

No. 649,157.

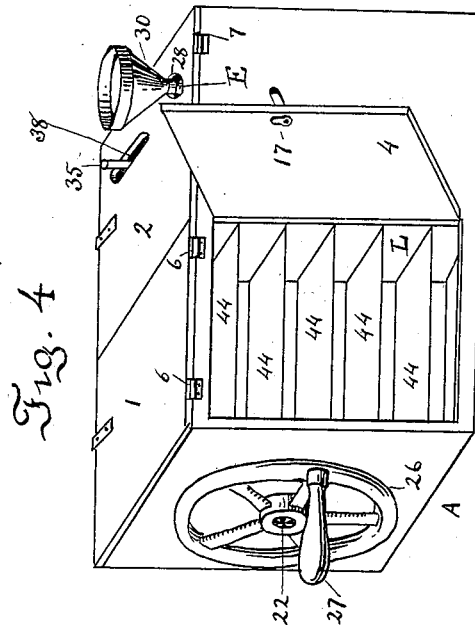
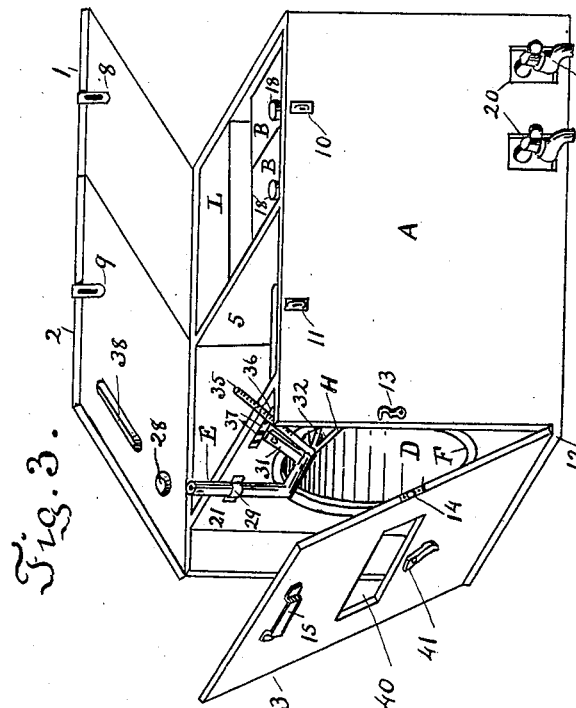
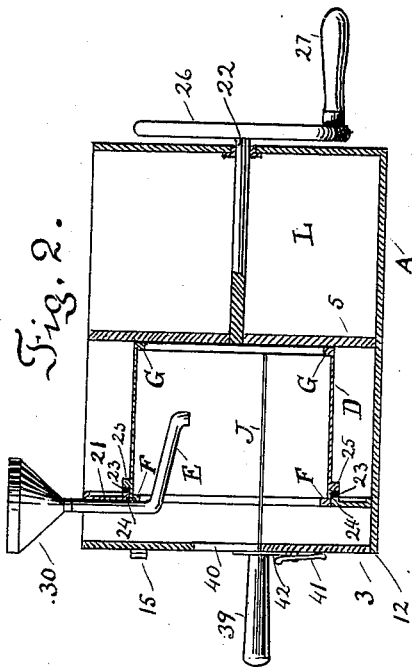
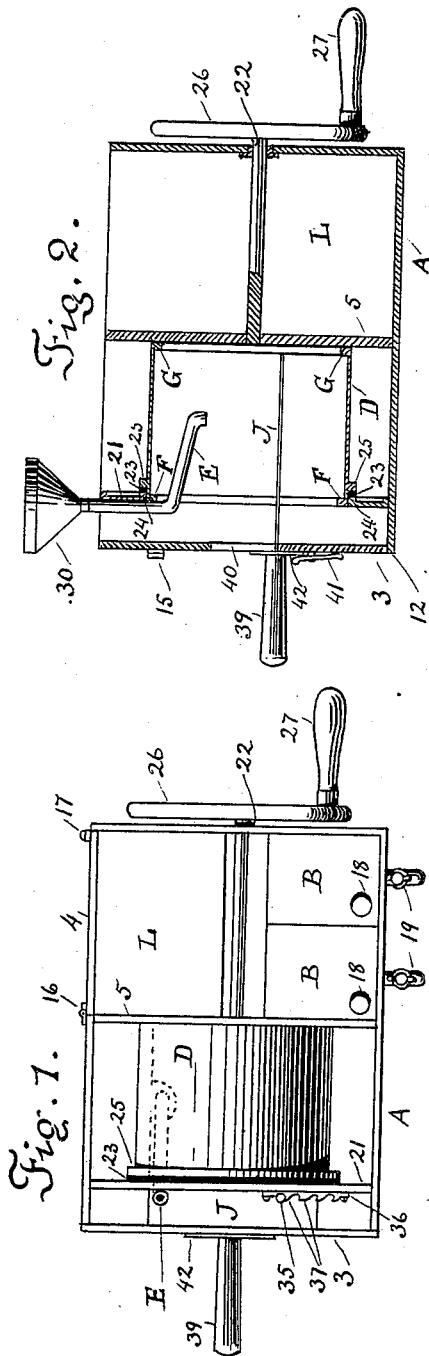
P. CACCIATORI.
FREEZER.

