shaft 51 is disposed at right angles to the bolt 29 and extends outwardly from opposite sides of the housing portion 45. Shaft 51 has a coil spring 61 surrounding same and disposed on one side of the portion 45 of housing 30. A coil spring 62 surrounds the shaft 51 on the opposite side of housing portion 45 (see Figs. 2, 4, and 6). Spring 61 is coiled in an opposite direction from that of spring 62 and each spring has an end 64 secured in an aperture provided in housing portion 45 by soldering or staking the same therein. The ends 65, opposite ends 64, of each spring 61 and 62 are soldered or otherwise secured to shaft 51 (see Figs. 2 and 4). A C-shaped clip 66 is squeezed or pressed into a groove provided on the one end of shaft 51 and this clip tends to back up and hold spring 61 in position on shaft 51. Shaft 51 includes a portion 67 which is slightly enlarged relative to the portion thereof extending through housing 45. The portion 67 of shaft 61 extends outwardly from the latch mechanism and through any suitable bearing member 68 to the exterior of the door 21 and has an operating handle or knob 69 mounted on the outer end thereof in any suitable manner. The springs 61 and 62 are coiled and secured against rotation in such manner that the tension thereof is equalized and therefor tends to hold the shaft 51 in a neutral position or in a position so that the flattened portion 54 of shaft 51 normally extends parallel with the latch bolt 29. Springs 61 and 62 are also constructed and assembled on shaft 51 to balance each other in compression force so as to normally maintain the flattened portion 54 of shaft 51 in a centralized position whereby the flattened portion 54 normally registers with the slot 46 and finger portion 53 of lever 47 (see Fig. 4). The body of the latch bolt 29 and the opening 37 provided therefor in housing 30 are both cylindrical in cross-section. Therefore, in order to prevent turning or rotation of bolt 29 in opening 37, I provide an elongated slot 70 in housing 30 (see Figs. 3 and 7) and pass a peg or pin 71 through this slot and secure the one end of the peg to bolt 29.

It will be apparent from the drawings that I have shown the latch system as being in a latched position in Figs. 2, 3, and 4. It will also be apparent that shaft 51 may be rotated by handle or knob 69 in either a right hand or left hand direction by virture of its cylindrical form. Shaft 51 may also be reciprocated in either direction, or, in other words, it may be pushed or pulled inwardly and outwardly of the door 21 by the operating handle or knob 69. It is to be understood that in the present invention the gasket 72 carried by door 21 and which seals the door 21 to the cabinet 20 (see Fig. 2), is preferably of such construction that when the latch mechanism is released the resiliency of the gasket 72 due to its being under compression forces the door 21 open. It may, however, be desirable to employ additional means, for moving the door open upon release of the latching system, such, for example, as springs which may be disposed in the hinges 22 or spring pressed buttons spaced along the edge of the door frame 27 and adapted to engage the door when the door is in closed position.

Assuming that the door 21 is in closed position as shown in Fig. 1, for sealing the opening in the food storage compartment or cabinet 20, the parts of the latching mechanism or system are in the position shown in Figs. 2, 3, and 4. In order to release the latching system to open the door 21 the handle or knob 69 may be reciprocated in either direction for overcoming or releasing the tension of the compression spring 35 which holds the latch bolt 29 in keeper 26. For example, I have shown the shaft 51 as being in a reciprocated or pushed position in Fig. 6 of the drawings. Movement of the shaft 51 in a reciprocated position causes the finger 53 to ride out of the flattened portion 54 and to ride upon the outer circumference of shaft 51, as shown in Fig. 6, thus causing finger 53 to be elevated. Elevation of finger 53 causes rotation of lever or pawl 47 about its fulcrum 48 and also causes the end of finger portion 52 thereof to move horizontally (see Fig. 5). It is to be understood that the operation just described will also take place upon rotating shaft 51 which rotated position of shaft 51 is shown in Fig. 5 of the drawings. However, in the event of either reciprocating shaft 51, as shown in Fig. 6, or of rotating the same as shown in Fig. 5, the horizontal movement of finger 52 causes the lower extremity thereof to be raised or to move out of alignment with opening 37 and into the slot 46, thus disengaging the backing member 36. The compression exerted by spring 35 at this time, due to the latch bolt 29 bearing against keeper 26 and compressing the spring 35 between backing member 36 and bolt 29, causes the backing member 36 to move inwardly of the opening 37 in housing 30 to compress spring 42 as shown in Fig. 5. The compression of spring 35 having been overcome or released in the manner described permits the compression force of the resilient gasket 72, or any other suitable spring means not shown but which may be provided as previously explained, to move the door 21 outwardly from cabinet 20 and the door frame 27. The force of the light compression spring 42 is sufficient to cause movement of bolt 29 outwardly of opening 37 after the door 21 has been opened. Simultaneously with the outward movement of bolt 29 and upon release of the handle 69 by the operator either of the springs 61 or 62, which has had its tension increased or has been compressed by the releasing operation or movement of shaft 51, then functions to return the operating shaft 51 and its handle to normal

