

May 28, 1935.

P. A. CELANDER

2,003,274

REFRIGERATION CABINET

Filed March 29, 1934

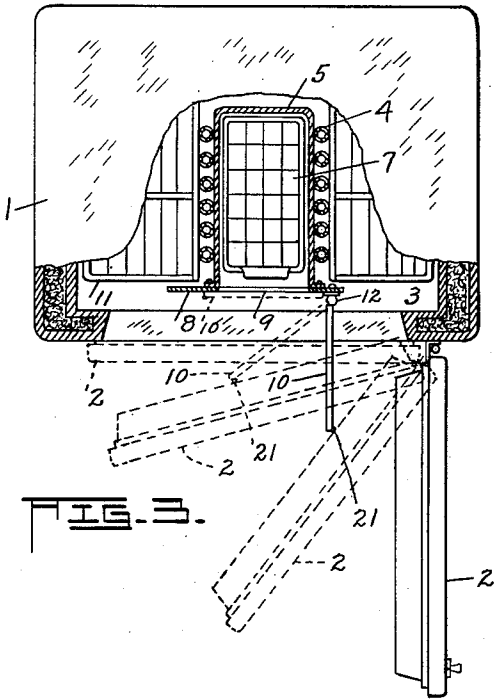


FIG. 3.

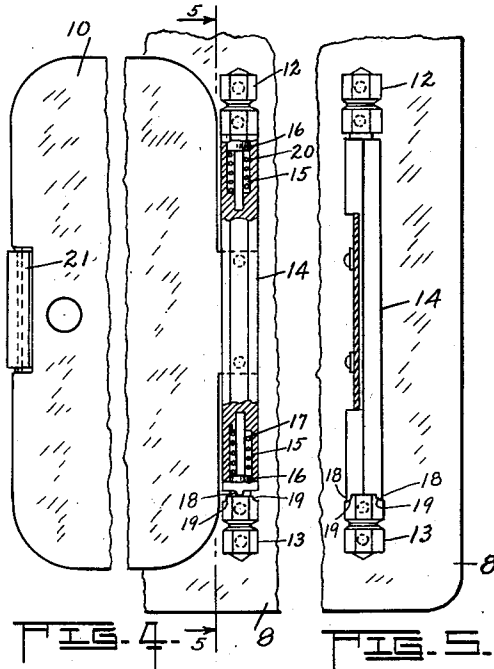


FIG. 4.

FIG. 5.

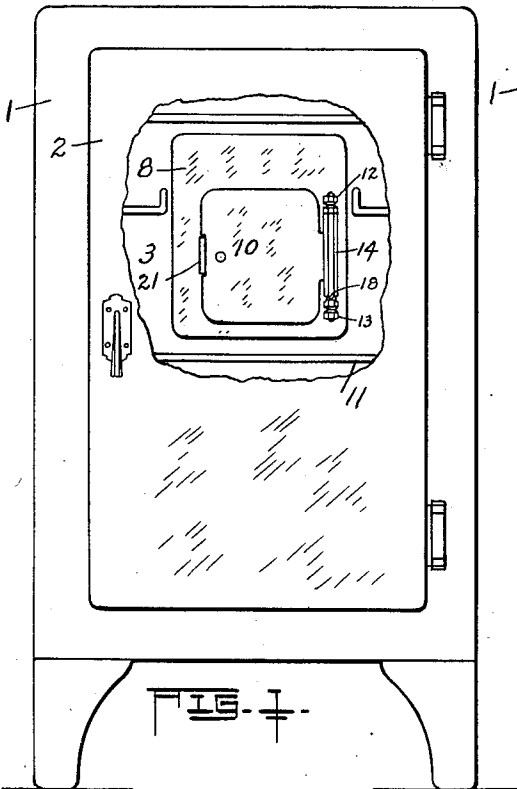


FIG. 1.