Patented May 8, 1900.

(Application filed Apr. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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2 Sheets—Sheet 2.

Fig. 6.

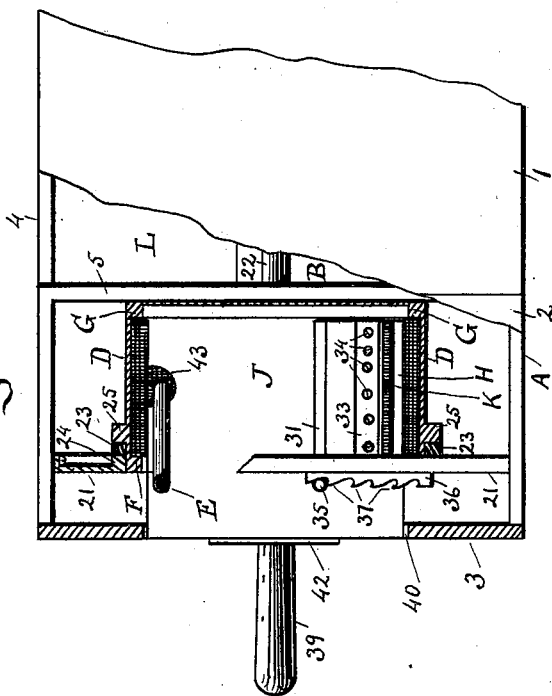


Fig. 8.

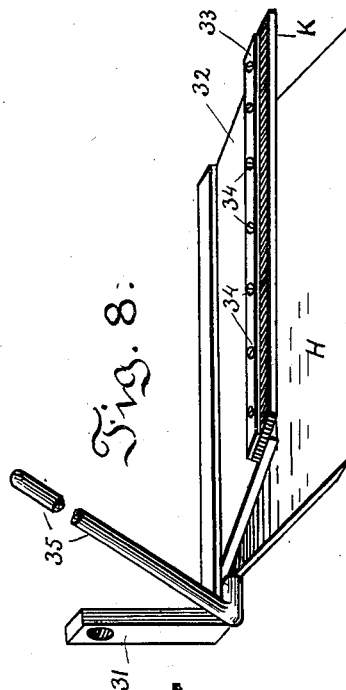


Fig. 5.