position. In other words, since when the door is opened and spring 42 moves bolt 29 outwardly of opening 37 spring 42 also moves the backing member 36 beyond the point where the finger 52 is adapted to extend or protrude into opening 37 to engage member 36. Then upon movement of shaft 51 and its operating handle 69, by either spring 61 or 62, into normal position, spring 56 causes finger 53 to ride in the flattened portion 54 of shaft 51, the lower extremity of finger 52 drops or is forced by spring 56 back into the path of the backing member 36. This position of the mechanism is the same as is shown in Fig. 3 wherein the latching system is shown in latched position relative to the door frame 27. When the door 21 is open and the parts of the mechanism are in the position shown in Fig. 3, it is to be understood that the latch bolt 29 extends outwardly from the edge of the door 21 a sufficient distance to engage the lowermost portion 73a of an inclined surface 73 formed on strike 26 (see Fig. 7) upon closing the door. Therefore, when the door is being closed bolt 29 first engages the portion 73a of the strike plate and rides over the inclined surface 73 thereon and into the keeper portion 26. During this closing operation bolt 29 compresses spring 35 against the backing member 36, as shown in Fig. 7 of the drawings, due to the backing member being held against movement by finger 52. When the door 21 has been moved into its frame 27 a sufficient distance to substantially close the door opening roller 32 on bolt 29 passes over the highest point 73b of the inclined surface 73 of the strike plate and is forced by spring 35 into engagement with the keeper portion 26 of the strike plate, thus reestablishing the latched position shown in Figs. 2 and 3.

Referring now to Figs. 8 to 12 inclusive of the drawings in which I have disclosed a modified form of latching system, Fig. 8 is a horizontal sectional view similar to Fig. 2 of the foregoing described latching system. This modified form of latching system includes a strike plate or keeper 75 secured in a hollowed-out portion of the rim member 76 of door 77 by means such as screws 78. The strike plate or keeper 75 has two pairs of ears 79 and 81 extending therefrom and supporting levers or pawls 82 and 83 respectively. A stud 84 is staked or riveted to the lower of the pair of ears 79 and this stud pivotally secures the lever or pawl 82 to these ears. Stud 84 extends upwardly from the top ear of the pair 79 thereof and its extending portion is surrounded by a coil spring 85. Spring 85 has its one end 86 secured in any suitable manner in an opening provided in pawl or lever 82 while its opposite end 87 bears or rests against the inner surface of plate 75. A stud 88 is staked or riveted to the upper of the pair of ears 81 and this stud pivotally secures the lever or pawl 83 in fulcrumed relation to these ears. Stud 88 extends downwardly from the bottom ear of the pair 81 thereof and has its extending portion surrounded by a coil spring 89. Spring 89 has its one end 91 secured in an opening provided in pawl or lever 83 while its opposite end 92 bears against the inner surface of plate 75.

