

Feb. 17, 1942.

G. MUFFLY

2,273,282

REFRIGERATOR

Original Filed May 26, 1930

2 Sheets-Sheet 1

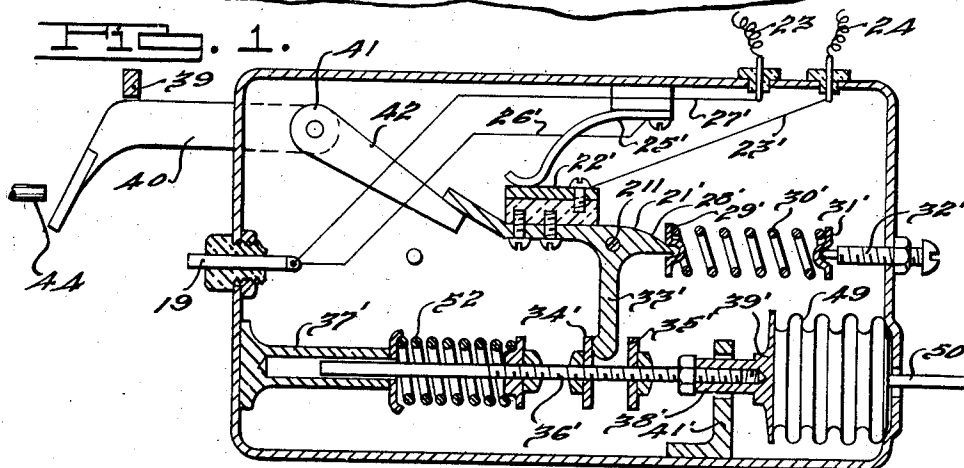
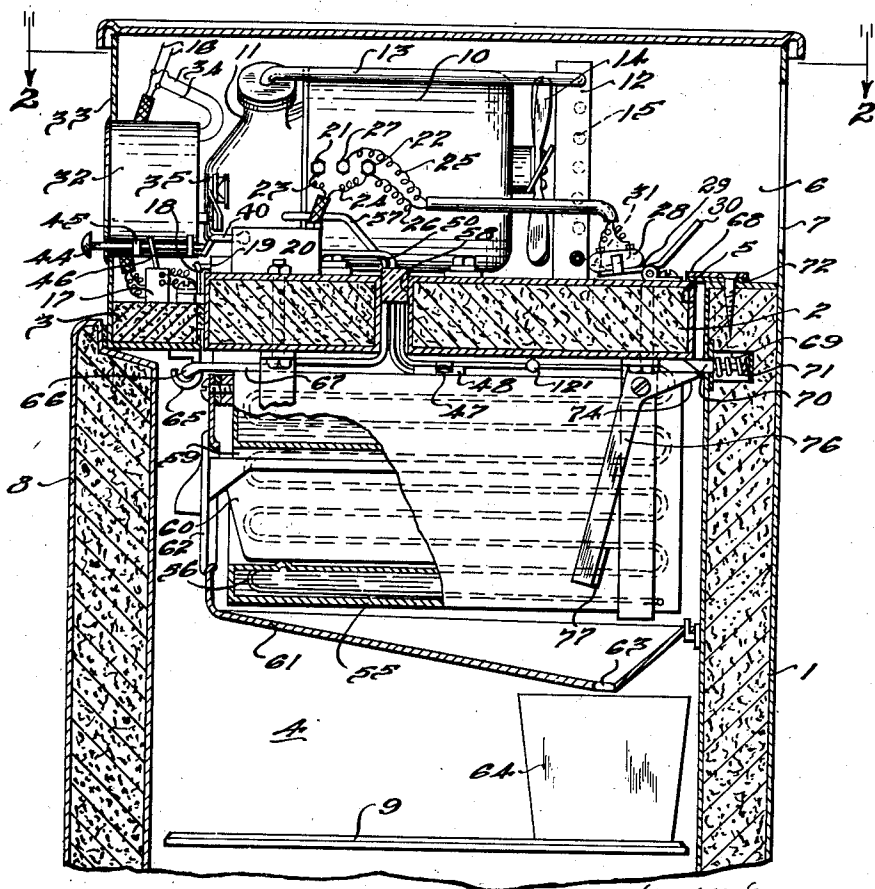


FIG. 4.

INVENTOR
Glenn Muffy.
BY
Harness, Dickey & Pierce.
ATTORNEYS

Feb. 17, 1942.

