

J. W. KENNEDY.
 APPARATUS FOR STORING AND DISPENSING ICE CREAM.
 APPLICATION FILED DEC. 17, 1917.

1,298,962.

Patented Apr. 1, 1919.

8 SHEETS—SHEET 1.

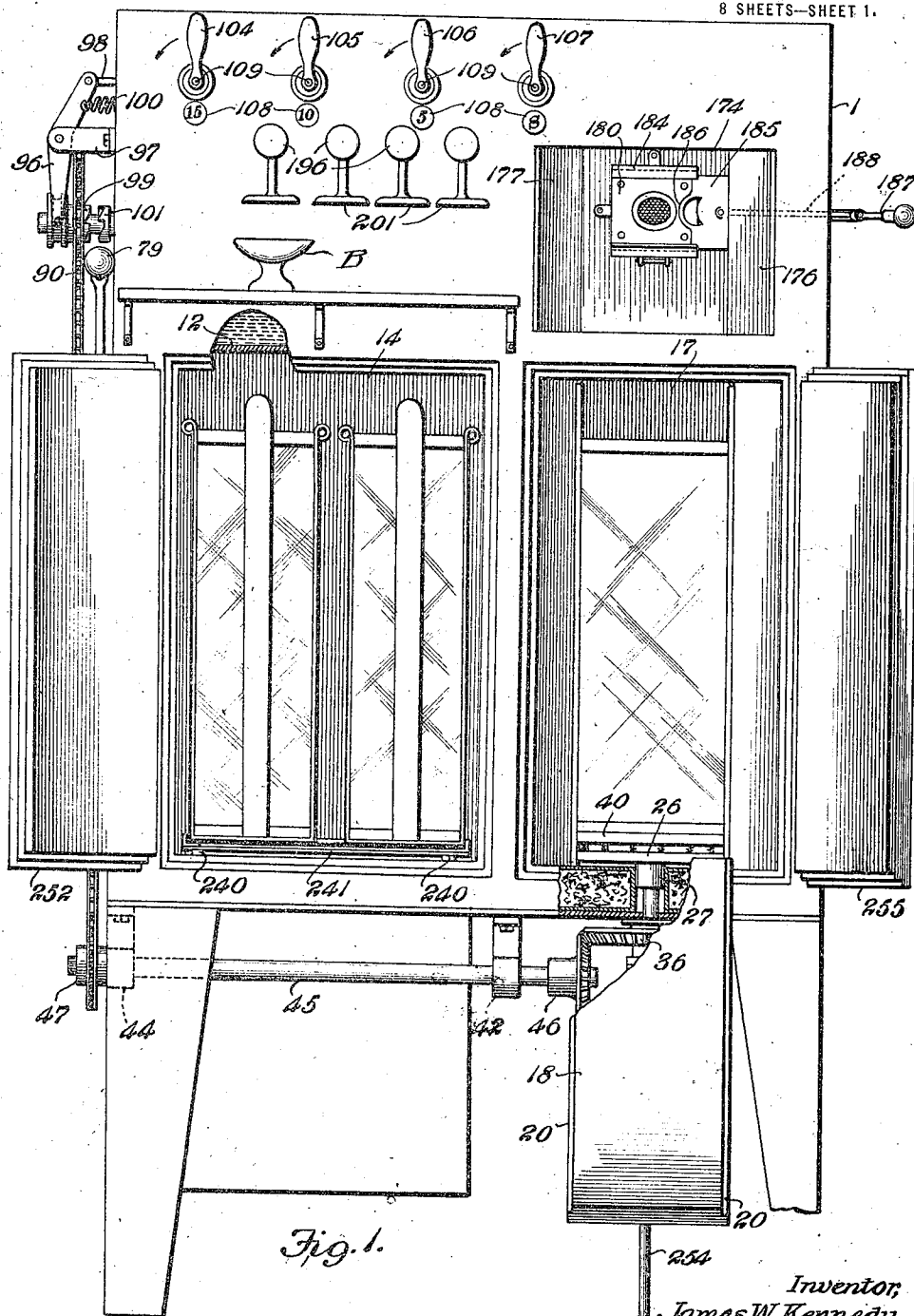


Fig. 1.

