

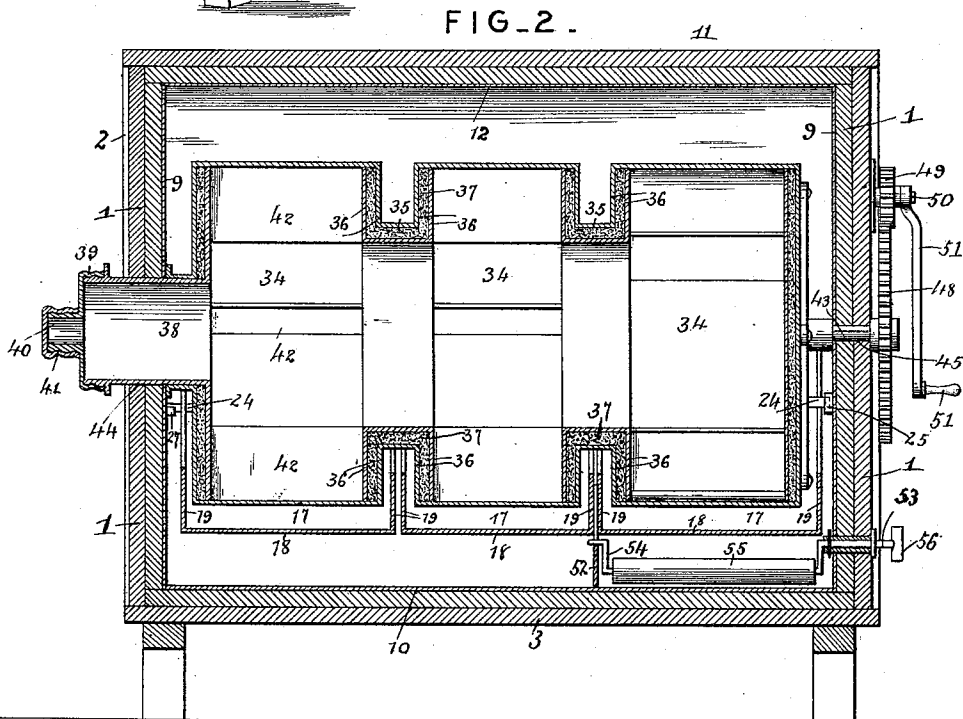
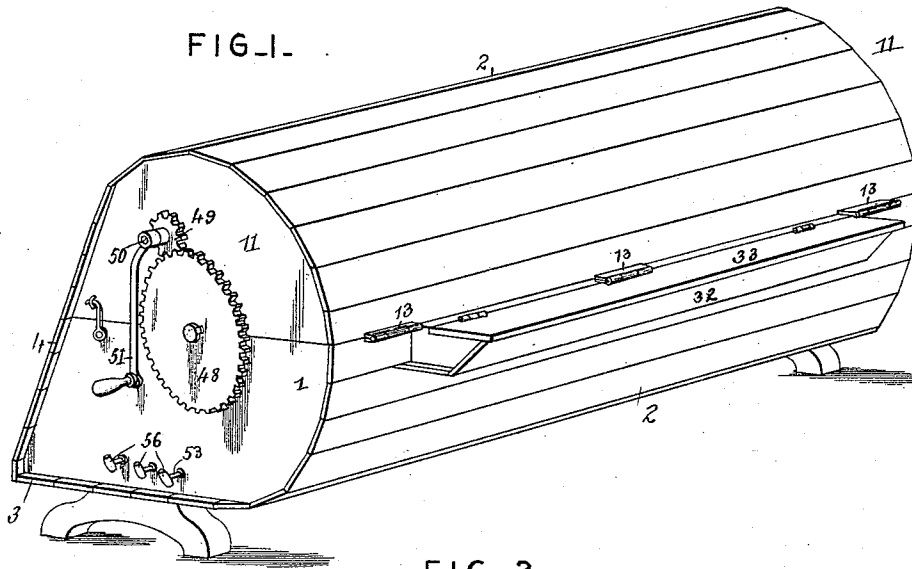
(No Model.)

2 Sheets—Sheet 1.

H. SHAPEL.
ICE CREAM FREEZER.

No. 459,553.

Patented Sept. 15, 1891.