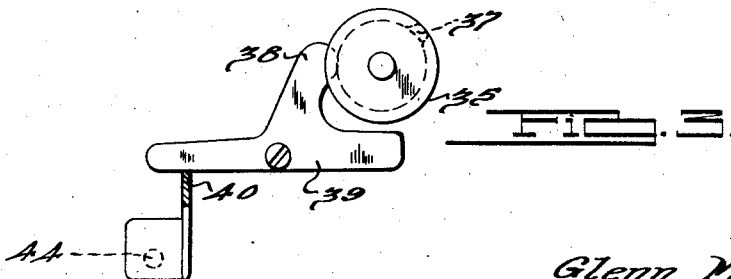
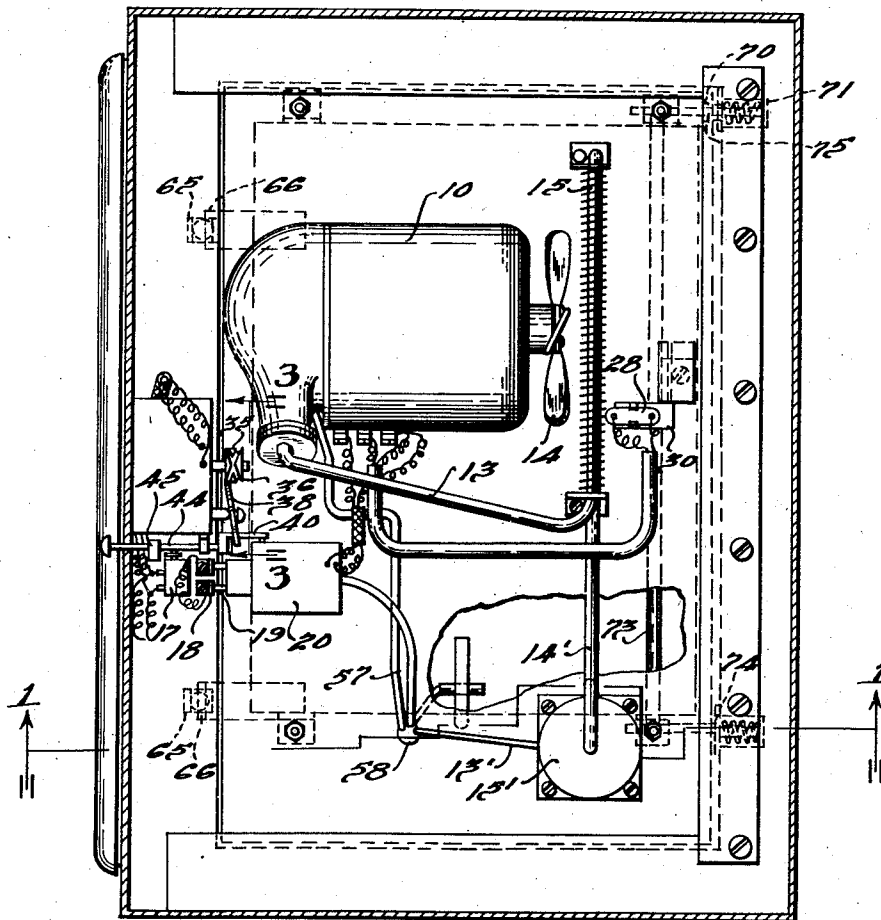
G. MUFLY

2,273,282

REFRIGERATOR

Original Filed May 26, 1930

2 Sheets-Sheet 2



INVENTOR

Glenn Muffly.

 $\mathcal{BY}$

BY
Harness, Dickey & Pierce.
ATTORNEYS.

ATTORNEYS.

UNITED STATES PATENT OFFICE

2,273,282

REFRIGERATOR

Glenn Muffly, Springfield, Ohio

Original application May 26, 1930, Serial No. 455,741. Divided and this application October 7, 1938, Serial No. 233,820

30 Claims. (Cl. 62-116)

This invention relates to an improved refrigerator, particularly of the type which has a removable refrigerating system. The application constitutes a division of my co-pending application for patent, Serial No. 455,741, filed May 26, 1930, now Patent No. 2,137,541, issued November 22, 1938.

Heretofore in installing and removing refrigerator units from their cabinets, the services of at least two workmen have been required and frequently it is necessary to move the refrigerator from beneath overhead shelves or cabinet in order to provide sufficient clearance. In some instances, low ceilings render it impossible to install or remove the unit in the room or space in which it is normally located. The unwieldiness of the unit often causes the cabinet in which it is housed to be injured during installation and removal. When one unit is removed and replaced by another, electrical and mechanical connections have to be broken and reestablished at the expense of considerable time and effort.