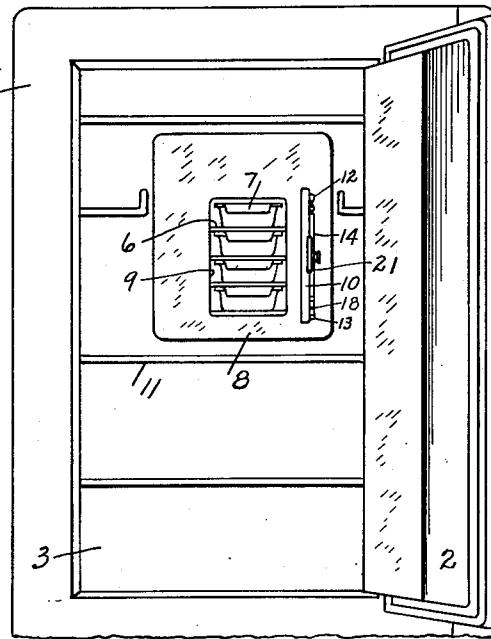


FIG. 2.

INVENTOR.

BY

Langdon Munn

ATTORNEY.

UNITED STATES PATENT OFFICE

2,003,274

REFRIGERATION CABINET

Philip A. Celander, Bloomington, Ill., assignor to
Williams Oil-O-Matic Heating Corporation,
Bloomington, Ill., a corporation of Illinois

Application March 29, 1934, Serial No. 717,908

1 Claim. (Cl. 62—89)

This invention relates to refrigeration cabinets employing a mechanical refrigeration system and more particularly to means for automatically closing the ice cube compartment upon the closing of the cabinet door.

It is common practice in cabinets of this character to provide a plurality of removable ice cube trays within the cooling element and cover the same with a spring-pressed closure so that to remove the trays one hand is required to hold the closure open while the trays are being removed by the other hand. It is an object of this invention to provide such a closure with means to hold it against the tension of the spring when it has opened and to allow the same hand as opens the closure for the removal of an ice tray.

In many cabinets of this description, the cabinet door and the tray closure are hinged on opposite sides, and if the door were to be closed while the closure was held open, as contemplated by this inventor, the closure would either be deformed or the door could not be closed. It is another object of this invention to provide means whereby the closing of the cabinet door will automatically release the closure to cover the ice trays.

With these and other objects in view, reference is made to the accompanying sheet of drawing, which illustrates a preferred embodiment of this invention, with the understanding that minor detail changes may be made without departing from the scope thereof.

In the drawing:

Fig. 1 is a view in front elevation of a commercial cabinet of the character above described with a portion of the door broken away to illustrate the ice cube tray container with the tray opening covered by a hinged closure.

Figure 2 is a similar view with parts broken away at the bottom and illustrating the door and closure both in open position.

Figure 3 is a top plan view of Figure 1 with parts broken away and partly in section, illustrating both door and closure in open position and the positions assumed by each as the door is being closed, indicated in broken lines.

Figure 4 is an enlarged detail view with parts broken away and partly in section of the ice cube tray compartment closure.

Figure 5 is a view in section taken on the line 5—5, Figure 4, looking in the direction of the arrows.

As shown in the drawing, a commercial refrigerating cabinet 1 of the type heretofore described is provided with a door 2 forming an air-tight

closure with the refrigerated compartment 3. The evaporator 4 or cooling element of the refrigerating system is preferably mounted axially within the refrigerated compartment 3. A rectangular ice cube tray containing compartment 5 is mounted within the evaporator 4. A plurality of shelves 6 are preferably mounted within the casing 5 for slidably supporting ice cube trays 7, and the open front end of the casing 5 mounts a plate 8 in front of the cooling element 4 of sufficient extent to render the element invisible when the door of the cabinet is open. The plate 8 is provided with an opening 9 for the ready insertion and removal of the ice cube trays 7. The ice tray opening 9 is provided with a closure 10 hinged upon the plate 8 adapted to cover the ice tray opening 9. The refrigerated compartment is provided with the usual shelves 11.