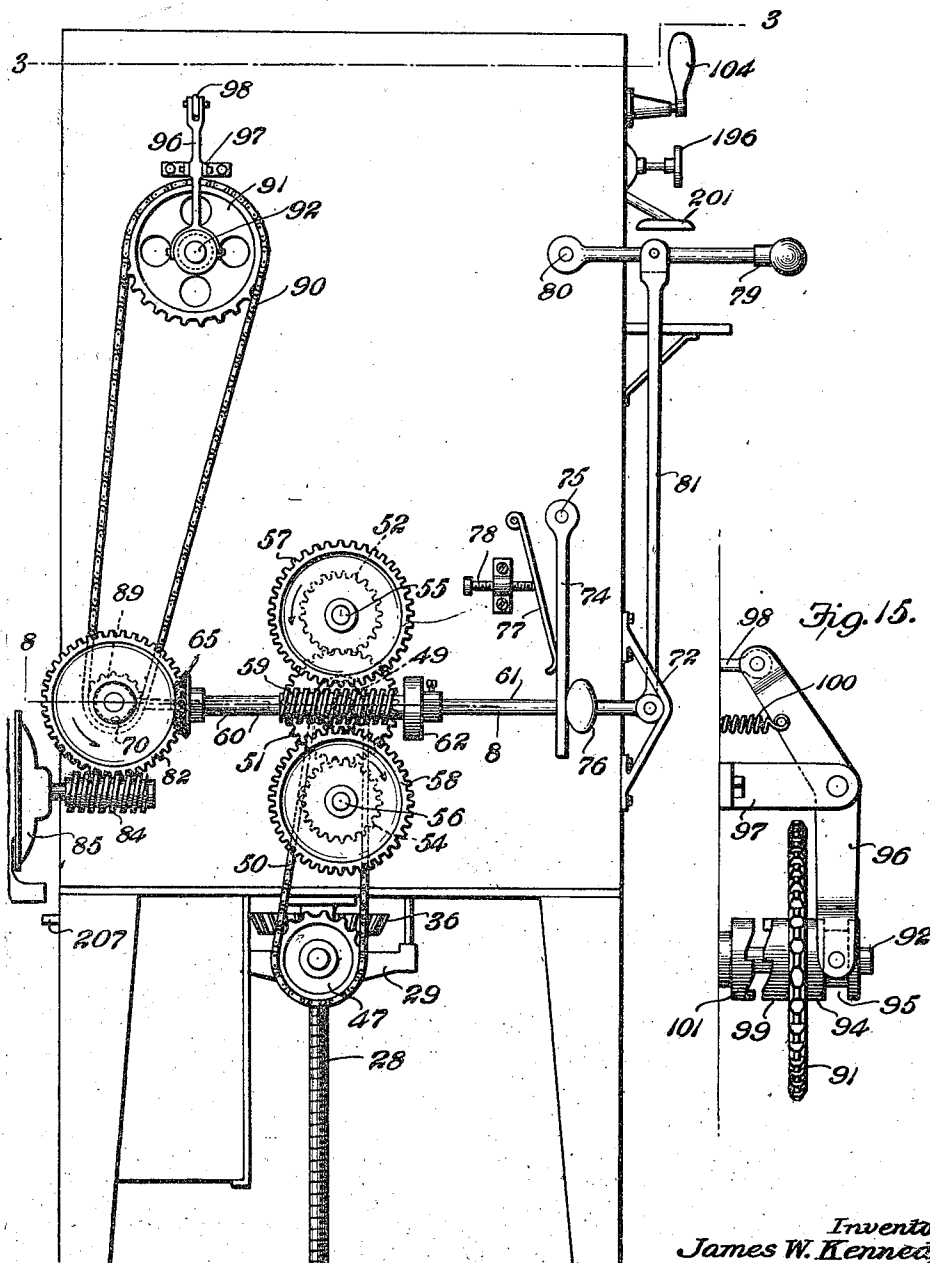
Inventor:
 James W. Kennedy,
 J. W. Bond
 Atty,

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Fig. 2.