The main objects of this invention are to provide a refrigerating system that is compactly assembled so as to be conveniently installed or removed by a single workman; to provide an improved cabinet for receiving a refrigerating system of this kind which has a refrigerated space and communicating door openings through which the assembly is insertable to provide connectable hinge elements on the interior of the cabinet and on the assembly respectively by which the latter may be pivotally suspended in the door opening and rotated therefrom into a horizontal operative position; and to provide means for releasably holding the assembly in an operative position with the heat absorbing means thereof located in the refrigerated space and the heat dissipating means located outside of the refrigerated space.

Other objects of my invention are to provide means for automatically forming electrical connections in a power circuit of the system and mechanical connections in clock switch operating mechanism thereof as the assembly is moved into an operative position; to provide means of this kind for automatically breaking the above operative connections when the assembly is removed.

An illustrative embodiment of my invention is shown in the accompanying drawings, in which:

Figure 1 is a vertical section taken on line 1-1 of Fig. 2, showing a refrigerator embodying my invention;

Fig. 2 is a horizontal section taken on the line 2-2 of Fig. 1;

Fig. 3 is a vertical section taken on the line 3-3 of Fig. 2, and

Fig. 4 is a vertical section view taken centrally through and axially of the control switch shown in Figs. 1 and 2, showing the construction of the same in detail.

In the forms shown, the refrigerator includes a cabinet 1 having side walls which are either formed of or provided with heat insulating material and a top wall which includes a removable wall section 2 and stationary wall parts 3. Formed in the cabinet 1 is a refrigerating space or compartment 4 which communicates through the opening 5 in the top wall of the cabinet in which the removable wall section 2 is located, with a chamber 6 in a casing 7 preferably formed as an integral upward extension of the side walls of the cabinet. The cabinet 1 has a door opening which is provided with a door 8. The door opening communicates with the refrigerating space 4 permitting access thereto for allowing insertion and removal of articles to be refrigerated. A shelf 9 is mounted in the refrigerating space 4 for receiving the articles.

Mounted on the upper side of the wall section 2 is a sealed compressor unit including a motor 10 which operates a compressor 11 of the type commonly used in refrigerating units. The compressor 11 communicates with a condenser 12 which is also mounted on the upper side of the wall section 2 through a pipe 13. A fan 14 magnetically driven through the sealed casing of the compressor unit by the rotor of the motor 10 is rotatably mounted on the housing of the motor 10 adjacent the condenser 12, between the latter and the motor, for cooling the coil 15 of the condenser. The back wall of the casing 7 is provided with an opening for the circulation of cooling air through the compartment 6 in accordance with conventional practice, and additional openings may be provided, optionally, in the front and side walls for the same purpose.

The motor 10 is provided with an electrical circuit which includes line wires 16 and an overload safety switch 17 connected in series with the line wires 16, a pair of contact members 18 which are mounted on the stationary wall portion 3 of the cabinet, a pair of registering contact members 19 mounted on the removable wall section 2 of the cabinet and a control switch mechanism 20 which is also carried by the removable wall section 2. The control switch 20 is electrically connected with terminals 21 and 22 of the motor 10 by wires 23 and 24 respectively,

the terminals 21 and 22 of the motor being connected with the running winding thereof.

A starting circuit including conductors 25 and 26 is electrically connected with a terminal 27 and with the terminal 22 for supplying a current to the starting winding of the motor 10. Connected in series with the starting circuit is a mercury bulb switch which includes a tube 28 that is carried by a rocker arm 29 having a vane 30 located in the path of the air current created by the fan 14. Normally the mercury bulb switch is in the position shown in Fig. 1 and the globule 31 of mercury in the tube 28 is in contact with the terminals of the switch.

When the fan 14 is driven at a predetermined speed, the air current created thereby acting upon the vane 30 tilts the bulb 28 to the right as viewed in Fig. 1, causing the globule of mercury 31 to move out of engagement with the contacts of the switch. This action opens the starting circuit allowing the motor to be thereafter energized solely by the running circuit.

The control switch 20 is provided with actuating mechanism including an electrical clock 32 which is mounted in the chamber 6 and supported by the front wall 33 of the casing 7. The clock 32 is electrically connected in parallel with the line circuit 16 by conductors 34. A cam member 35 is driven by the clock mechanism 32 which is adapted to rotate the cam through two complete revolutions each 24 hours. Formed in the periphery of the cam 35 is a cam groove 36 consisting of two intersecting convolutions and having a projection 37 in one convolution which is adapted to engage an arm 38 of a bell crank lever 39 once each twenty four hours. One extremity of the bell crank lever 39, which is pivotally mounted on the housing of the clock 32, registers with an arm 40 of a bell crank lever 41 of the control switch 20.