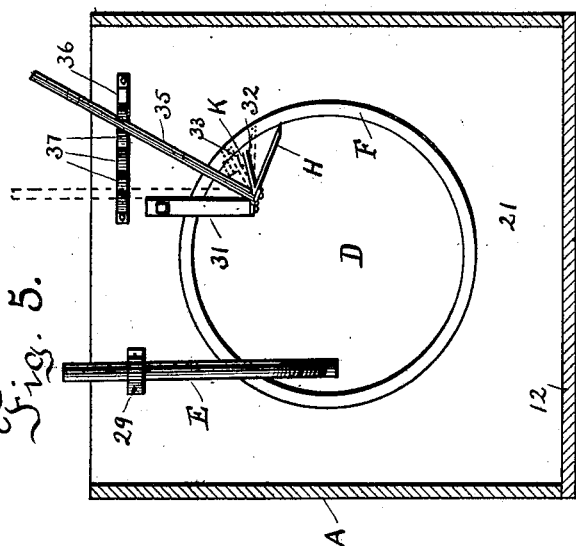
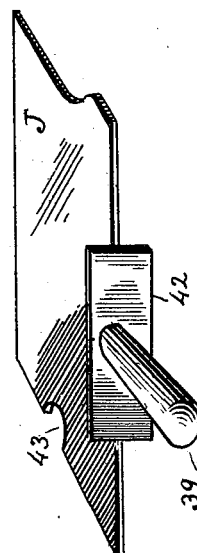


Fig. 7.



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UNITED STATES PATENT OFFICE.

PETER CACCIATORI, OF NEW YORK, N. Y.

FREEZER.

SPECIFICATION forming part of Letters Patent No. 649,157, dated May 8, 1900.

Application filed April 29, 1899. Serial No. 715,045. (No model.)

To all whom it may concern:

Be it known that I, PETER CACCIATORI, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Freezers, of which the following is a specification.

This invention relates to improvements in machines or apparatus for making ice-cream and water-ices.

The object of the invention is to provide a simpler, handier, and more useful freezing machine or apparatus of this class than has heretofore been devised or known.

Reference is had to the drawings annexed to this specification for a detailed description of my said improvement.

In the drawings, Figure 1 is a top view of the entire machine, with the covers removed to show the inside parts. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is a perspective view looking to the front of the machine, which is partly opened. Fig. 4 is also a perspective looking oppositely to the preceding figure into the rear part of the machine. Fig. 5 is a front elevation with the face-board removed. Fig. 6 is a top view, partly broken and in section. Fig. 7 is a perspective view of a "palette" or plate with handle, on which the ices made in the freezer are collected. Fig. 8 is a detailed view, also in perspective, of a scraper used in connection with the said palette or plate.

The same reference-sign is employed to designate the same part wherever it occurs in the several views.

In carrying out my invention I make use of a wooden box A, in which the different parts constituting the freezer are all contained. This box has lids 1 and 2 hinged to it, a removable front board 3, and a hinged back door 4. It is divided into two compartments by a partition 5, that is run across it and which may be made of either wood or metal, as deemed best for the purpose in view. In the right compartment, as seen from Figs. 1, 2, 3, and 6, may be stored the creams, sorbet compounds, and other liquid or semiliquid preparations that are to be frozen, as also some of the confections that have been frozen, as hereinafter explained. In the left compartment, as viewed from the same figures, will be found the mechanical apparatus em-

ployed to freeze all these preparations with and to collect the same after they are congealed. The covers or lids 1 and 2 are fastened to one side of the box by the hinges 6 and 7 (shown in Fig. 4) and when closed are secured firmly in position by means of the hasps 8 and 9 passing over the staples 10 and 11, which are placed on the opposite side of the box, as seen in Fig. 3, and are adapted each to receive the bow of a padlock in a well-known manner. The front board 3 rests on a ledge or projecting portion 12 of the bottom of the box and is held on each side by a small hook 13, attached to the body of the box and adapted to engage a catch 14, secured to the edge of said board. A handle 15 is provided at the upper end of this board, so that it may be easily pulled out when unfastened to look into the interior of the freezing device, as indicated in Fig. 3. The door 4 is hung on hinges 16 and closed with a latch 17. (See Figs. 2 and 4.)