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 J. W. Bond
 Atty.

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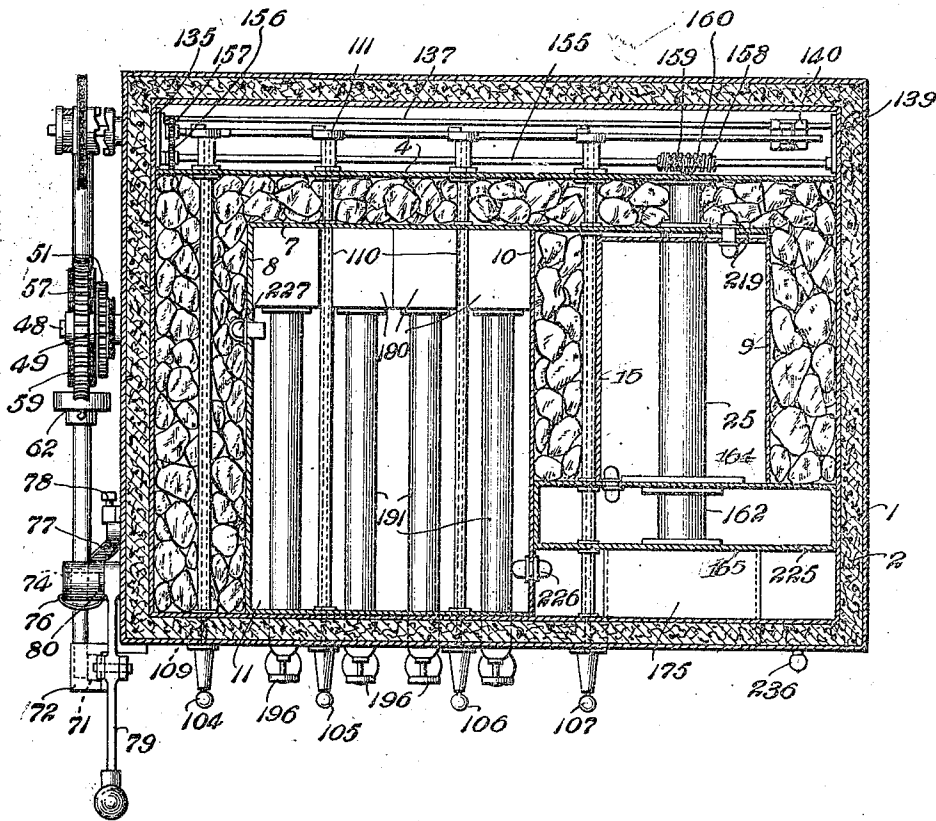
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Fig. 3.