The switch 20 includes a rotatable contact member 21' pivoted at 211 and having an insulated contact plate 22' secured thereto which is electrically connected with the conductor 24 by a wire 23' and a fixed yieldable contact member 25' which is electrically connected by a wire 26' with one of the contact members 19, the other contact member 19 being connected by a wire 27' with the conductor 23. The rotatable member 21' has a laterally extending arm 28' upon which a disc 29' on the end of a spring 30' has rocking contact. The other end of the spring carries a disc 31' against which an adjustable screw 32' bears. These discs have depressions for receiving the ends of the screw 32' and arm 28'. A downwardly extending arm 33' on the rotatable member 21' has its lower end located between spaced collars 34' and 35' which are threaded on a shiftable rod 36', the rod 36' being received at one end in a tubular guide 37'. The other end of the rod 36' is threaded in the boss 38' formed on the head 39' of a bellows 49, the boss 38' being guided for slidable movement in an aperture of the fixed bracket 41'.

The bellows 49 communicates through a tube 50 with a bulb 48 which is located in the refrigerating compartment 4 and held in contact with the brine tank 55 therein by a spring clip 47. The bulb 48, tube 50, and bellows 49 are filled with a suitable volatile fluid which gasifies upon heating and condenses upon cooling.

When the projection 37 of the cam 35 engages the arm 38 of the bell crank 39, the latter rotates the bell crank 41 of the control switch 20 in a counter-clockwise direction, as viewed in Fig. 4, 75

thereby causing the arm 42 of the bell crank to tilt the rotatable member 21' so as to bring the contact 22' into engagement with the fixed contact member 25' and to close the circuit of the motor 10. This tilting of the rotatable member 21' about the pivot 211 throws the pressure of the spring 30' upon it either above or below the center of the pivot 211 and this pressure thus retains the rotatable member in the position shown in the Fig. 4 when the pressure of the spring acts in a line below the axis of the pivot 211, in which position the block 22' bears against the contact 25', and when the pressure of the spring acts in a line above the center of the pivot 211 it rotates the arm 28' to maintain the lower end of the arm 33' against the stop 35' and moves the block 22' out of contact with the contact member 25'. When the arm 28' is in the position indicated in Fig. 4 the spring 30' maintains it in such position until the bellows 49 is contracted sufficiently by the attainment of a predetermined low temperature in the brine tank 55 and consequently in the bulb 48, to shift the rod 36' far enough to the right to shift the line of pressure of the spring 30' from below the center of the pivot 211 to above the center of the pivot 211, at which time the spring 30' causes the member 21' to rotate until the arm 33' contacts with the collar 35', at which time, as above described, the contact block 22' is moved out of contact with the member 25', thereby opening the motor circuit. In this manner the compressor 11' is periodically driven by the motor 10 until a predetermined low temperature is attained in the brine tank.

In the event that the temperature of the brine tank 55 increases above a predetermined degree, the volatile fluid in the bulb 48 will expand and cause the bellows 49 to expand. The bellows 49 in expanding will move the rod 36' to the left, as viewed in Fig. 4, against the pressure of the spring 52 until the line of pressure of the spring 39 is again shifted to below the axis of the pivot 211, at which time the member 21' will be rotated by the pressure of the spring 30' in a clockwise direction, as viewed in Fig. 4, until the lower end of the arm 33' again contacts with the stop 34', at which time, as above described, the block 22' will move into engagement with the contact 25' and will again close the motor circuit, thus starting another refrigerating cycle.

The control switch 20 is provided with a manual actuating device comprising a rod 44 which is slidably mounted on the housing of a clock 32. The inner extremity of the rod 44 co-acts with a downwardly curved extremity on the arm 40 of the bell crank 41 so as to rotate the latter in a counter-clockwise direction, as viewed in Fig. 1, thereby closing the switch when the rod 44 is pushed inwardly. The rod 44 carries a collar 45 which registers with a lever 46 of the overload switch 17. When the overload switch 17 is opened by an excessive load, the lever 46 is moved to the left, as viewed in Fig. 1, and it may be re-set by pushing the rod 44 inwardly.