Each lever or pawl 82 and 83 includes a finger portion 94 and 95 respectively and also an end portion 96 and 97 respectively. The end portions 96 and 97 of the levers or pawls are slotted as to 98 for receiving pins 99 carried by a flattened portion 100 of an operating arm or shaft 101. It will be noted that the pair of ears 79 are disposed at a slightly higher elevation than the pair of ears 81. It will also be noted that the ends 96 and 97 of levers 82 and 83 respectively are bent away from one another (see Fig. 9). The difference in the elevation of the pair of ears and the bent structure of levers 82 and 83 positions the ends 96 and 97 in spaced apart relation in order to permit the flattened portion 100 of arm or shaft 101 to extend horizontally between the ends 96 and 97 of the levers so as to position the levers on opposite sides of the portion 100. The arm or shaft 101 extends outwardly of the lever mechanism to the exterior of door 77 and has an operating handle or knob 103 secured in any suitable manner, to its outer end. In this modified showing the operating arm or shaft 101 is adapted to be reciprocated and it may be made square in cross-section or some other means may be provided to prevent rotation thereof. In the present showing a pin 104 is secured in any suitable manner to handle or knob 103 and extends horizontally with and parallel to arm 101 into the door 77. The pin 104 is spaced from shaft 101 and this spacing obviously prevents rotation of the arm 101. It is to be understood that springs 85 and 89 are constructed and assembled so as to be equivalent in tension and therefore these springs normally balance each other and maintain the mechanism heretofore described in a neutral position such as is shown in Fig. 8 of the drawings.

In this modified form of latching system the latch bolt is carried by the cabinet frame 105. It will be noted that a casing 106 is mounted on the edge of the cabinet frame 105 by screws 107 (see Fig. 9) and extends inwardly of the cabinet frame. Casing 106 contains a latch bolt 108. Bolt 108 includes a nose 109 formed integral with a collar 110 which collar serves to guide the bolt in casing 106. A coil spring 111 is positioned within the casing 106 between the end wall thereof and the bolt collar 110. Casing 106 may be constructed of several pieces if desired, in order to permit the assembly of bolt 108 and spring 111 therein. The end portion of bolt 108 opposite the nose end 109 thereof extends through an opening provided in the back wall of the casing 106 and has a washer surrounding the same. A pin 112 is staked or otherwise secured in an opening provided at the end of bolt 108 after spring 111 is positioned in the casing to maintain the spring 111 under compression at all times so that the bolt 108 tends to be forced outwardly of the casing.

The operation of the latching system shown in Figs. 8 to 12 inclusive includes the feature of reciprocating the operating arm or shaft in either direction for opening the refrigerator cabinet door. Assuming that the door 77 is closed and in latched position as shown in Fig. 8 and it is desired to open same. Handle or knob 103 may be pushed inwardly of the door 77 as shown in Fig. 12 and such operation of the handle or knob causes pin 99, located in slot 98 provided in the end 97 of lever 83, to move lever or pawl 83 about its pivot or fulcrum 88. This movement of lever 83 causes the finger end 95 thereof to move toward the latch bolt 108 and into engagement with the nose 109 thereof. Further movement of the finger end 95, after engaging the bolt nose 109, forces the nose 109 out of engagement with the keeper opening provided in strike plate 75. The parts of the mechanism are so designed and arranged relative to one another that, during the operation of forcing bolt 108 out of the keeper opening in

plate 75, the camming action inherently occurring by engagement of either finger 94 or 95 with nose 109 of bolt 108 causes an initial movement of the door 77 outwardly of the cabinet as is apparent by reference to the position of the door flange, adjacent the door gasket, relative to the cabinet as shown in Figs. 11 and 12 as compared to the position thereof shown in Fig. 8. The resiliency of the gasket which seals the door 77 to the cabinet or any other suitable spring means (not shown), which may be provided around the cabinet frame or in the door hinges, will then force door 77 into a wide open position. By reference to Fig. 12 it will be noted that the foregoing described operation has also moved lever or pawl 82 away from the latch bolt or inwardly of the door 77. This movement of lever 82, at the time lever 83 moves the bolt 108, has no function whatever in the releasing operation of bolt 108 from its strike or keeper 75. After the door 77 has been opened, in the manner just described and the handle or knob of the latching system has been released by the operator, spring 89 then functions, due to its tension being increased by the movement of lever 83, to return lever 83 and arm 101 together with the other parts of the mechanism to a normal position, such as is shown in Fig. 8 of the drawings. The latch bolt 108 is moved outwardly by the compression spring 111 since the door 77 has been opened and this bolt is then in a position to engage strike plate 75 and to be forced by the act of closing the door into the keeper opening provided in the plate 75.

