May 14, 1929. J. N. ECONOMOS 1,713,333

REFRIGERATOR

Filed Dec. 23, 1926 2 Sheets-Sheet 1

Fig. 1.

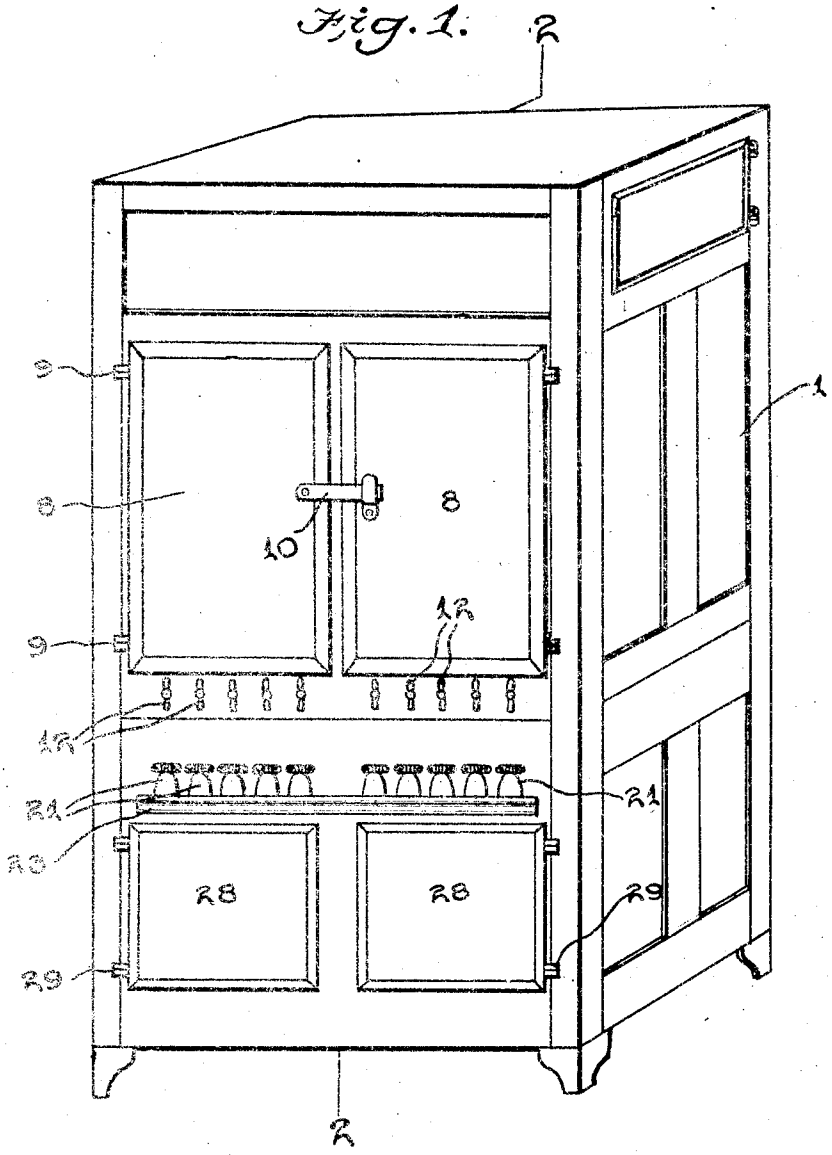
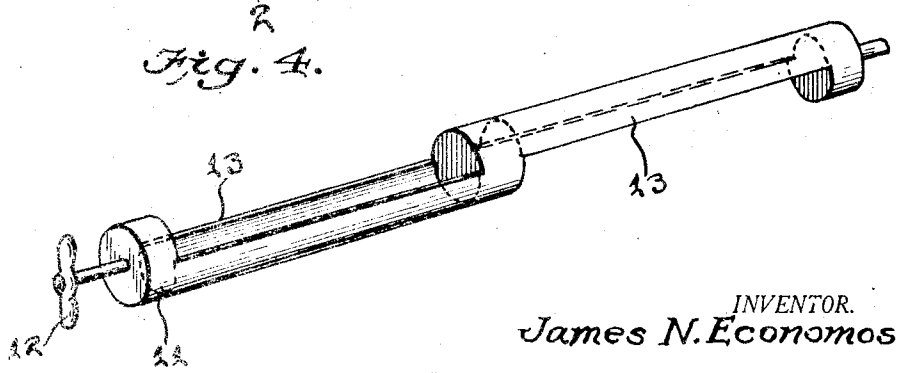


Fig. 4.