The substances or mixtures to be frozen may be conveniently placed in cans B, such as are represented in the rear side of the right compartment of box A in Figs. 1 and 3. One of these cans will hold cream, for instance, and the other will contain sugar and water, out of which can be had, with the addition of the usual flavoring extracts and fruit-juices, any sort of ice-cream or water-ice that it may be desired to make in the machine. Each can, as shown, has its opening, with stopper 18 at the top, through which it is filled, and its faucet 19 at the bottom, through which its contents are drawn. An opening 20 is provided in the side of the box A for each one of the faucets 19 to project through, so that the same may be reached to draw the cream and sweetened water without opening the box and taking the cans out of it. Arranged in this way the cans B will be kept at a normally-low temperature, owing to their proximity to the freezing part of the apparatus, hereinafter described, and their contents will quickly become so cold as to cause them to readily congeal when poured into said part of the apparatus. The temperature of the cans and contents could still further be lowered by packing broken ice behind or around and upon them; but this may be dispensed with, since the cross-partition 5 and other walls of

the box A will transmit to them much of the cold produced in the compartment where the freezing is done, and thus some saving of ice may be effected by not using any in the other compartment where the preparations above named are stored. The stored preparations, it will be observed, are always at hand, as well as kept quite cold, preparatory to being frozen.

As already stated, the device or part of the apparatus employed to accomplish the freezing is located in the left compartment of the box A. It consists, essentially, of a cylinder D, mounted in such a manner that it can be revolved in a mixture of ice and salt or other refrigerants with which the said left compartment is filled. This cylinder is made of heavy sheet-iron, tinned or galvanized, and is closed at one end—the rear end. Its open end—the front one—is closely fitted in a circular opening made in a metal plate 21, placed transversely of the box A in front, where said open end of the cylinder has a bearing. Its closed end is supported by a shaft 22, fastened to the center of it and journaled in suitable bearings in partition 5 and the rear wall of box A. The ice and salt or other freezing mixtures surrounding cylinder D, it will be understood, are to be kept within the inclosure formed by partition 5 and plate 21 and those parts of the outer walls of box A running between the same. A water-tight joint is made at the point where cylinder D enters the opening in plate 21 by means of a rubber washer or other suitable packing 23, which is caught between a flange 24, projecting inwardly from said plate around its opening, and a collar 25, formed upon the outer surface of said cylinder, as shown in Figs. 1, 2, and 6. Shaft 22 carries at its outer end a fly-wheel 26, having a handle 27, by means of which the said shaft can be rotated to revolve the freezing-cylinder D. This is about the simplest form of actuating mechanism that can be provided when it is intended to turn the cylinder by hand, excepting that the fly-wheel might be cast off and a plain crank used in its place if a cheaper construction were desired. At the same time it will be understood that instead of being worked by hand my improved freezer may well be operated also by a motor of any known type, whether the same be run with electricity, steam, gas, water, or any other motive force. The use of any sort of power thus is contemplated by my invention, and so is the employment of gearing, if the same be found useful or convenient, though for the sake of simplicity and cheapness no gearing is used with the construction illustrated by the drawings filed herewith.

The preparations drawn from either of the cans B, flavored according to the taste of those who order the same, are poured into the cylinder D to be frozen through a small tube E, that projects up through a hole 28 in lid 2 and is held to the face of plate 21 by a strap 29 within the space comprised between said plate and face-board 3. As shown, the upper half of said tube E is held vertically on plate 21, and its lower half is bent so as to make it enter the freezing-cylinder through the open end of the latter near its upper edge to the left. Said lower half of the tube projects inward to a point about midway of the cylinder's length in the upper left part, inclining downward, as represented in Figs. 2, 3, 5, and 6. A loosely-fitting funnel 30 is placed on the upper end of tube E, and the passage through the spout of it and the tube is made narrow, so that the pouring of the preparations into the cylinder is done slowly and in a small stream. Owing to this and the fact that they have been rendered quite cold by being previously stored in the machine the preparations freeze instantly upon coming in contact with the inner surface of cylinder D while the outer surface of the same is being revolved in the mixture of ice and salt, above mentioned. This is why I have called my invention an "instantaneous freezer," and it is now known under that name. I am thus enabled to make various ice-creams, custards, and iced drinks—such as punches, sorbets, and other water-ices, &c.—to order, the same being frozen as needed, but not until called for. It is not necessary with my machine to make these things in advance and store them away for future consumption, thereby running the risk of their becoming spoiled if they are not consumed just at the right time. With my machine they can all be made at the very time they are required and in no greater quantity than may be disposed of, thereby insuring economy and satisfaction. With some of the preparations one may throw in a few very small bits of fruit, which will impart to them a more or less delicate taste, that is always liked. Ices can thus be had with the flavor of any kind of fresh fruit.