With the above mechanism, the motor 10 may be manually started by manipulation of the rod 44, it may be started by the temperature sensitive mechanism, and by the time clock 32.

Mounted on the lower side of the removable wall section 2 of the top of the cabinet 1 is the brine tank 55 in which expansion coils 56 are located. The coils 15 communicate with a receiver 15' through a pipe 14' and the receiver is connected with the inlet end of the expansion

coils 56 by a pipe 13' in which an expansion valve 12' is connected in series. The outlet end of the expansion coils 56 is connected to compressor 11 by a conduit 57, the latter and the pipe 13' extending through an opening 58 in the removable wall section 2. The brine tank 55 has a compartment 59 in which ice trays 60 are received and the tank is surrounded by a combined baffle and drip pan 61 having an opening in its front wall in registration with the compartment 59, and the tray is provided with a front plate 62 adapted to close the opening. The bottom wall of the drip pan 61 has a forward section which is rearwardly inclined and a rear section which is forwardly inclined, there being an aperture 63 at the intersection of these sections. A bucket 64 is supported by one of the shelves 9 in the refrigerating compartment and is located directly below the opening 63 in the drip pan 61.

It will be seen that in the above construction the heat absorbing portion of the refrigerating system is mounted on the lower side of the removable wall section 2 and the heat dissipating portion of the refrigerating system is mounted on the upper side of the removable wall section. In this manner, a compact assembly is provided in which the heat absorbing means is located in the refrigerating space 4 and the heat dissipating means is located outside the refrigerated space.

One of the most important features of this invention is the provision of a refrigerating system assembly which may be inserted through the normal door opening of the refrigerated space and partially through the opening 5 in the top wall of the cabinet so as to position the heat absorbing and heat dissipating means in the above relations. This is accomplished by the provision of spaced hinge elements 65 rigidly mounted on the stationary part 3 of the top wall of the cabinet, and co-operating hinge elements 67 rigidly secured to the front portion of the removable wall section 2 or to the upper side of the brine tank 55. The outer ends of the hinged elements 67 are each provided with a cross pin 66 which are adapted to be received and retained in the hooked lower ends of the parts 65. Mounted on the upper extremity of the rear wall of cabinet 1 is a metal strip 68 which extends transversely of the chamber 6 and overhangs the opening 5 in the upper wall of the cabinet 1. This strip limits the upward rotation of the removable wall section 2 about the hinged elements. Slidably mounted in recesses 69 in the rear wall of the cabinet 1 are a pair of catches 70 which are normally urged outwardly by springs 71 so as to engage under and support the rear extremity of the removable wall section 2. The strip 68 and catches 70 retain the removable wall section 2 in a horizontal position thereby closing the aperture 5 between the interior of the chamber 6 and the refrigerated space 4 of the cabinet. A layer of yieldable material 72 is located between the upper edge of the rear wall of the cabinet 1 and the strip 68 for permitting the removable wall section 2 to be rotated slightly above the catches 70, thereby allowing the latter to be extended to engage under the section 2.

Rotatably mounted on the lower side of the wall section 2 is a shaft 73 which extends transversely of the cabinet and is provided with arms 74 and 75 each engaging an inclined inner extremity of one of the catches 70. The arm 74 has an integral lever 76 on which a flange 77 is provided. The flange 77 extends outward from the lever 76 and is adapted to be engaged by the thumb of a work-

man so as to rotate the arms 74 and 75 in a counter-clockwise direction as viewed in Fig. 1, thereby urging the catches 70 inwardly with respect to their recesses 69 so as to disengage the catches from the lower sides of the removable wall section 2. In this manner, the wall section 2 is released and permitted to rotate in a clockwise direction as viewed in Fig. 1 until it hangs in a vertically suspended relation in the refrigerated space 4, it being understood that the upper shelf 9 and bucket 64, as well as the baffle 61, are removed prior to releasing the rear end of the wall section 2.

During this clockwise rotation of the wall section 2 and the refrigerating system assembly carried thereby, the contacts 19 are moved out of engagement with the contacts 18 so as to automatically disconnect the refrigerating system from its power circuit. In the same manner, the arm 40 of the bell crank lever 41 of the control switch 20 is rotated out of registration with the bell crank 39 of the switch actuating mechanism, thereby automatically disconnecting the mechanical means by which the switch 20 is operated. When the wall section 2 together with the refrigerating system assembly carried thereby is rotated from a vertical position to the horizontal position shown in Fig. 1 the electrical connections between the contacts 19 and 18 are automatically reestablished and the mechanical means by which the switch 20 is actuated is reconditioned for operation. The electrical contacts of the stationary and removable parts of the cabinet are located with respect to each other so that they register only when a unit having a motor of proper voltage and frequency is installed in the cabinet. For example, units which operate upon 110 volts have their contact elements in a different relation than units which operate upon 220 volts so that should a workman install an improper unit in a cabinet, current would not be supplied to the motor, thus avoiding damage to the motor.

