H. H. HARRIS.

DISPENSING REFRIGERATOR.

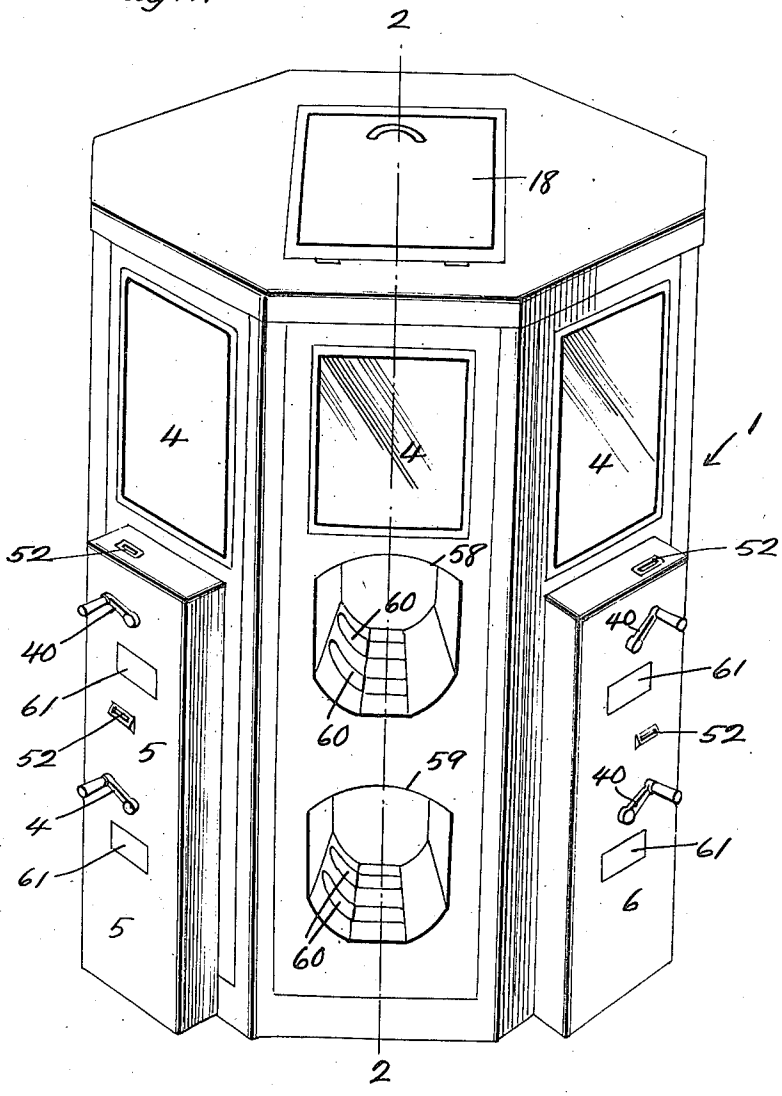
APPLICATION FILED AUG. 27, 1917.

1,300,608.