Again, assuming that the door 77 is closed and in latched position as shown in Fig. 8 and it is desired to open same. The handle or knob 103 may be pulled outwardly of the door as shown in Fig. 11 of the drawings and such operation causes pin 99, located in slot 98 provided in the end 96 of lever 82, to move lever 82 about its pivot or fulcrum 84. This movement of lever 82 causes the finger end 94 thereof to move toward the latch bolt 108 and into engagement with the nose 109 thereof. Further movement of finger end 94 of lever 82, after engaging the bolt nose 109, forces the nose 109 out of engagement with the keeper opening in strike plate 75. The camming action of finger 94 against the bolt 108 again causes an initial movement of door 77 outwardly of the door frame 105 (see Fig. 11). The resiliency of the door gasket or any other suitable spring means as previously explained, will then force the door into a wide open position. This pulled position of the operating arm and the mechanism associated therewith is shown in Fig. 11 of the drawings and by reference thereto it will be noted that the latter described operation has also moved lever or pawl 83 away from the latch bolt or inwardly of the door 77. This movement of lever 83, at the time lever 82 is moved toward the bolt 108, has no function in the release of bolt 108 from its strike 75 by the pulling operation of arm 101. After the door 77 has been opened, in the manner described, and the handle or knob of the latching system has been released by the operator spring 85 then functions, in the manner previously explained relative to spring 89, to return the latching mechanism to its normal position as shown in Fig. 8. Thus the operating arm of the modified form of latching system disclosed may be reciprocated in either direction for opening the door 77 or, in other words, this operating arm may be either pushed or pulled as desired.

From the foregoing it is apparent that I have provided an improved latching system for doors of refrigerator cabinets which system need not be actuated upon closing the cabinet door. By providing a system in which the operating handle or arm of the latch mechanism can be moved in any one of a plurality of directions for opening the cabinet door I have greatly facilitated such opening operation. Thus if the user of the refrigerator cabinet approaches the cabinet with food products in each hand or approaches the cabinet with a large tray, which requires both hands to carry same, it is not necessary for the user to set the products down prior to opening the refrigerator cabinet door as has heretofore been customary. Under such circumstances the user may merely push on the latch operating handle to open the cabinet door or, if desired and/or if more convenient, the user may pull on the operating handle or turn same in either direction to open the door. In addition to presenting certain advantages over latching systems heretofore commonly employed on refrigerator cabinets my latching systems include improved compact mechanisms which can be readily concealed within the confines of a refrigerator cabinet door and which mechanisms are sturdy and not likely to get out of order.

While the forms of embodiment of the invention as herein disclosed, constitute preferred forms, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A door latch including a bolt, a stiff spring and a weak spring each normally applying force to said bolt for urging the bolt into engagement with a keeper, means for preventing compression of said weak spring by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress said stiff spring while effective for preventing compression of said weak spring, and means for releasing said first named means.

2. A door latch including a bolt, a stiff spring and a weak spring each normally applying force to the bolt for urging the bolt into engagement with a keeper, means for preventing compression of one of said springs by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress the other of said springs while effective for preventing compression of said one of said springs, and manually actuable means for releasing said first named means to cause compression of said one of said springs by movement of said bolt.

3. A door latch including a bolt, a stiff spring and a weak spring each normally applying force to said bolt for urging the bolt into engagement with a keeper, means for preventing compression of said weak spring by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress said stiff spring while effective for preventing compression of said weak spring, and manually actuable means for releasing said first named means to cause compression of said weak spring by movement of said bolt.

4. A door latch including a bolt, a stiff spring, a follower, and a weak spring connected together, said follower being located between said weak spring and said stiff spring, said stiff spring being located between said follower and said bolt, said springs normally applying force to said bolt for resiliently urging the bolt toward latching position, means for preventing movement of said

follower and compression of said weak spring by movement of said bolt, said means being arranged to permit compression of said stiff spring by movement of said bolt while being effective for preventing movement of said follower, and means for releasing said first named means.