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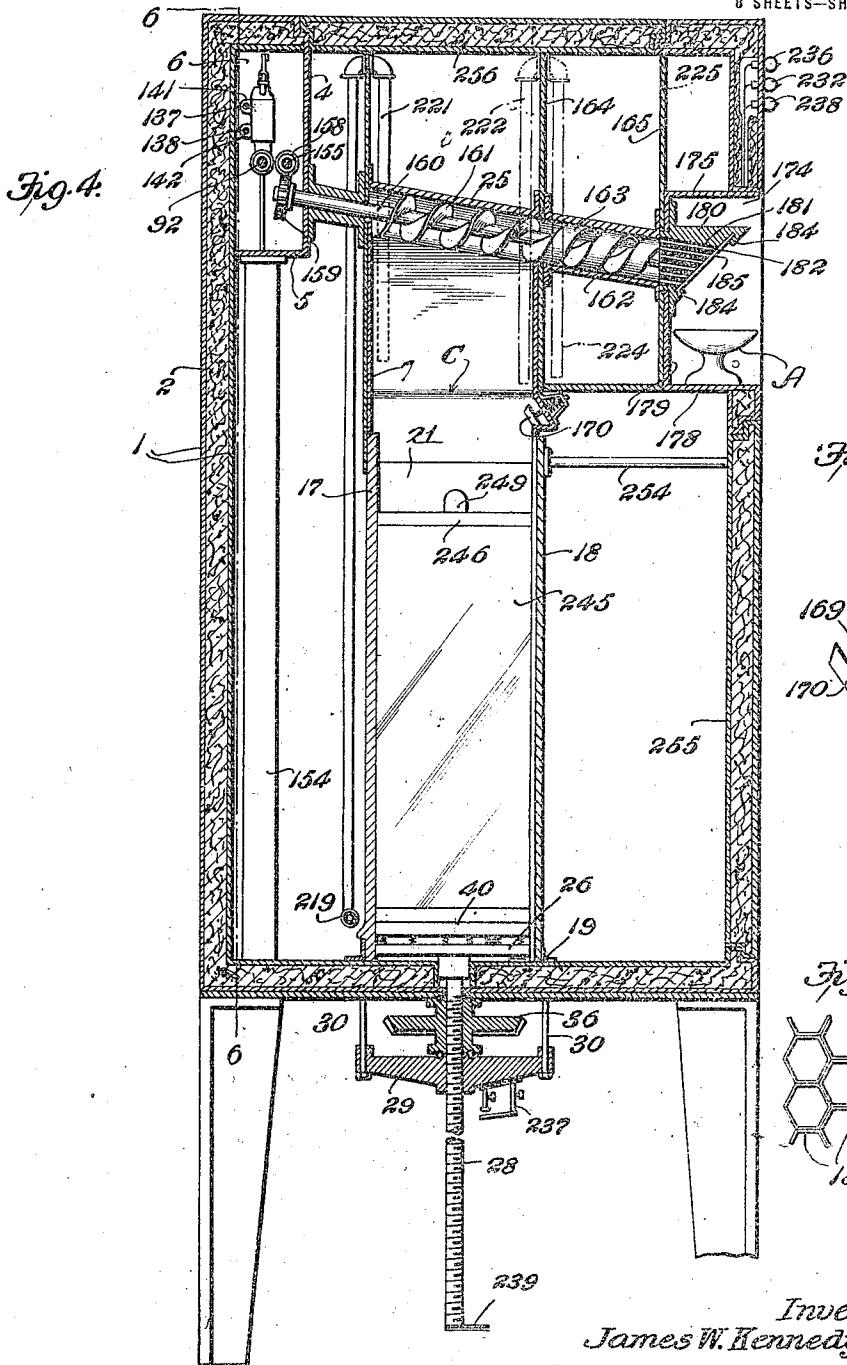


Fig. 13.

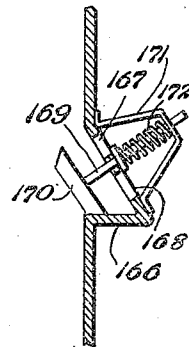
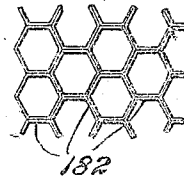


Fig. 14.