Patented Apr. 15, 1919.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

G. Hennessy

L. M. McCall

INVENTOR

Henry H. Harris,

BY Richard B. Owen,

ATTORNEY

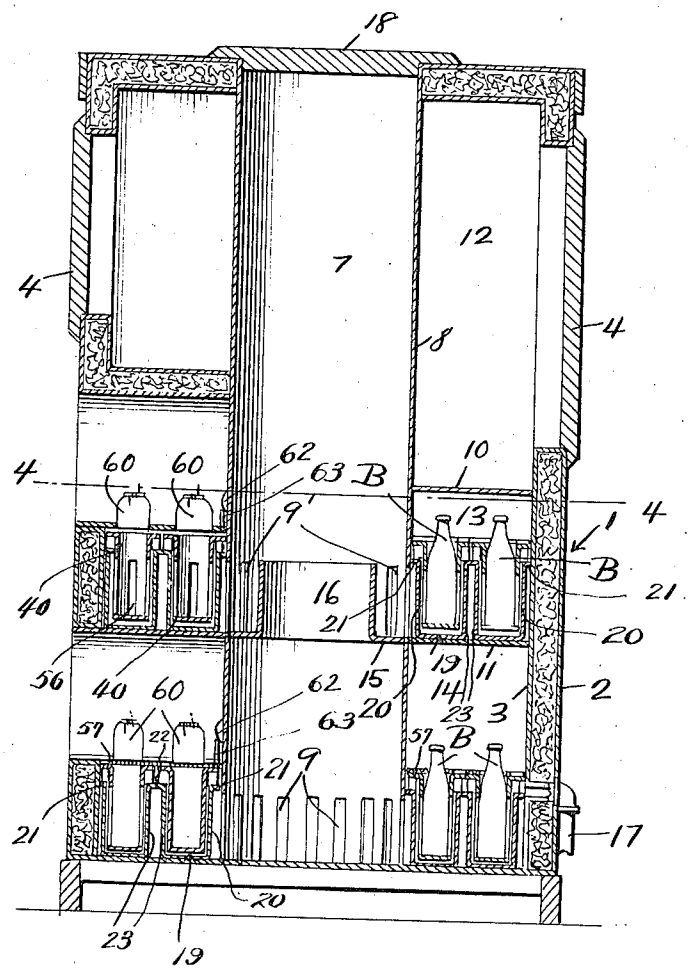
H. H. HARRIS.
DISPENSING REFRIGERATOR.
APPLICATION FILED AUG. 27, 1917.

1,300,608.

Patented Apr. 15, 1919.

4 SHEETS—SHEET 2.

Fig. 2.



WITNESSES

G. Hennessy
L. M. McCall

INVENTOR

Henry H. Harris,

BY Richard B. Owen,

ATTORNEY

H. H. HARRIS.

DISPENSING REFRIGERATOR.

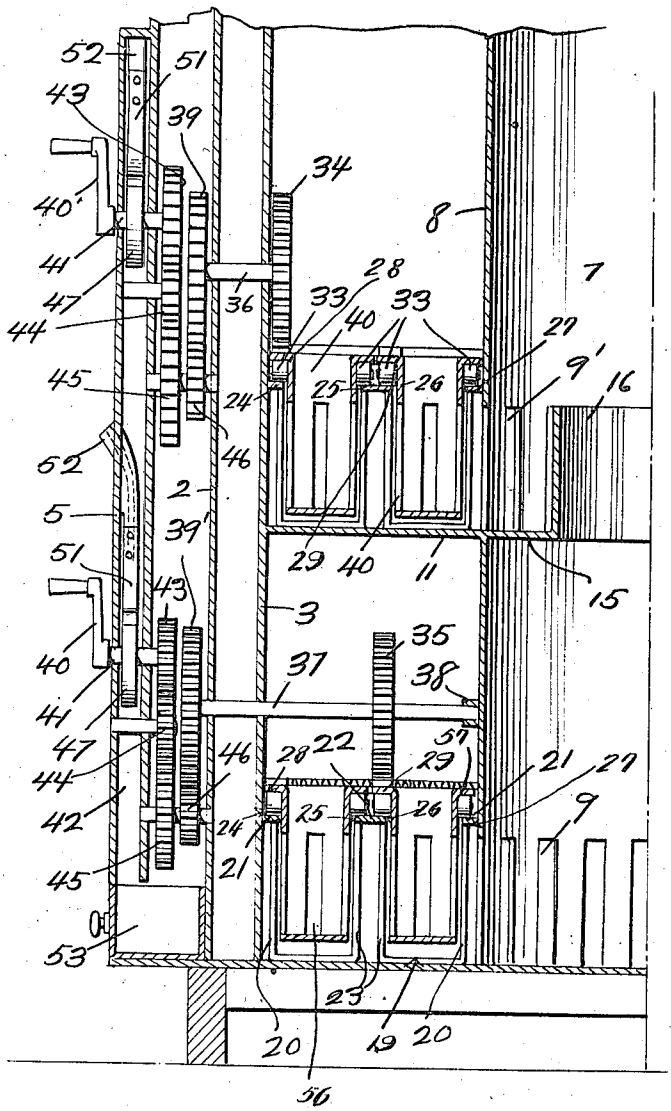
APPLICATION FILED AUG. 27, 1917.

1,300,608.

Patented Apr. 15, 1919.

4 SHEETS—SHEET 3.

Fig. 3.



WITNESSES

G. Hennery

L. M. McColl

INVENTOR

Henry H. Harris,

BY Richard Owen,

ATTORNEY

H. H. HARRIS.

DISPENSING REFRIGERATOR.