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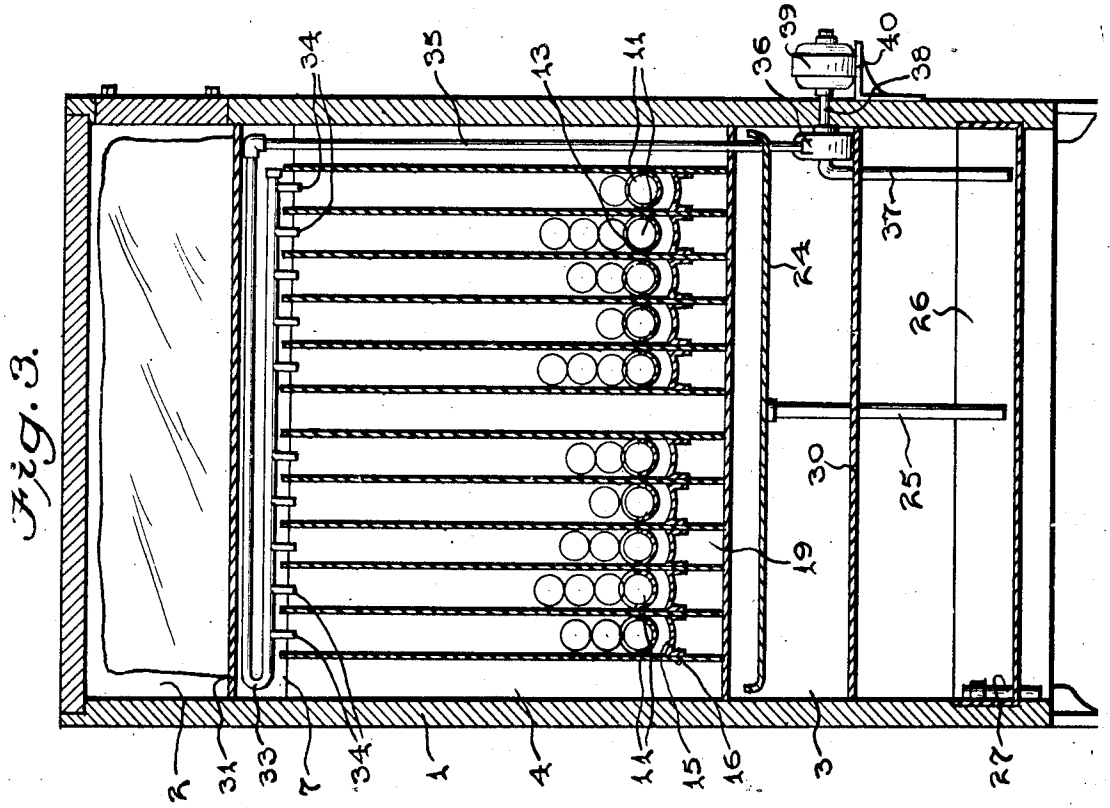


Fig. 3.

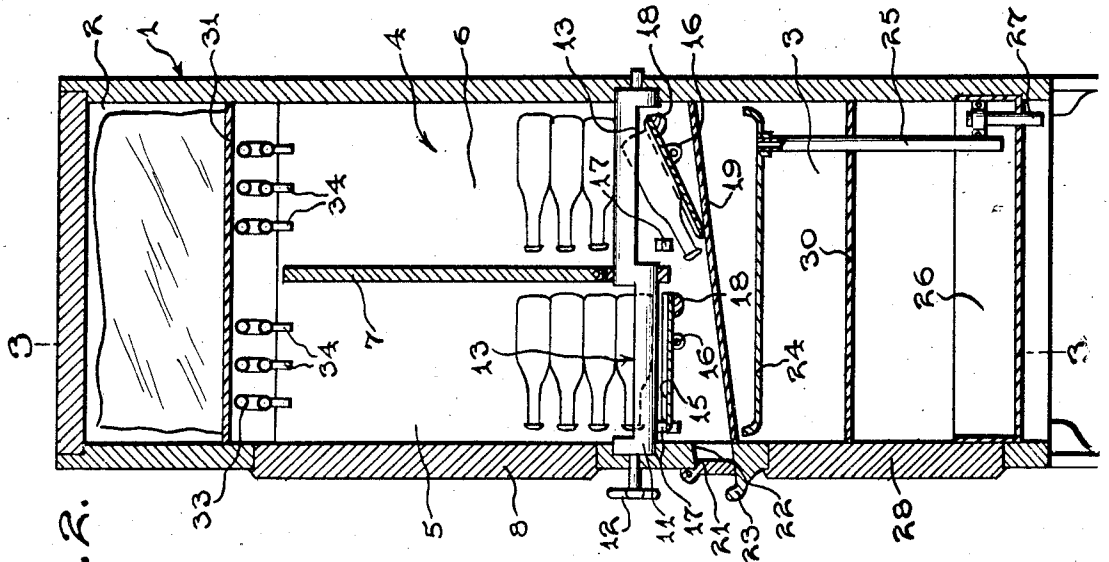


Fig. 2.