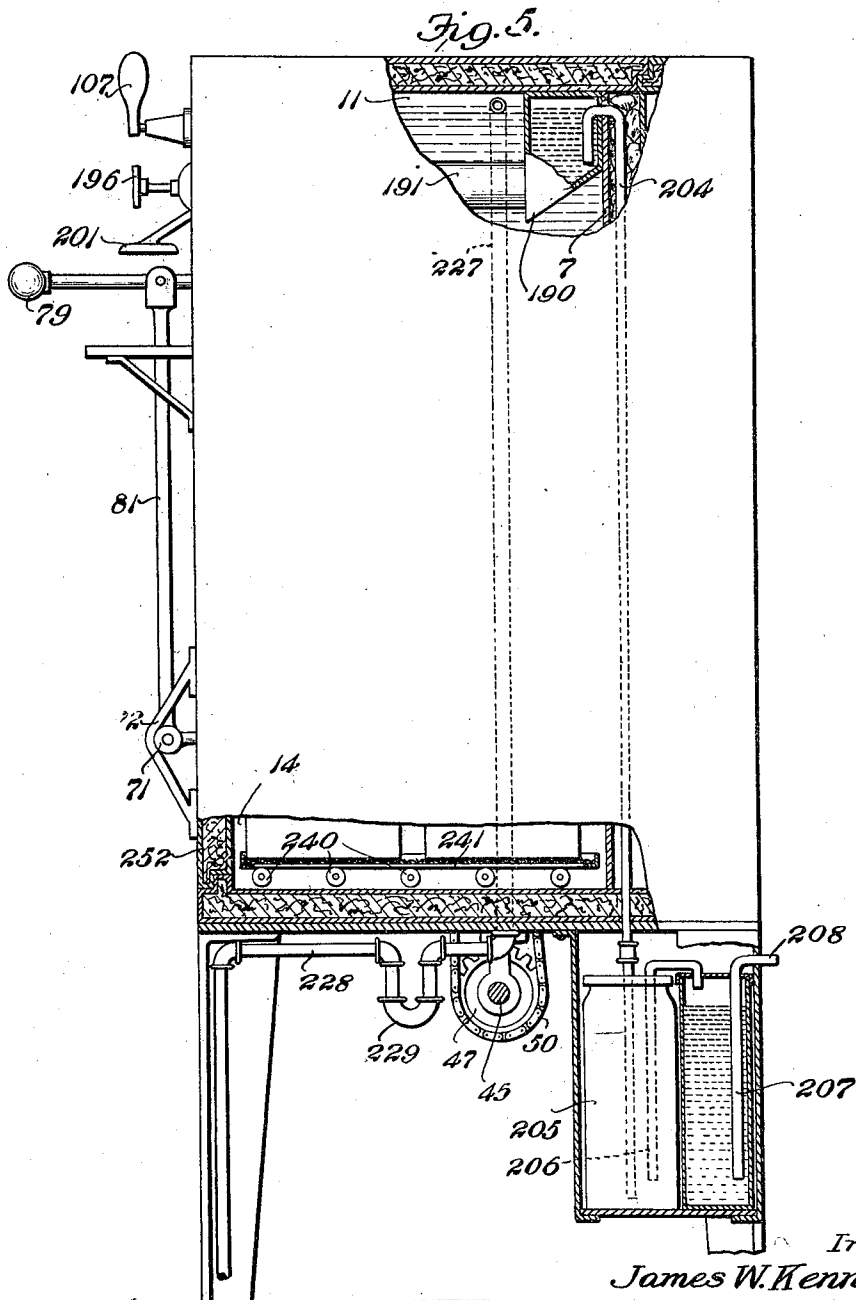
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Fig. 6.