APPLICATION FILED AUG. 27, 1917.

1,300,608.

Patented Apr. 15, 1919.

4 SHEETS—SHEET 4.

Fig. 4.

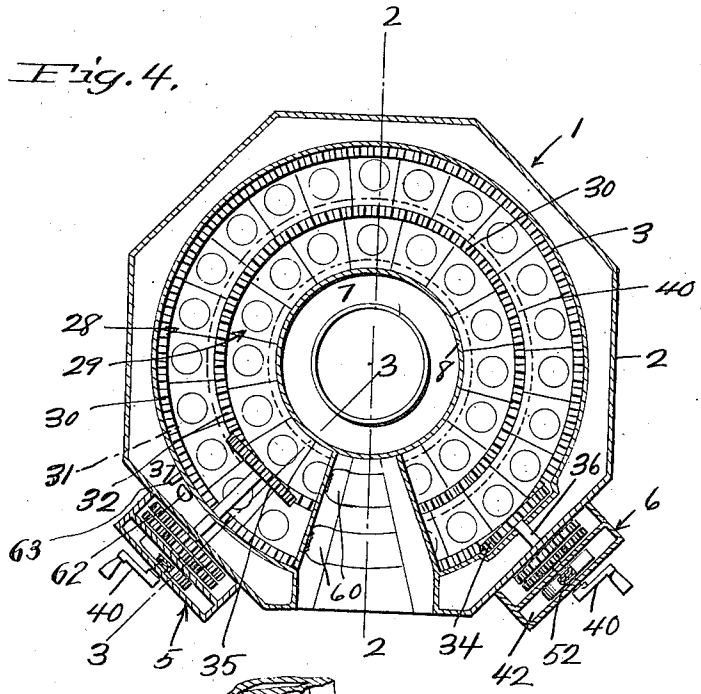
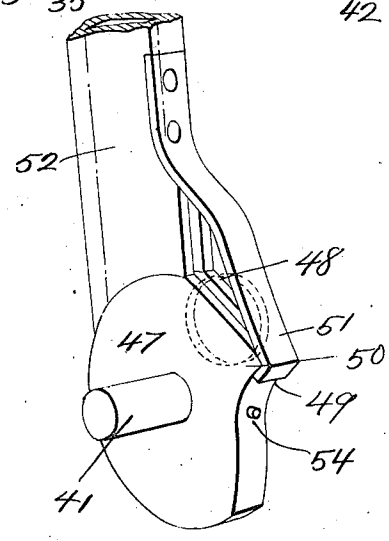


Fig. 5.



WITNESSES

G. Hennessy

S. M. McBoll,

INVENTOR

Henry H. Harris,

BY Richard B. Owen,

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY H. HARRIS, OF PERU, INDIANA.

DISPENSING-REFRIGERATOR.

1,300,608. Specification of Letters Patent. Patented Apr. 15, 1919.

Application filed August 27, 1917. Serial No. 188,411.

To all whom it may concern:

Be it known that I, HENRY H. HARRIS, a citizen of the United States, residing at Peru, in the county of Miami and State of Indiana, have invented certain new and useful Improvements in Dispensing-Refrigerators, of which the following is a specification.

This invention relates to a combined coin-controlled delivery cabinet and refrigerator, and more particularly to an apparatus of this type for dispensing bottled goods.

The main object of the invention is to provide a simply constructed and efficient apparatus of this character for cooling and vending soft drinks, such as coca cola, pop, and the like, which will produce a maximum cooling effect with a minimum consumption of ice and which after being filled will require very little attention, collecting automatically for every bottle delivered.

Another object is to provide an apparatus of this character, the ice chamber of which is so constructed that after it is filled with ice, it is completely sealed against the entrance of air and consequently the melting of the ice is reduced to a minimum.

Another object is to so construct a cooler or refrigerator chamber in which a plurality of ice water containing compartments are provided for goods to be cooled and the ice chamber of which is constructed to permit the water to overflow to the compartment below when it reaches a predetermined height.

Another object is to provide improved carriers for the goods to be delivered.

Another object is to provide means for giving notice when the bottles on any of the carriers are nearly depleted.