Witnesses:

Inventor

Jas. K. McLathran

Hooker Shapel

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By His Attorneys,

C. A. Snow & Co.

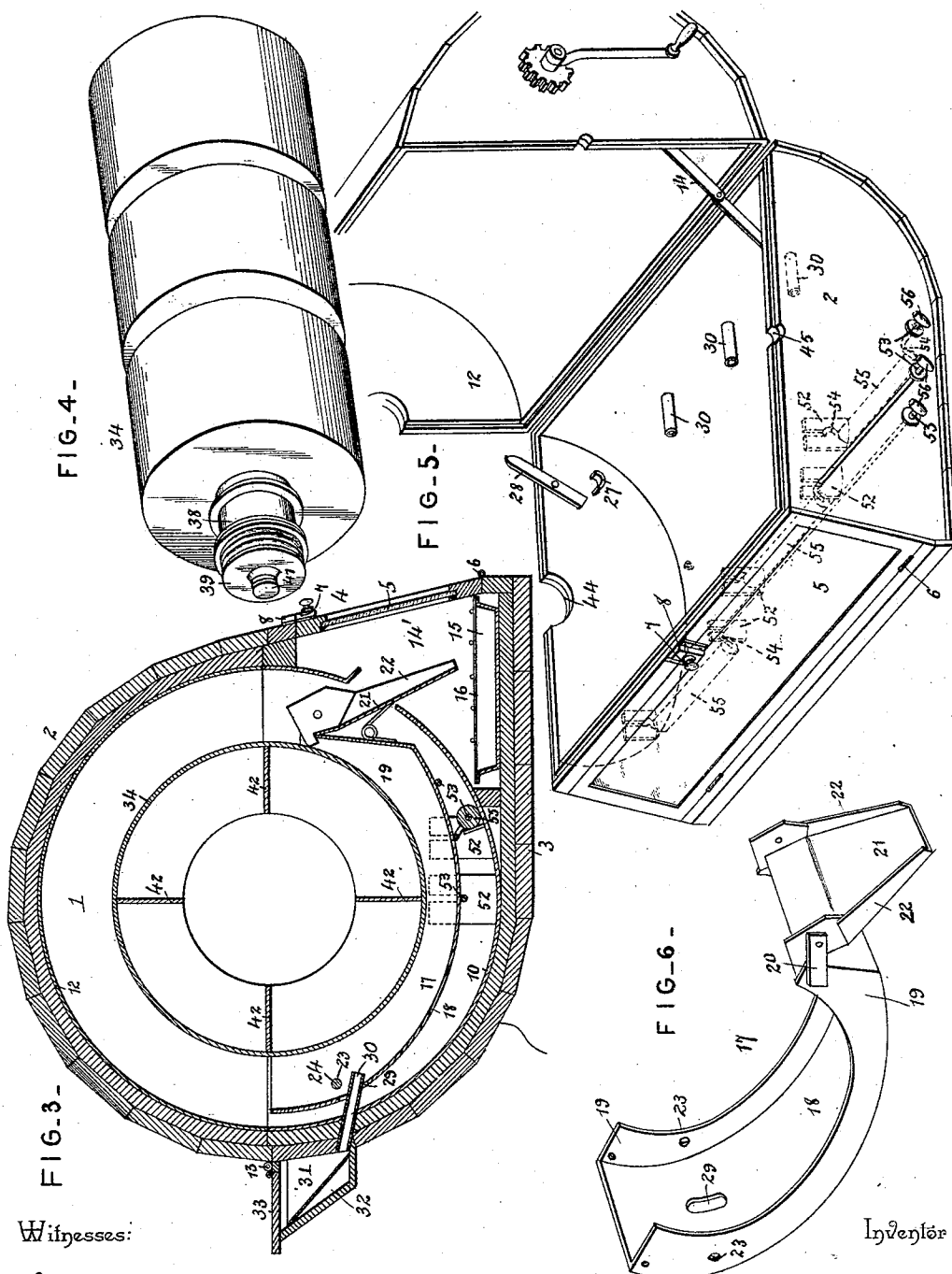
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2 Sheets—Sheet 2.

H. SHAPEL.
ICE CREAM FREEZER.

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Witnesses:

Jas. H. McLaughlin
W. S. Duval.

By his Attorneys,

Hooker Shapel
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UNITED STATES PATENT OFFICE.

HOOKER SHAPEL, OF IOLA, KANSAS, ASSIGNOR OF ONE-THIRD TO JAMES OVERMYER AND GEORGE W. MOORE, OF SAME PLACE.

ICE-CREAM FREEZER.

SPECIFICATION forming part of Letters Patent No. 459,553, dated September 15, 1891.

Application filed March 12, 1891. Serial No. 384,817. (No model.)

To all whom it may concern:

Be it known that I, HOOKER SHAPEL, a citizen of the United States, residing at Iola, in the county of Allen and State of Kansas, have invented a new and useful Ice-Cream Freezer, of which the following is a specification.

This invention relates to improvements in that class of ice-cream freezers in which a refrigerating revoluble cylinder and scraping delivery-blades are employed; and the objects in view are to provide a machine of cheap and simple construction adapted for easy operation and for the manufacture and delivery of one or a series of different flavors of cream, as will be desired.