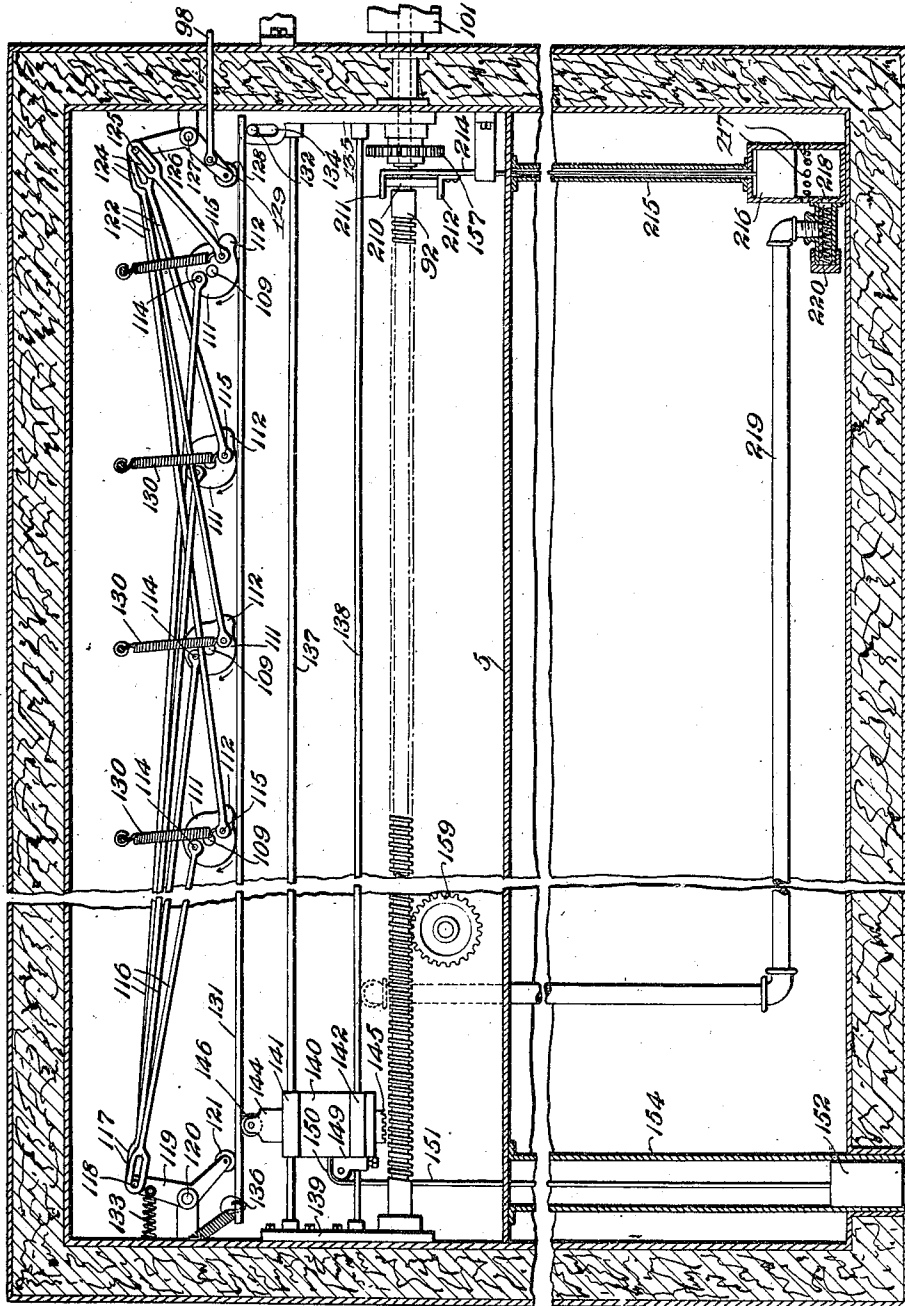


Fig. 10.

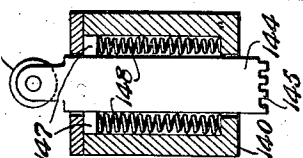
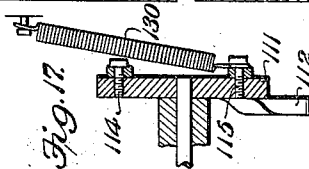


Fig. 17.