To prevent the preparations that are poured into the freezing-cylinder from spreading from front to rear therein and running either too far back in the bottom or out at the forward edge, I provide said cylinder with two inside rings or internal circular flanges F G, one at each end. These rings may be formed integral with the cylinder and of the same metal. They are important and valuable elements of my invention, for they not only keep the preparations within proper bounds on the inner surface of the cylinder, so that the same can be scraped off easily and no part thereof will be lost, but they do away with two very objectionable defects that are inherent to freezing-machines not provided with such rings. In the first place the ring F at the outer edge of the cylinder prevents the salt water that might possibly leak through the joint between plate 21 and said cylinder from ever getting into the latter through its open end, and consequently spoiling the preparations that are being congealed therein. In the second place the ring G at the back of the cylinder D keeps the preparations away

from the bottom or rear end of said cylinder; where they could not conveniently be reached by an ordinary scraper after being congealed, and so is avoided the danger of any of the preparation sticking to the cylinder's bottom, where it would be missed by the scraper at first, but afterward would get mixed with some other preparation of different kind and taste. Having been frozen, the preparations are taken up from the inner surface of cylinder D by means of a scraper H and collected upon a palette or flat plate J, which plate and scraper are respectively shown in detail in Figs. 7 and 8. The scraper H just referred to consists of a broad knife-blade which is pivoted to a bracket 31, bolted to the face of plate 21 and extending into the upper part of cylinder D on the right-hand side. The cutting edge of said knife is normally down away from the cylinder's inner surface, as shown by the full lines in Fig. 5, and in order to be operative must be held up in the manner indicated by the dotted lines in the same figure. It is made of the same length as that part of the cylinder which is comprised between the two rings F and G or large enough to gather at one stroke all of the frozen matter to be found between said two rings. The frozen matter is thus gathered by turning the cylinder against and oppositely to the beveled side of the knife's edge, as will be readily understood, and upon being detached from the cylinder's inner surface falls on plate J, which is held below to receive it.

I use a wiper K in connection with scraper H in order to insure the more perfect cleaning of the cylinder's inner surface when the frozen preparations are taken up. This wiper may consist of a strip of rubber or other suitable material and is attached either directly or indirectly to the back or reverse side of the scraper-blade, which it is intended to follow. In the illustration given, Figs. 6 and 8, the rubber wiper K is set between two plates 32 and 33, to which it is adjustably secured by small screws 34, and it is connected with the pivoted part of scraper H by the larger plate 32. It is made to project out sufficiently to bear well on the inner surface of the cylinder D, so as to wipe it thoroughly and remove from it every particle of frozen matter that may be left by the scraper. Thus it will be seen that the scraper and wiper act jointly, both combining to take up the frozen matter in such a way as to leave the interior of the freezing-cylinder clean always and ready to receive other preparations that are to be frozen in it. This makes it possible for my machine to turn out ices of different flavors in quick succession, since it is not necessary to stop to clean the cylinder, and therefore people ordering the ices need not be kept waiting.