With the above main objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of an ice-cream freezer constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a transverse section. Fig. 4 is a detail in perspective of the refrigerating-cylinder. Fig. 5 is a perspective of the casing, the same being opened. Fig. 6 is a detail in perspective of one of the cream-receiving trays and its delivery scraping-blades.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ a casing or box consisting of opposite side pieces 1, the front edges of which are inclined and the rear edges of which are curved, a rear wall 2, curved to conform to the edges of the side pieces, a bottom 3, and a front wall 4, the latter having a sight-panel 5, of glass, hinged at its lower edge to the front edge of the bottom, as at 6, an ordinary spring-bolt 7 being secured to the upper edge of the front wall and adapted to engage with the keeper 8, whereby said wall may be maintained in a locked position. The opposite side walls of the casing are covered with a sheet-metal lining 9, and the lower edges of the same are curved or semicircular and connected by a curved bottom 10, the pieces 9 and 10 forming a curved tank, as shown.

11 designates the cover of the casing, the same also being lined with sheet metal, as at 12,

hinged at its rear edge to the rear edge of the casing, as at 13, and limited in its rearward movement by a strap 14. By the inclination given the front edges of the side walls 1 of the casing there is formed in front of the sheet-metal tank therein a space or compartment 14', preferably provided with a removable tray 15, covered by a grating 16, adapted to receive and support saucers or other vessels placed there for the purpose of receiving the ice-cream as the same is manufactured, in a manner hereinafter specified.

17 designates a cream-receiving tray, of which there is preferably a series, each consisting of a curved bottom 18 and opposite side walls 19, the latter having their upper edges cut out or recessed, as shown. The front ends of the side walls extend slightly beyond the corresponding ends of the bottoms of the trays, and to said side walls by means of pairs of straps 20 there are connected a series of combined scrapers and delivery-blades. Each of these combined scrapers and delivery-blades consists of an inclined bottom wall 21, the upper edge of which is straight to form a scraping-edge, and opposite side walls 22, the latter converging toward their lower ends, so as to properly deliver the frozen cream as the same is manufactured. These series of cream-receptacles have their side walls near their rear ends perforated, as at 23, and through the entire series passes a rod 24, one end of which is inserted in a socket or bearing 25 and the other end of which rests in a half-bearing 27, said bearings being located upon the opposite end walls of the casing and the half-bearing covered by a turn-button 28. When the rod is in position through the series of cream-receiving pans and the button turned to lock the bearing, said pans remain undisturbed by the operations of the machine, as hereinafter explained, and can only be removed by the partial rotation of the turn-button, the subsequent lifting of that end of the rod that rests within the half-bearing, and finally the removal of the rod and series of pans. Each pan is also provided with an opening 29 in its rear end, and through the same pass tubes 30, which also pass through the rear wall of the casing and terminate in funnels 31, all of which are located in a re-

ceiving compartment or case 32 and covered by a lid 33, hinged thereto.

34 designates a series of cylinders, formed of sheet metal and connected by short cylindrical collars 35, of a lesser diameter than are the cylinders, the heads of the cylinders being open, so as to afford communication throughout the series. The head of each cylinder is composed of two circular layers of sheet metal 36, between which are interposed suitable non-conducting packings 37. The outer head of one of the outer cylinders is provided with a hollow-bearing trunnion 38, upon which is screwed a cap 39, and the latter is provided with a small perforation 40, upon which is screwed a smaller cap 41. Through the medium of the larger cap the refrigerating agent may be inserted, and the smaller cap may be removed for the purpose of pouring the melted ice therefrom.

Each of the cylinders is provided with a series of shelves 42, located therein and extending transversely across the inner peripheries or surfaces of the cylinders from head to head. These shelves are for the purpose of engaging and carrying the refrigerative agent during a portion of the rotations of the cylinders. Each cylinder is of a width to fit between the side walls of a cream-receiving tray; the collars connecting the cylinders serving to span the spaces between the trays. The outer end of that outer cylinder opposite the one heretofore described as having the threaded caps and hollow trunnion is provided with a stub axle or shaft 43, said hollow trunnion and shaft being designed to locate in bearings 44 and 45, respectively, the halves of which are formed in the meeting edges of the casing and the cover. The stub-shaft carries at its outer end a gear 48, which is engaged and driven by a small pinion 49, located upon a stub-shaft 50, extending from the end wall of the cover and operated by a crank-handle 51. A series of—in this instance three—bearing-standards 52 is located upon the curved bottom of the tank of the casing, and as many shafts 53 are journaled in the standards and in one of the end walls of the casing, each of said shafts being provided between its bearings with a cranked portion 54, upon which is mounted a loose roller 55, and at its outer end with a handle 56, by means of which said shafts may be partially rotated, and thus the cream-pans raised or lowered so as to bring any one or all of the scraping-blades thereof into contact with the periphery of the refrigerating-cylinders.