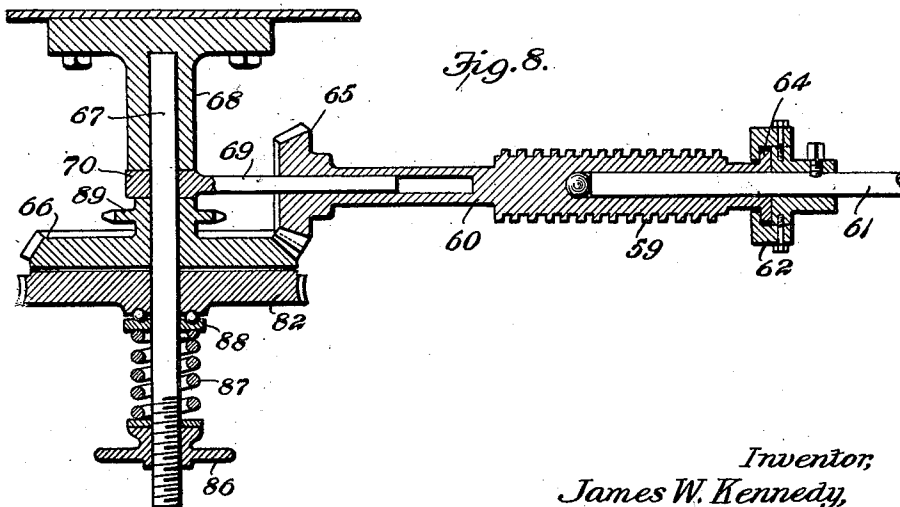
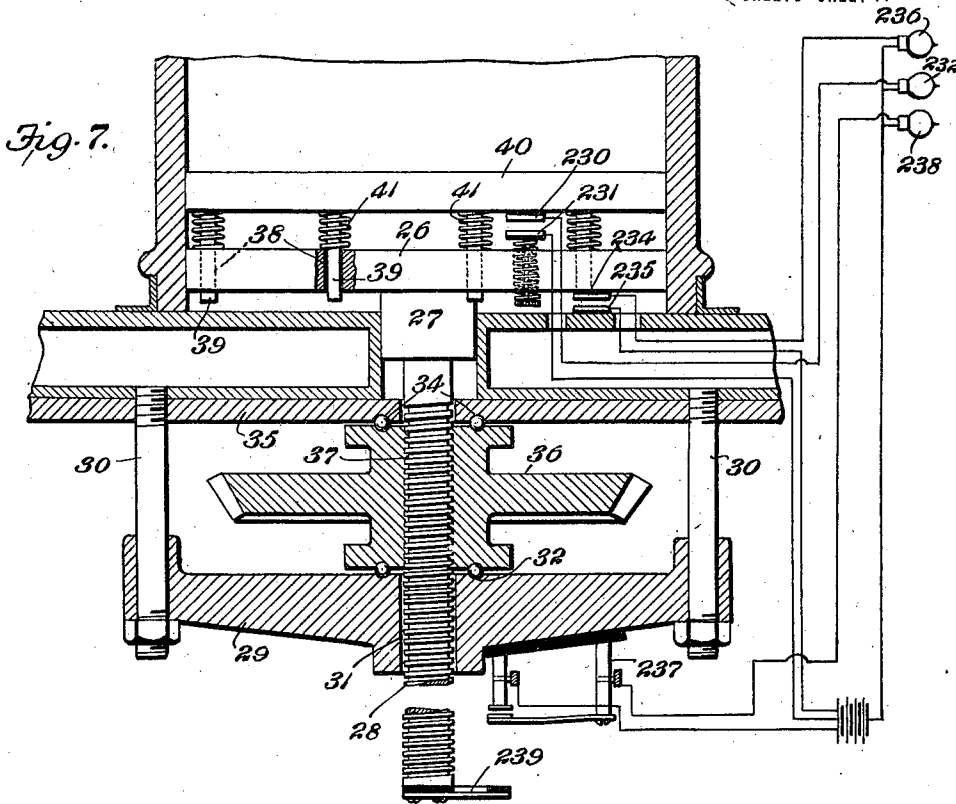
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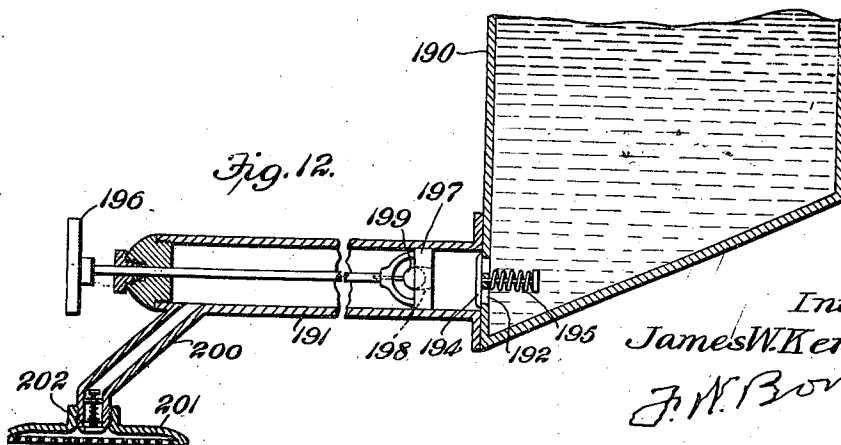
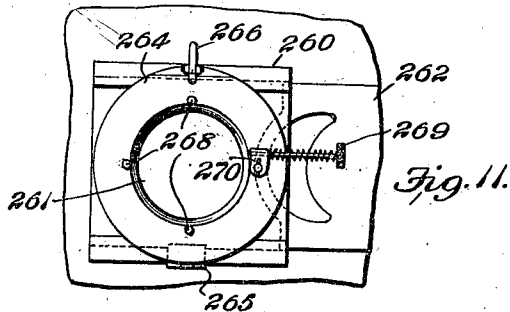
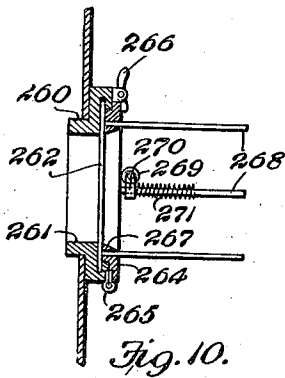
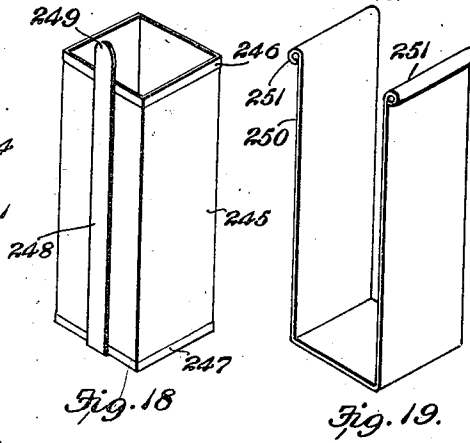
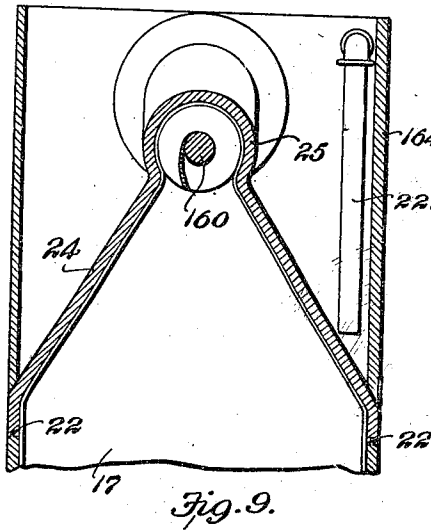