Scraper H and wiper K, connected or attached thereto, may be arranged to bear and press on the interior surface of cylinder D at any suitable angle. Any suitable means also

may be employed to force them into action—for instance, a rod 35, fastened to the heel of the scraper-blade. This rod may be held by hand, if desired, when applying the scraper and wiper to the inner surface of the cylinder and removing the frozen matter therefrom; but I prefer to use in connection with it for this purpose a rack 36, consisting of an iron bar screwed on the face of plate 21 near its upper end and having inwardly-pointed teeth 37, adapted each to engage the said rod and keep it in the position required. With such a rack the proper tension can be maintained on rod 35 at all times, and the pressure of the scraper and wiper against the cylinder's inner surface can be regulated conveniently and kept uniform while the frozen matter is taken up and the cylinder cleaned out. The rod, as may be seen by looking at Figs. 3 and 4, is adapted to pass up through a slot 38 in lid 2 when the latter is shut down.

The palette J, hereinabove referred to as receiving the frozen preparations as they are detached from the cylinder's inner surface by the scraper, consists of an open flat-faced plate provided with a handle 39. It is shown in detail at Fig. 7, and the position it occupies when used in the machine is indicated at Figs. 1, 2, and 6. It is cut of the proper shape and size to enter cylinder D and cover about all the lower portion of it within the rings F and G. These rings, it will be observed, keep the edges of plate J far enough from the cylinder's inside surface to allow the frozen matter adhering to the same to pass them without touching when the cylinder is rotated. At the same time they permit the plate to lie close enough to receive all the frozen matter when it is removed by the scraper and falls from above. Plate J is introduced into the machine through a quadrangular opening 40, cut in the center of the front board 3, where it is held by a catch 41, pivoted to said board and arranged to swing over a small flange 42, provided on said plate near its handle 39. (See Figs. 2 and 3.) There is also provided in the edge of plate J, on the left-hand side, a notch 43, which comes directly underneath the discharge end of the feed-tube E, as better shown in Fig. 6. This is to allow the preparations that are poured down said tube to fall directly into the lower part of the cylinder though plate J be there, as in my invention it is not necessary nor is it intended that the plate which is to collect the frozen matter be removed from the cylinder before or every time the preparations are poured in. The reason for it is that the construction and mode of operation of my machine enables me to freeze several preparations one after the other without interruption, whether or not they are of different flavors, and to take them out and serve them all at the same time. To illustrate, a person comes and asks me for a coffee-flavored ice. I pour the required preparation into the machine, turn the crank of shaft 22, and inside

of two minutes have the preparation frozen, which I receive on the palette upon applying the scraper and wiper to the inner surface of the freezing-cylinder. At the same
 5 time somebody else has ordered a lemon-flavored ice. I then push aside on the palette the ice first ordered and without taking the palette out of the machine pour in the preparation for the second ice ordered, and by going
 10 through the same operation as before I have it ready to serve at the same time as the other. If a third one has called for still another ice—say chocolate-flavored—I again push aside the second ice on the palette and
 15 proceed to make the third ice wanted, so that I can serve all three ices at one time and in equally-good condition, and so on with ices of all kinds. A party of friends or relatives or people giving simultaneous orders can thus
 20 be accommodated and served simultaneously without having one wait unduly for another, as would be the case if the palette had to be removed and replaced for each order or if the machine were not capable of making ices of
 25 different kinds in rapid succession.

Besides the ordinary ice-creams and water-ices my improved machine is also adapted to make those hard-frozen squares or bricks that are known in Italy and elsewhere under the
 30 name of "*pezzi duri*," otherwise called "*napolitani*." These Neapolitan bricks or squares are made with my machine in the same manner as the other ices, only, as they must be more firmly frozen, I provide a special place
 35 in the machine for them where they can be stored and given time to set after being molded or cut to the proper shape. This place is in the back of the machine at the rear of cylinder D and cans B, beyond the middle partition 5, as seen in Figs. 1, 2, 3, and 6. There
 40 the squares or bricks can be stored in a small closet or box L, having a suitable number of shelves 44. (Shown in Fig. 4.) The door of this little closet is the back door 4, hereinbefore mentioned. The frozen creams of which
 45 said squares or bricks are made can be collected on the palette, if desired, and then cut up in the manner required previously to being stored away, or else a mold or pan having
 50 the desired number of divisions may be held up within the freezing-cylinder and filled with several kinds of the variously-flavored ice-creams, which are afterward to be put away in the closet to harden. The closet, it
 55 will be understood, can be kept quite cold by covering, surrounding, or partly filling it with ice. It is not necessary, however, to have ice there always, as the temperature of the freezing-cylinder is usually low enough to affect
 60 the other parts of the machine and therefore keep the closet cold.