This invention contemplates hinging the closure 10 on the same side as the door 2. The closure 10 is hinged to the plate 8 between the shouldered pintles 12 and 13 secured to the plate 8, as by tap screws passed through the inner side of the plate. The hinge member or leaf 14 is preferably in the form of a rod secured on one side, preferably intermediate its ends, by overlapping one side of the closure 10. The opposite ends of the rods are provided with similar recesses 15 adapted to receive the reduced portions 16 of the pintles 12 and 13 and to be mounted both slidably and rotatably thereon. A coil spring 17 is mounted within the recess 15 between the end of the reduced portion 16 of the pintle 13 with one end engaged in a groove in the side of the portion 16 of the pintle and the other end engaged in a recess in the body of the rod 14, which spring is normally placed under sufficient tension to ordinarily hold the closure 10 in contact with the plate 8 to cover the opening 9, but will allow the opening of the door for the insertion and removal of the ice trays. Ordinarily this spring, if the closure is opened and released, will normally return it to cover the opening 9. In order to automatically hold the closure in the open position shown in Figure 10, the lower side of the rod 14 is provided with diametrically oppositely disposed depending ribs 18 adapted to normally ride over the shoulder on the lower pintle 13 and the upper surface of said shoulder is provided with corresponding oppositely disposed grooves 19 so arranged that when the closure 10 is in the open position the ribs 18 will enter said grooves 19. In order to overcome the tension of the spring 17, from moving the

ribs 18 out of the grooves 19, a compression spring 20 is mounted in the recess 15 in the opposite end of the rod 14 which spring bears against the bottom of the depression and also the end of the reduced portion 16 of the pintle 12 normally exerting a sliding movement to the rod 14 in the direction of the pintle 12.

By the above described construction, closure 10 is readily rotatable about its hinge, and when open sufficiently to allow the removal or insertion of an ice tray in the compartment 5, the closure may be released, as the engagement of the ribs 18 with the grooves 19 will normally hold the closure in the open position.

Should the user of the cabinet forget to rotate the closure 10 from its open position and slam the door 2 closed, as both closure and door are hinged on the same side, the inner surface of the door will engage the free end of the closure to impart sufficient rotation thereto to lift the rib 18 out of the groove 19 and the spring 17 will automatically complete the operation of the closure to cover the openings 9. It is preferable to provide the free vertical edge of the closure 10 with an anti-friction roller 21 to be engaged by the inner surface of the door 2, if closed while the closure is open, to not only prevent the defacing of the contacting surface, but to assist in the imparting of the rotative movement to the closure.

From the above description, it is readily seen that ice cube trays may be inserted or removed by the same hand that is employed in swinging the closure 10 to its open position, as the closure

10 will remain open until manually closed or until the door 2 of the cabinet is closed. It is also seen that if the user forgets to swing the closure 10, the closing of the door 2 automatically releases the closure which through the action of the spring 17 immediately completes the rotation to cover the opening 9 and no damage will be done to the cabinet or to the door or closure, even if the door is slammed shut, as is very often the case.

What I claim is:

A refrigerating cabinet for a mechanical refrigeration system, a refrigerated compartment therein normally closed by a hinged air-tight door, a cooling element of the system mounted in said compartment, a casing for removably containing a plurality of ice cube trays mounted within and supported by the cooling element, a plate mounted upon the tray containing casing having an opening therein for the insertion and removal of the trays therethrough, a closure for said opening, a spring-actuated hinge on the side adjacent the door hinge between the closure and plate normally maintaining the opening closed, and means actuated by the opening of the closure sufficiently for the removal of a tray to hold the closure in that position against the tension of the spring and means on the free side of the closure adapted to be engaged by the inner surface of the compartment door in closing to automatically free the closure to cover the plate opening.

PHILIP A. CELANDER.