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UNITED STATES PATENT OFFICE.

JAMES N. ECONOMOS, OF CHICAGO, ILLINOIS.

REFRIGERATOR.

Application filed December 23, 1926. Serial No. 156,656.

It is a purpose of the present invention to provide, in a refrigerator, means for the support of bottled goods such as soft drinks and the like in the upper part and milk in the lower part, with means immediately below the soft drink bottled goods for dispensing such goods without opening the top of the refrigerator and exposing the ice to the outside atmosphere.

Another purpose is to provide a refrigerator with a plurality of parallel compartments for containing various flavors of soft drink bottled goods, including a rotating dispensing device below each compartment, so that a bottle of goods at a time may be allowed to discharge from the refrigerator.

Still another purpose is the provision of a rotating tubular holder cut away at diagonally opposite portions, whereby diagonally opposite portions of the tube may alternately receive a bottle at a time whereby, upon rotating the tube, a bottle may be discharged first from one portion of the tube and then from the opposite portion, there being a slide with pivotal chutes thereabove to direct the bottled goods toward an outlet, of which a swinging closure has a plurality of openings to permit the necks of the bottles to project therethrough, whereby they can be extracted.

A further purpose is to provide a refrigerator with a tank at the bottom to receive milk bottles, in conjunction with means for circulating ice water from the tank to a coil in the ice compartment and then back to the tank, thereby maintaining the water in the tank cold.

A still further purpose is to provide alternate abutments in the several soft drink bottled goods compartments for guiding the bottles into said dispensing tubes and thereby preventing the bottles from jamming in the compartments.

It is to be understood that the particulars herein given are in no way limitative and that, while still keeping within the scope of the invention, any desired modifications of detail and desired proportions may be made in the apparatus according to the circumstances.

The invention comprises further features and combinations of parts to be hereinafter set forth, shown in the drawings and claimed.

In the drawings:

Figure 1 is a view in perspective of the improved refrigerator constructed in accordance with the invention.

Figure 2 is a vertical sectional view on line 2—2 of Figure 1.

Figure 3 is a vertical sectional view on line 3—3 of Figure 2, showing the plurality of compartments for the soft drink bottled goods and also illustrating the means for circulating the water from the tank at the bottom to the coil in the ice chamber.

Figure 4 is an enlarged detail view of one of the rotating dispensing tubes.

Referring to the drawings, 1 designates a casing which may be any size and shape, preferably rectangular as shown, and which is divided into an ice chamber 2, a compartment 3 at the bottom, and an intermediate compartment 4. This latter compartment extends from the bottom of the ice chamber to a point substantially midway the height of the casing. The compartment 4 is subdivided into forward and rear pluralities of compartments 5 and 6 for the reception of soft drink bottled goods.

A partition 7 divides the forward and rear compartments 5 and 6. This partition 7 is pivoted so that the upper end thereof may be swung forward to permit bottled goods to be arranged in the rear compartments 6. Doors 8 are hinged at 9 for closing the compartment 4. In order to arrange bottled goods in the compartments 5 and 6, the doors 8 are opened, then the partitions 7 are swung forwardly and downwardly, allowing the bottled goods to be arranged in the compartments 6, then the partitions 7 are disposed in vertical positions and then bottled goods are arranged in the compartments 5, after which the doors 8 can be closed and latched, as shown at 10.

At the bottom of the compartment 4 is a plurality of dispensing tubes 11, one extending from the forward portion of each compartment 5 to the rear portion of each compartment 6. The dispensing tubes are capable of manual rocking movements for the purpose of dispensing bottled goods and are provided with handles 12 which may be grasped by an operator for such purpose. Each dispensing tube has diagonal portions cut away, as shown at 13, so as to allow the bottled goods to enter diagonally opposite portions of the tube.

Immediately below the dispensing tubes are rocking chutes 15, the upper faces of which are concaved, as shown, to conform to the shape of the bottle. The chutes are pivotally mounted, as at 16, the longer ends of the chutes being adapted to engage abut-

ments 17 to limit them in horizontal positions. The shorter ends of the chutes carry weights 18, whereby the chutes are capable of restoring to initial position after the discharge of the bottles. Below the chutes is a slide 19 upon which the bottles engage after leaving the pivoted chutes and slide toward a discharge opening covered by a pivoted closure 21 which is provided with a plurality of arched openings 22, one below each of the compartments 5.

A bottle, as it is discharged by a discharge chute 15, moves down the slide 19, so that the mouth and neck portion of the bottle may project through an opening normally covered by a swinging closure 21, so that it may be grasped and removed and given to the purchaser. A shelf 23, which is curved upon its upper face, is immediately below the closure 21 to assist in supporting the neck of the bottle where it protrudes through the opening.