After the system has been swung downwardly, it may be removed frontwardly through the door opening by lifting it slightly and then moving it in the frontward direction.

Although only one form of the invention has been illustrated and described in detail, it will be apparent to those skilled in the art that various modifications may be made without departing from the scope of the appended claims.

What I claim is:

1. A refrigerator cabinet having a refrigerated space, a refrigerating system including a pivotally mounted insulating support in said cabinet having heat absorbing means on one side and heat dissipating means on the other side, and means normally holding the system in a horizontal operative position with said heat absorbing means located in said refrigerated space and said heat dissipating means outside of said refrigerated space.

2. A refrigerator cabinet having a refrigerated space therein and an opening through which said refrigerated space is accessible, a door on said cabinet for closing said opening, a refrigerating system hinged on said cabinet and independent of said door including heat absorbing means and heat dissipating means, and means normally holding the system in an operative position with said heat absorbing means located in said refrigerated space and said heat dissipating means located outside of said refrigerated space.

3. A refrigerator cabinet having a refrigerated space therein and an opening through which said

refrigerated space is accessible, a refrigerating system pivotally mounted on the front of said cabinet, independently of said door having a substantially horizontal axis, and including heat absorbing means and heat dissipating means, and means normally holding the system in a horizontal operative position with said heat absorbing means located in said refrigerated space and said heat dissipating means located outside of said space.

4. A refrigerator cabinet having a refrigerated space and a pair of communicating openings, said refrigerated space being accessible through one of said openings, a door on said cabinet for closing the latter opening, and a refrigerating system including heat absorbing means and heat dissipating means swingably mounted on said cabinet for complete movement through said door opening and partial movement through the other opening so as to place said system in an operative position with said heat absorbing means in said refrigerated space and said heat dissipating means outside of said space.

5. A refrigerator cabinet having a refrigerated space and an opening communicating therewith through which said space is accessible and a chamber communicating with said refrigerated space through another opening, a door on said cabinet for closing the first mentioned opening, a refrigerating system including heat absorbing means and heat dissipating means pivotally mounted on said cabinet for complete movement as an assembly about a horizontal axis through said door opening and partial movement through the other opening so as to place said system in a horizontal operative position with said heat absorbing means in said refrigerated space and said heat dissipating means in said chamber.

6. A refrigerator cabinet having a refrigerated space therein, and a refrigerating system including heat absorbing and heat dissipating means and pivotally attached to said cabinet at the upper extremity of said space, said system being swingably connected to the cabinet so as to bring the latter into an operative position with said heat absorbing means located in the upper end of said refrigerated space and said heat dissipating means located above and outside of said space.

7. A refrigerator cabinet having a refrigerated space, a refrigerating system including heat absorbing and heat dissipating means, a pair of connectible hinge members, one mounted on said system and the other mounted on said cabinet and located in the interior thereof, said system being swingable on said hinge members so as to bring the system into an operative position with said heat absorbing means located in said refrigerated space and said heat dissipating means located outside of said space.

8. A refrigerator cabinet having a refrigerated space, hinge elements in said cabinet, a member having hinge elements thereon pivotally connected with the hinge elements of said cabinet for swingably supporting said member upon a horizontal axis, a refrigerating system including heat absorbing means mounted on one side of said member and heat dissipating means mounted on the other side of said member, said member being swingably mounted on said hinge elements so as to bring said refrigerating system into a horizontal operative position, with said heat absorbing means located in said refrigerated space and said heat dissipating means located outside of said space.

9. A refrigerating cabinet having a refrigerated space and a communicating opening through which said space is accessible, a chamber above said refrigerating space having an opening communicating with the latter, hinge elements in said cabinet, a wall section pivotally connected to the hinge elements of said cabinet, and a refrigerating system including heat absorbing means and heat dissipating means mounted on the respectively opposite sides of said wall section, said system being movable into a horizontal operative position by swinging said wall section into the opening of said chamber, thereby positioning the heat absorbing means in said refrigerated space and the heat dissipating means in said chamber and separating said chamber and refrigerated space.