Another object is to provide means for limiting the backward turning of the coin disk to permit it to be turned only far enough to allow a coin to drop into the slot.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a perspective view taken from the front of an apparatus constructed in accordance with this invention,

Fig. 2 is a central vertical section taken on the line 2—2 of Fig. 1,

Fig. 3 is an enlarged detail vertical section taken on the line 3—3 of Fig. 4,

Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 2, and

Fig. 5 is a detail perspective view of the coin disk and a portion of the chute with the means for locking the disk against turning.

In the embodiment illustrated, a double-walled cabinet 1 is shown, the outer casing 2 of which is octagonal in cross section, although it may be of any other desired cross sectional configuration. The inner shell or wall 3 of this cabinet which is spaced from casing 2 is shown circular in cross section The octagonal form of the outer casing provides for the mounting thereon of a plurality of mirrors 4 which render the cabinet more attractive. This configuration of the casing, also provides for the convenient mounting of the gear chambers 5 and 6 thereon and which contain mechanism for actuating the delivery apparatus as will be presently described.

An ice chamber 7 is arranged centrally within the cabinet, being constructed of a cylinder 8 extending from the top to the bottom of the cabinet and spaced a suitable distance from shell 3 to provide ample space between them for the goods to be cooled and vended. This cylinder 8 is provided with a plurality of peripheral longitudinally extending slots 9 at its lower end and with a similar series 9′ formed therein at a point intermediate the ends of said cylinder for a purpose presently to be described.

The refrigerating chamber which is formed between cylinder 8 and shell 3 is divided by horizontal partitions 10 and 11 into three compartments 12, 13 and 14, the upper compartment 12 being the storage compartment in which the goods are placed for cooling before they are supplied to the delivery mechanism.

An annular horizontal partition 15 is disposed within the ice chamber 7, being arranged in alinement with the horizontal partition 11 which forms the bottom of compartment 13 as is shown clearly in Figs. 2 and 3. Rising upwardly from the inner edge of this annular partition 15 is a flange 16 which is of a height corresponding to the

length of the slots 9′ which extend from the partition 15 upwardly. These slots 9′ afford communication between the ice chamber 7 and the compartment 13 and this compartment is designed to contain water up to a level indicated by the top of the flange 16, it being understood that when the water rises to this point it will overflow from said cylinder and pass to the bottom of the chamber 7 into the compartment 14 below. The slots 9 in the lower end of the cylinder 8 communicate with the compartment 14 which is also designed to contain water which circulates around the ice contained in the chamber 7 and around the goods to be cooled which are contained in the compartment 14 thereby effectually cooling said goods. After the water in this chamber reaches a predetermined height it will flow out through a pipe 17 and be conducted to any suitable place of deposit therethrough.

The upper end of the cylinder 8 is closed by a tight fitting cover 18 as is shown clearly in Fig. 2 and which is hinged to the cabinet as shown in Fig. 1, being designed to permit access to the chamber 7 for filling it with ice. It will thus be seen that after ice has been placed in this chamber 7 and the top 18 closed, water having been supplied to the compartments 13 and 14 will completely seal the chamber against any entrance of air thereinto and thus prevent melting of the ice which will reduce its consumption to a minimum and yet provide a cooling effect on the goods contained in the refrigerator compartments 13 and 14.

Mounted on the partition 11 and on the bottom of the casing are track supports as 19, which are designed for supporting annular tracks 24, 25, 26 and 27, the purpose of which will be presently described.

The track supports 19, any suitable number of which may be employed, which are shown clearly in Fig. 3, are double U-shaped, the outer arms 20 of which have outturned lateral flanges 21 while a cross bar or plate 22 connects the inner arms 23 of said members, and these flanges and bar form the tracks 24, 25, 26 and 27.

These supports 19 and the tracks carried thereby are arranged between the ice chamber 8 and the shell 3 in both compartments 13 and 14.

Mounted to travel on the two pairs of tracks in each compartment are two bottle carriers 28 and 29, the carriers in both compartments being exactly alike, hence one pair only will be described in detail. These carriers each is equipped with an outer crown gear 30 having an annular pocket supporting flange 31 around its inner edge and a similar flange 32 spaced inwardly therefrom on which and flange 31, bottle carrying pockets 40 are designed to rest and to travel therewith as will be presently described. Each carrier has rollers 33 depending therefrom which travel on their supporting tracks to facilitate their movement and reduce friction.