A suitable drip pan 24 is arranged below the slide to receive the water from the ice chamber 2, there being a pipe 25 extending from the pan to a tank 26 at the bottom of the refrigerator casing. The tank 26 is adapted to receive milk bottled goods which are kept cold by the water from the drip pan 24. An overflow pipe 27 is mounted in the tank 26 to carry off the superfluous water and to keep the water in the tank at a predetermined level. Doors 28 are hinged at 29 for closing the compartment 3 which receives the milk bottled goods which rest in the tank 26 and by opening the doors access may be had to the bottled goods. A shelf 30 is mounted in the compartment 3 for subdividing the same, the shelf acting to support various articles.

The bottom 31 of the ice chamber is perforated in a suitable manner to permit the drippings from the ice to fall upon the soft drink bottled goods in the compartments 5 and 6. A door 32 closes the ice chamber and is hingedly mounted on the side of the refrigerator casing as shown whereby, upon opening the same, access may be had to the chamber for installing ice therein.

Arranged in the ice chamber is a suitable coil 33 which is provided with a plurality of spray nozzles 34 which are arranged to extend partially into the upper parts of the compartments 5 and 6. A pipe 35 extends from the coil 33 and is connected to a rotary pump 36 which is disposed in the lower portion of the refrigerator casing. A pipe 37 extends from the rotary pump and terminates at a point adjacent the bottom of the tank 26. A shaft 38 of the rotary pump 36 is operated by a conventional type of electric motor 39 which may be supported on a suitable shelf 40 exterior of one of the sides of the refrigerator casing.

Upon operating the pump through the medium of the motor, the water in the tank 26 is lifted and passed through the pipe 35 and circulated through the coil 33, the water being allowed to spray into the several compartments 5 and 6 and upon the bottled goods. The water drips back into the pan 24 and is returned to the tank 26 by means of the pipe 25. As long as the pump operates, the water is kept in circulation and maintained cold for the purpose of keeping the milk bottled goods cold in the tank.

Each pair of compartments 5 and 6 contain goods of like character—that is, of the same flavor and the dispensing tube associated with each pair of compartments dispenses first from one and then the other. By this arrangement the goods are arranged in two tiers one behind the other from which the units are alternately selected by the operation of the dispensing tube. The height of the dispensing compartment is therefore reduced one-half of what would be necessary were the goods arranged in single stacks. Obviously goods of different flavors may be stored in the several different pairs of compartments 5 and 6.

The invention having been set forth, what is claimed is:

1. A refrigerator for bottled goods having a plurality of bottle-receiving compartments arranged in pairs of which each consists of a forward and rear compartment, a rotatably mounted dispensing tube spanning each forward and rear compartment and cut away to provide bottle-receiving seats, the compartments being arranged to dispose the bottles in the two laterally in the same vertical plane and the seats in the dispenser being on diametrically opposite sides and axially displaced to dispose them one under each compartment, and means for rotating the dispensing tube.

2. A refrigerator for bottled goods having a plurality of bottle-receiving compartments arranged in pairs of which each consists of a forward and rear compartment, a dispensing element common to the two compartments of each pair, a door permitting access to the forward compartments, and a partition member separating each forward and rear compartment and pivotally mounted at its lower extremity to be swingable forward at its upper end to permit access to the rear compartment through the forward compartment.

3. A refrigerator for bottled goods having a plurality of bottle-receiving compartments, a slide common to said compartments at their lower ends and communicating with a discharge outlet, a plurality of swinging closures for closing said outlet, and means for dispensing bottles from the compartments and discharging them on said slide, said closures covering openings through which the necks of bottles may project and said openings being arranged to correspond with said compartments.

4. A refrigerator for bottled goods having

a bottle-receiving compartment, a slide arranged below said compartment and communicating with a discharge opening, a dispensing device at the lower end of the compartment, and a pivotally mounted chute disposed below the dispensing device and provided with means for holding it normally horizontal, said chute receiving a bottle from the dispensing device and being bottle-actuated to deposit the bottle on said slide.

5. A refrigerator for bottled goods having a bottle-receiving compartment, a slide arranged below said compartment and communicating with a discharge opening, a dispensing device at the lower end of the compartment, a discharge chute disposed below the dispensing device and having a pivotal mounting to one end of its longitudinal center, abutments limiting the discharge chute to horizontal position, and a weight carried by the discharge chute and normally holding the latter against the abutments, the dispensing device disposing a bottle on the discharge chute and the latter being bottle-actuated to discharge the bottle on said slide.

In testimony whereof he affixes his signature.

JAMES N. ECONOMOS.