10. A refrigerator cabinet having a refrigerated space and a pair of door openings, a removable wall section for one of said openings and mounted for removal through the other, an evaporating unit mounted on one side of said wall section, and a condensing unit mounted on the other side of said wall section, said wall section and condensing unit forming an assembly removable in its entirety through both of said door openings.

11. A refrigerator cabinet having a refrigerated space and a communicating door opening, a removable top wall section disposed in an opening in said cabinet in separated relation to said door opening, an evaporating unit mounted on one side of said wall section, and a condensing unit mounted on the other side of said wall section, said wall section and units forming an assembly which is removable from said cabinet by inward withdrawal from said second opening and outward movement through said door opening.

12. In a refrigerator cabinet, a refrigerating system assembly in said cabinet, said assembly being removable as a unit from within said cabinet, an electrical power circuit in said cabinet having electrical connection with said system and including means for automatically breaking said connection when said assembly is removed and reestablishing said connection when said system is replaced, a switch carried by said assembly and connected in said circuit, and means mounted in said cabinet having a mechanical connection with said switch for operating the latter, said mechanical connection being discontinued as said assembly is removed from said cabinet and reestablished as said assembly is replaced.

13. A refrigerator cabinet, a removable refrigerating system assembly mounted for pivotal movement into and out of operative position in said cabinet, and an electrical power circuit in said cabinet having electrical connection with said system and including registering pairs of contact members, one pair mounted on said cabinet and the other pair mounted on said system, said contacts being engageable with each other for completing said circuit by the pivotal movement of said system into operative position.

14. A refrigerator cabinet, a removable refrigerating system assembly swingably mounted in said cabinet, an electrical power circuit in said cabinet having electrical connection with said system and including registering pairs of contact members, one pair mounted on said cabinet and the other pair mounted on said system, said contacts being engageable with each other for completing said circuit in response to the movement of said system into an operative position, a control switch in said power circuit, switch

actuating mechanism mounted in said cabinet, and means carried by said system and cabinet respectively for mechanically connecting said switch and actuating mechanism by the movement of said system into an operative position.

15. A refrigerator cabinet, a removable refrigerating system assembly swingably mounted in said cabinet, an electrical power circuit in said cabinet having electrical connection with said system and including registering pairs of contact members, one pair mounted on said cabinet and the other pair mounted on said system, said contacts being engageable with each other for completing said circuit when said system is swung into an operative position, a control switch in said power circuit, time switch actuating mechanism mounted in said cabinet, and means carried by said system and cabinet respectively for mechanically connecting said switch and actuating mechanism as said system is swung into an operative position.

16. A refrigerator cabinet, a removable refrigerating system assembly swingably mounted in said cabinet, an electrical power circuit in said cabinet having electrical connection with said system and including registering pairs of contact members, one pair mounted on said cabinet and the other pair mounted on said system, said contacts being engageable with each other for completing said circuit when said system is swung into an operative position, a control switch in said power circuit, electric time switch actuating mechanism mounted in said cabinet and electrically connected in parallel with said circuit, and means carried by said system and cabinet respectively for mechanically connecting said switch and actuating mechanism as said system is swung into an operative position.

17. A refrigerator cabinet having a refrigerated space therein, and a door opening through which said refrigerated space is accessible, said cabinet having a second opening through a wall thereof, a refrigerating system detachably mounted to pivot about the axis of a hinge part attached to said cabinet, said system comprising a wall section adapted to close said second opening, a heat absorbing unit mounted on one side of said section and a heat dissipating unit including an air cooled condenser mounted on the opposite side of said section, said system being movable about said axis to bring said wall section into position to close said second opening with the heat dissipating unit outside of said refrigerated space and said condenser in position for cooling by air circulation.

18. A refrigerator cabinet having a refrigerated space and a pair of communicating openings, said refrigerated space being accessible through one of said openings which is adapted to be closed by a door, and a refrigerating system including heat absorbing means and heat dissipating means pivotally mounted by detachable means on said cabinet for partial movement through the one of said openings not closed by a door so as to place said system in an operative position with said heat absorbing means in said refrigerated space and said heat dissipating means outside of said space.

19. A refrigerator cabinet having a refrigerated space and an opening communicating therewith through which said space is accessible and a chamber communicating with said refrigerated space through another opening, a door on said cabinet for closing the first mentioned opening, a refrigerating system including heat absorbing

means and heat dissipating means pivotally mounted in a removable manner on said cabinet for movement as an assembly about a horizontal axis partially through the second said opening so as to place said system in an operative position to refrigerate said cabinet.