Operating gears for the carriers are housed in the chambers 5 and 6 on the outer face of the cabinet 1 as is shown clearly in Figs. 1, 3 and 4.

Meshing with each outer crown gear 30 is a gear wheel 34 and with the inner crown gear 30′ is a gear wheel 35. These gear wheels are carried by shafts 36 and 37, respectively, the shaft 36 being journaled in the walls of the casing 2 as is shown clearly in Fig. 3. The shaft 37 extends across the compartment 14 and has one end journaled in a bearing 38 carried by the outer face of the cylinder 8. The other end of this shaft 37 extends through the walls of the casing 2 into a gear chamber mounted thereon. A gear 39 is carried by the outer end of shaft 36 and a similar gear 39′ is carried by the outer end of shaft 37 and these gears constitute elements of gear trains which are actuated by means of crank handles 40′ arranged outside the chambers 5 and 6. Each of these crank handles 40′ is engaged with a shaft 41 which extends through a coin chute 42 and carries at its inner end a gear 43. These gears 43 each mesh with a gear 44 of a size similar thereto, said gears 43 and 44 being preferably about two inches in diameter, although obviously they need not necessarily be restricted to such size. The gears 44 mesh with gears 45 arranged in a plane below them and carried by shafts journaled in the inner wall of the chamber in which they are mounted and in the inner wall of the coin chute 42. On the same shafts which carry the gears 45 are gears 46 which mesh with the gears 39 and 39′ and through which motion is transmitted to the shafts 36 and 37, respectively, and through their gears 34 and 35 to the crown gears 30 and 30′ of the carriers. It will thus be seen that when the crank handles 40 are turned the gears 34 and 35 will be actuated. The rapidity with which these crown gears are turned is to be controlled of course by the size of the intermeshing gears of the trains with which the crank handles 40′ are actuated.

Each of these shafts 41 which carry the crank handles 40′ pass through coin disks 47 and are fixedly connected therewith. As shown these disks are mutilated and each has a slot 48 in its flat upper edge which opens into a pocket 49 to receive the coin which releases shaft 41 to permit the turning thereof as will be presently described, the outer edge of the flattened slotted portion of the disk forms a nose 50 which is designed to be engaged by a spring catch 51 carried by a coin receiving chute 52 the mouth of which opens through the front

wall of the gear casing in which said chute is mounted and the other through the top of said casing as is shown clearly in Figs. 1 and 3. These chutes 52 are rigidly secured to the gear casing and the spring catches 51 carried thereby operate to hold the disks 47 in locked inoperative position and prevent all possibility of the turning of said disks until said catches are released. The release is accomplished by means of a coin being inserted in the chute in connection with which it is used as is shown clearly in Fig. 5, so that when the shaft 41 is turned by means of the crank handle 40′ the spring 51 is lifted by the pressure of the coin thereagainst and is thereby released from its engagement with the nose 50 of disk 47, permitting said disk to be turned and the coin to drop out of the pocket 48 into the chute 42 through which it is conducted to a suitable place of deposit, a drawer 53 being here shown arranged at the lower end of said chute to receive the coins and which will obviously be locked and be only accessible to those having keys fitted thereto.

When the disk is released, the shaft 41 being turned will operate the gear 43 carried thereby and through this gear 43 and those meshing therewith will operate gear 34 and turn the carrier with which it is engaged a sufficient distance to disharge one of the bottles carried thereby in a manner presently to be described.

As is shown clearly in Fig. 1, four coin chutes 52 are provided which are connected to control the four carriers disposed within the compartments 13 and 14, respectively, as above described two of said carriers being in compartment 13 and two in compartment 14 as is clearly shown in Figs. 3 and 4. Each disk 47 is secured to its shaft 41 by means of a set screw 54 to provide for the adjustment of the disk for catching the coin inserted in the chute 52 in connection with which it is used. Each of the coin disks 47 has a lug 47′ projecting therefrom which is designed to engage a coöperating lug carried by the front wall of the gear casing in which it is mounted to prevent the backward turning of the disk beyond a predetermined point, it being permitted to turn only sufficient to allow a coin to drop into the slot 48.

When it is desired to operate the mechanism, the crank must be reversed one inch in order to permit the coin to drop into the slot or pocket 48 and on the forward turning of the crank this coin will operate to raise the catch or trigger 51 unlocking it in the manner above described and when the crank returns to its initial position, the spring catch 51 will again snap into engagement with the nose 50 of the disk and lock it until another coin is inserted in the chute 52.