Having described my new improvement, what I claim, and desire to secure by Letters Patent of the United States, is—

65 1. An ice-cream freezer comprising an inclosing casing, a partition dividing said casing into a cooling-compartment and a freez-

ing-compartment, a freezing-cylinder in said freezing-compartment in which latter the refrigerant is adapted to be packed outside of
 70 and surrounding said cylinder whereby the refrigerant used for the freezing operation also retains a very low temperature in the cooling-compartment, and a receptacle in the cooling-compartment adapted to hold and
 75 preliminarily chill the matter to be frozen, said receptacle having means for discharging its contents outside of the casing without opening the cooling-compartment, substantially as described. 80

2. An ice-cream freezer comprising an inclosing casing, a partition dividing said casing into a cooling-compartment and a freezing-compartment, a freezing-cylinder in said
 85 freezing-compartment in which latter the refrigerant is adapted to be packed outside of and surrounding said cylinder whereby the refrigerant used for the freezing operation also retains a very low temperature in the cooling-compartment, a receptacle in the cooling-compartment adapted to hold and preliminarily
 90 chill the matter to be frozen, said receptacle having means for discharging its contents outside of the casing without opening the cooling-compartment, a storing-closet in said cooling-compartment for storing the
 95 frozen matter, and a door in the inclosing casing affording access to the storing-closet, substantially as described.

3. An ice-cream freezer, comprising a casing or box, a partition 21 in said box a short
 100 distance from one end and provided with a circular opening and constituting one wall of the refrigerant-compartment, an internal freezing-cylinder having an open end rotatably mounted in said opening in the partition
 105 21, a scraper mounted on said partition 21 and extending into the cylinder, and a device for delivering the matter to be frozen into the cylinder also mounted on said partition, all
 110 of said parts being inclosed within the casing or box, substantially as described.

4. A freezer comprising a cylinder having inside rings, a plate adapted to be placed in
 115 said cylinder within said rings, a feed-tube discharging the matter to be frozen into the cylinder through a notch in said plate, and means to scrape the frozen matter off the cylinder's inner surface, substantially as specified. 120

5. An ice-cream freezer, comprising a box or casing having a movable end board 3, a
 125 partition in said box adjacent said board 3 and provided with a circular opening, a freezing-cylinder in said box having an open end journaled in said opening, means for delivering matter to be frozen into said cylinder, said end board 3 of the box affording a cover for said open cylinder end, substantially as described. 130

6. An ice-cream freezer, comprising a box or casing having a movable end board 3, a partition in said box adjacent said board 3 and provided with a circular opening, a freez-

ing-cylinder in said box having an open end journaled in said opening, means for delivering matter to be frozen into said cylinder, said end board 3 of the box affording a cover 5 for said open cylinder end, and said board 3 having an opening through which a palette is adapted to be introduced into the cylinder for removing the frozen material, substantially as described.

- 10 7. A freezer comprising a box having a hinged top, a hinged end, and a door in one side, a partition dividing said box into a compartment for the refrigerant and a cooling-compartment, said compartment divided into 15 a closet opposite the door in the side of the box for the frozen matter and a compartment

within which the matter to be frozen is preliminarily cooled, a freezing-cylinder located in said compartment for the refrigerant opposite said hinged end, means for delivering 20 the matter to be frozen into said cylinder, a scraper, and a plate adapted to be removably inserted in the cylinder through an opening in said hinged end of the box, substantially as described. 25

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

PETER CACCIATORI. [L. S.]

Witnesses:

DIONISIO QUINTO,
G. MARENGO.