This being the construction, the operation is as follows: By removing the screw-cap from the hollow trunnion of the cylinder crushed ice or other refrigerative agent is introduced, and with the same each cylinder is either wholly or partially filled, after which the cap is replaced and the cylinder mounted in its bearings. The lid is now closed and receptacles placed in the compartment at the front

end of the casing for the reception of the frozen cream, which latter is now introduced in liquid form by being poured into the funnels at the rear side of the casing and passed from them into the cream-receiving pans. It is designed to employ a series of cylinders, as shown in the present instance, and the pans of the same receive creams of various flavors.

If it is desired to freeze a saucer of each of the three flavors, each of the handles of the cranked shafts under the pans is turned so as to throw the cranked portions up, and, as the front ends of the pans rest thereon said front ends are also carried up, the pans swinging upon the pivotal rod passed through their rear ends. Such movement upon the part of the cranked shafts brings the upper scraping-edges of the several scrapers into contact with the peripheries of their respective cylinders. It now simply remains to rotate the crank of the stub-shaft, and through the medium of the pinion of the latter the large gear of the cylinder, together with the cylinder, is rotated from rear to front, and the cream adhering to the periphery of the cylinders as they are immersed therein is congealed or frozen by contact with the surface of the cylinder and is scraped by the combined scrapers and delivery-blades from the outer peripheries of the cylinders and subsequently delivered into saucers or other ice-cream-receiving vessels. In this manner as much cream as may be desired to meet the demands may be instantly manufactured, and that, too, of several flavors when so desired. By merely manipulating one of the crank-shafts any one of the various flavors may be manufactured, the scrapers of the remaining flavors remaining out of contact with the cylinders.

Having described my invention, what I claim is—

1. In an ice-cream freezer of the class described, the combination, with a casing, of a series of cream-receptacles, a series of hollow freezing-cylinders, intermediate hollow reduced collars connecting the same and affording communication therebetween, a series of scrapers, and means for rotating the cylinders, substantially as specified.

2. In an ice-cream freezer of the class described, the combination, with a casing, of a series of cream-receiving pans, a series of revoluble freezing-cylinders, means for rotating the cylinders, a series of scraper-blades, one for each cylinder, and means for throwing any one or all of the blades into or out of position with relation to the cylinders, substantially as specified.

3. In an ice-cream freezer of the class described, the combination, with the casing, a series of cream-receiving pans pivoted in the casing, and scrapers mounted upon each pan, of a series of revoluble freezing-cylinders mounted above the pans, means for operating said cylinders, and means for raising and

lowering any one or all of the pans for the purpose of throwing the scraper thereof into or out of operative position, substantially as specified.

5 4. In an ice-cream freezer of the class described, the combination, with the casing, a series of independent separated cream-pans mounted in the casing, pipes passed through the casing into the pans and terminating outside the casing in funnels, and a box or compartment for the reception of the latter, a scraper-blade located in front of each pan, of a series of revoluble cylinders located above the pans and means for operating the same, 15 substantially as specified.

5. In an ice-cream freezer of the class described, the combination, with the casing having a socket-bearing at one end and half-bearing at the opposite end and a turn-button above the same, of a series of cream-receiving pans comprising opposite side walls, a rod passed loosely through the side walls mounted at its ends in said bearings and locked by the button in the half-bearing, 25 means for raising and lowering the front ends of the pan, scrapers located at said ends, cylinders located above the pans, and means for operating the same, substantially as specified.

6. In an ice-cream freezer of the class described, the combination, with the casing having a series of independent cream-receiving pans, of a revoluble series of refrigerant-cylinders, the outer cylinders of the series terminating in bearing-trunnions, one of which 35 is hollow and closed by a cap, a series of col-

lars of reduced diameters connecting the adjacent heads of the series of cylinders, which heads have openings to form communicating means between the cylinders, and means for revolving the cylinders, substantially as specified. 40

7. In an ice-cream freezer of the class described, the combination, with the casing having opposite bearings and having the front edges of its side walls inclined and a glass door 45 connecting the same, of a series of cream-pans supported inside the casing, scrapers located in front of the same and terminating opposite the glass door, and a revoluble refrigerating-cylinder mounted in the bearings 50 of the casing, substantially as specified.

8. In an ice-cream freezer of the class described, the combination, with the casing, the series of pivoted cream pans or receptacles, and the revoluble refrigerating-cylinders, of 55 the series of bearing-standards located in the casing under the front ends of the cream-receptacles, and a series of rock-shafts having cranked portions journaled in the side wall of the casing and in the standards and provided at their ends with handles and at their cranked portions under the receptacles with rollers, substantially as specified. 60

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 65 presence of two witnesses.

HOOKEr SHAPEL.

Witnesses:

E. A. VAN VALKENBURG,
J. P. DUNCAN.