Mounted in each of the carriers are a plurality of bottle pockets 40 which are shown clearly in Figs. 2 and 3. These pockets 40 are here shown cylindrical in form and are provided with a plurality of longitudinally extending slots 56 arranged peripherally around the pocket and through which it is designed that the water shall circulate to exert a cooling action on the bottle B contained therein. A flange 57 extends laterally from the upper end of each pocket and is of a length sufficient to span the distance between the flanges 31 and 32 of the carriers on which it is designed to be mounted, it being obvious from an inspection of Fig. 4 that the ends of the pocket flanges will rest on the carrier flanges and be held to travel therewith. These pockets 40 are arranged around the carriers with their side edges abutting as is shown clearly in Fig. 4, and any desired number thereof may be employed according to the size of the pockets and the bottles which are to be carried thereby.

Opening through one side wall of the refrigerator casing between the outer shell 2 thereof and the inner ice carrying cylinder 8 are two openings 58 and 59, which are arranged between the gear casings 5 and 6 and are designed to receive the bottles ejected on the operation of the gear controlled mechanism above described. The carriers are designed to travel through these openings 58 and 59 and as a bottle is ejected it will operate to raise a spring pressed flap 60 so that the bottle may be removed and on its removal this flap will automatically close and thereby preserve the temperature of the refrigerator without permitting the cold air therein to escape.

Arranged on the outer face of the gear casings 5 and 6 are label carriers 61, four being here shown and which are designed to contain labels showing the flavor or the contents of the bottles which are to be dispensed when the crank handle arranged above said label is actuated.

While this apparatus is shown and described as capable of containing and dispensing four different kinds of bottled goods, it obviously may be altered to vary its number without in any way departing from the scope of this invention.

The bottled goods are first placed in the cabinet in the compartment 12 through a door at the rear thereof, not shown herein, and after they become cooled they are inserted in the bottle pockets or carriers to take the places of those which have been ejected.

Signaling mechanism in the form of gongs are preferably connected with each carrier, to give warning when the goods in any of the carriers have become depleted within a predetermined number of bottles, say for instance, six. This signal mechanism as shown comprises a gong 62 positioned ad-

jacent each carrier and a hammer 63 carried by each carrier at a predetermined point thereon is designed to engage said gong to give warning that the goods or bottles carried by the carrier are nearly exhausted so that an attendant may be notified in ample time to replenish the supply before it becomes completely depleted.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the claimed invention.

I claim:—

1. In an apparatus of the class described, a cabinet having an ice chamber, a cooling chamber surrounding said ice chamber, a bottle carrier mounted to travel in said cooling chamber, said cabinet having an opening in one side wall through which said carrier passes in its travel, actuating means for said carrier, means for locking said actuating means against movement, coin-controlled means for releasing said locking means, and spring-pressed means for automatically closing the opening through which the bottles are ejected after the ejected bottle is removed.

2. In a refrigerator, a cabinet, a cylindrical ice chamber therein extending from the top to the bottom thereof and spaced from the inner walls of said cabinet to form a cooling compartment, said cylindrical chamber having a plurality of longitudinally spaced series of peripheral longitudinally extending slots, a horizontal partition in said cooling compartment, an annular partition in said ice chamber at the bottom of one of the series of slots, a flange rising from the inner edge of said annular partition to control the height of the water collecting in said compartment and permit it to overflow to the chamber below, and means for supporting articles to be cooled in the water of said cooling compartment.

3. In a refrigerator, a cabinet, a cylindrical ice chamber therein extending from the top to the bottom thereof and spaced from the inner walls of said cabinet to form a cooling compartment, said cylindrical chamber having a plurality of longitudinally spaced series of peripheral longitudinally extending slots, a horizontal partition in said cooling compartment, an annular partition in said ice chamber at the bottom of one of the series of slots, a flange rising from the inner edge of said annular partition to control the height of the water collecting in said compartment and permit it to overflow to the chamber below, traveling means for supporting articles to be cooled in the water of said cooling compartment, and means for actuating said traveling means.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY H. HARRIS.

Witnesses:
J. H. SMITZ,
C. O. MANESMITH.