5. A door latch including a bolt, a stiff spring, a follower, and a weak spring connected together, said follower being located between said weak spring and said stiff spring, said stiff spring being located between said follower and said bolt, said springs normally applying force to said bolt for resiliently urging the bolt toward latching position, means for preventing movement of said follower and compression of said weak spring by movement of said bolt, said means being arranged to permit compression of said stiff spring by movement of said bolt while being effective for preventing movement of said follower, and manually actuable means for releasing said first named means to cause movement of said follower and compression of said weak spring by movement of said bolt.

6. A door latch including a bolt, a stiff spring, a follower, and a weak spring connected together, said follower being located between said weak spring and said stiff spring, said stiff spring being located between said follower and said bolt, said springs normally applying force to said bolt for resiliently urging the bolt toward latching position, means for preventing movement of said follower and compression of said weak spring by movement of said bolt, said means being arranged to permit compression of said stiff spring by movement of said bolt while being effective for preventing movement of said follower, means for releasing said first named means, and means associated with said releasing means and adapted to be reciprocated in either direction or rotated in either direction for actuating said releasing means.

7. A door latch including a bolt, a stiff spring, a follower, and a weak spring connected together, said follower being located between said weak spring and said stiff spring, said stiff spring being located between said follower and said bolt, said springs normally applying force to said bolt for resiliently urging the bolt toward latching position, means for preventing movement of said follower and compression of said weak spring by movement of said bolt, said means being arranged to permit compression of said stiff spring by movement of said bolt while being effective for preventing movement of said follower, and manually actuable means for releasing said first named means to cause movement of said follower and compression of said weak spring by movement of said bolt, said manually actuable means being adapted to be reciprocated in either direction or rotated in either direction.

8. A door latch including a bolt, a stiff spring and a weak spring, each normally applying force to the bolt for urging the bolt into engagement with a keeper, means for preventing compression of one of said springs by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress the other of said springs while effective for preventing compression of said one of said springs, and means for releasing said first named means, said last named means being adapted to be reciprocated in either direction or rotated in either direction.

9. A door latch including a bolt, a stiff spring and a weak spring, each normally applying force to said bolt for urging the bolt into engagement with a keeper, means for preventing compression of said weak spring by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress said stiff spring while effective for preventing compression of said weak spring, and manually actuable means for releasing said first named means to cause compression of said weak spring by movement of said bolt, said manually actuable means being adapted to be reciprocated in either direction or rotated in either direction.

10. A door latch including a bolt, a pair of springs each cooperating with and normally applying force to said bolt for urging the bolt into engagement with a keeper, means for preventing compression of one of said pair of springs by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress the other of said pair of springs while effective for preventing compression of said one of said pair of springs, means for releasing said first named means, and means associated with said releasing means and adapted to be reciprocated in either direction or rotated in either direction for actuating said releasing means.

11. A door latch including a bolt, a stiff spring and a weak spring, each normally applying force to the bolt for urging the bolt into engagement with a keeper, means for preventing compression of said weak spring by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress said stiff spring while effective for preventing compression of said weak spring, means for releasing said first named means, and means associated with said releasing means and adapted to be reciprocated in either direction or rotated in either direction for actuating said releasing means.

12. A door latch including a bolt, a pair of springs each cooperating with and normally applying force to said bolt for urging the bolt into engagement with a keeper, means for preventing compression of one of said pair of springs by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress the other of said pair of springs while effective for preventing compression of said one of said pair of springs, means for releasing said first named means, and means associated with said releasing means and adapted to be reciprocated in either direction for actuating said releasing means.

13. A door latch including a bolt, a pair of springs each cooperating with and normally applying force to said bolt for urging the bolt into engagement with a keeper, means for preventing compression of one of said pair of springs by movement of said bolt, said means being arranged to permit movement of said bolt to thereby compress the other of said pair of springs while effective for preventing compression of said one of said pair of springs, means for releasing said first named means, and means associated with said releasing means and adapted to be rotated in either direction for actuating said releasing means.

FLOYD E. GRAY.