20. A refrigerator cabinet, a refrigerating system assembly in said cabinet, said assembly being removable as a unit from within said cabinet, an electrical power circuit having electrical connection with said system and including means for automatically breaking said connection when said assembly is removed, a switch carried by said assembly and connected in said circuit, and means mounted in said cabinet having a mechanical connection with said switch for operating the latter.

21. A refrigerator cabinet, a removable refrigerating system assembly swingably mounted in said cabinet, an electrical power circuit in said cabinet having electrical connection with said system and including registering pairs of contact members, one pair being mounted on said cabinet and the other pair being mounted on said system, a control switch in said power circuit, electric time switch actuating mechanism mounted in said cabinet and electrically connected in parallel with said circuit.

22. A refrigerator cabinet having a door opening and a unit opening, and a refrigerating unit comprising heat absorbing means and heat dissipating means mounted upon a wall section fitting into said unit opening, said unit being passable through said door opening and the heat dissipating means being passable through said unit opening.

23. A refrigerator cabinet having a door opening and a unit opening, a refrigerating unit comprising heat absorbing means and heat dissipating means both mounted upon a wall section fitting into said unit opening, said unit being passable through said door opening and the heat dissipating means being passable through said unit opening, stop means to prevent said wall section from passing through said unit opening, and locking means to hold said wall section in place in said unit opening.

24. A refrigerator cabinet having a door opening and a unit opening, a refrigerator unit comprising heat absorbing means and heat dissipating means both mounted upon a wall section fitting into and closing said unit opening, said unit being passable through said door opening and partially through said unit opening, resilient stop and gasketing means to limit passage of said wall section portion of said unit through said unit opening, and locking means to prevent said wall section from falling back out of said unit opening.

25. In a refrigerator, the combination of a cabinet having therein a space to be refrigerated, a door opening and an opening above the door opening and communicating with said space, a refrigeration system of such dimensions as to be movable through the opening in assembling or disassembling the refrigerator, connecting means on the cabinet, and cooperating connecting means carried by the system and engaging the first connecting means for pivotally and removably supporting the system in the cabinet, said connecting means and cooperating connecting means being so constructed that they may be connected by inward movement of the system through the door opening and upward movement thereof into the upper opening.

26. A refrigerator cabinet having a refrigerated space and a communicating door opening, a door for closing said opening, one of the walls of the cabinet having an opening spaced from said door opening, and a refrigerating system including a wall section, evaporator unit and a condensing unit, with said wall section fitting said wall opening and normally closing the latter, the system and door opening being so related in dimensions as to allow the assembly to pass through the door opening in assembling the system and cabinet.

27. A refrigerator cabinet having a door opening, a wall in said cabinet extending beyond the limits of the door opening and having an opening therein, and a refrigerating system including heat absorbing and heat dissipating parts mounted in the cabinet in closing relation to said wall opening with the heat absorbing part at the inner side of the wall and the heat dissipating part at the outer side of the wall, said system being so related in size and dimensions to the door opening and to the wall opening, that it is insertable through the door opening during assembling and is partially insertable through the wall opening in order to pass the heat dissipating part of the system through said wall opening.

28. A refrigerator cabinet having a refrigerator space and a communicating door opening, a wall in said cabinet at the top end of the refrigerating space having an opening in separated relation to said door opening and communicating with said refrigerated space, a refrigerating system including a top wall section closing said wall opening and having a cooling element on the inside

of the refrigerated space and a heat dissipating element above and on the outside of the space, said system being so related in size to the door opening that it is insertable therethrough during assembling and being so related to the wall opening that it is moved into normal position relative thereto by upward movement of the system during such assembling.

29. A refrigerator cabinet having a refrigerated space and a communicating door opening, a door for closing said opening, a wall at the upper end of said refrigerated space having an opening in separated relation to said door opening therein; and a refrigerating system in said cabinet including a wall section disposed in said wall opening and an evaporating unit and a condensing unit on said wall section, said system being so related to the door opening in dimensions that it is insertable through such opening during assembly and being so related to the wall opening in size that the wall section is upwardly movable into the wall opening.

30. A refrigerator cabinet having a door opening for access to the refrigerated storage space of the cabinet and having a second opening leading into the refrigerated space, and a refrigerating system partially projecting through said second opening and including a wall section closing said opening, said system being so related to the door opening in dimensions that it is insertable therethrough during assembling, and being so related to the second opening that it is partially insertable through the second opening.

GLENN MUFFLY.