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Inventor;
 James W. Kennedy,
 J. W. Bond

Atty.

UNITED STATES PATENT OFFICE.

JAMES W. KENNEDY, OF CANTON, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-FOURTH TO JOHN E. DUNGAN, OF CANTON, OHIO, ONE-FOURTH TO WALTER S. BRYSON, ONE-SIXTEENTH TO BENJAMIN F. BONE, ONE-SIXTEENTH TO FRANK M. HOWARD, ONE-SIXTEENTH TO JAMES A. SCHAUB, AND ONE-SIXTEENTH TO ALLEN C. SCROGGINS, JR., ALL OF MOUNDSVILLE, WEST VIRGINIA, AND ONE-FOURTH TO G. WILLIAM WAY, OF WHEELING, WEST VIRGINIA.

APPARATUS FOR STORING AND DISPENSING ICE-CREAM.

1,298,962.

Specification of Letters Patent.

Patented Apr. 1, 1919.

Application filed December 17, 1917. Serial No. 207,601.

To all whom it may concern:

Be it known that I, JAMES W. KENNEDY, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a new and useful Apparatus for Storing and Dispensing Ice-Cream, of which the following is a specification.

This invention relates to apparatus for storing and dispensing ice cream, ices and the like, the object being to construct a machine of this character so that the ice cream or ices will not be touched by the hands of the dispenser.

Another object is to provide a machine of this character in which a collapsible container made of paper or similar material, is employed to hold the ice cream, thereby removing the possibility of ptomaine poisoning which often results where the cream is placed in a metal container and allowed to remain in such container until acids in the fruit extracts used in flavoring the ice cream have begun to attack the said metal container.

Another object is to construct a machine of this kind in such a way that the ice cream placed in the machine may be left unflavored until the customer has designated the particular flavor he wishes, at which time the portion ordered by the customer is fed from the machine and flavored with any desired flavoring from the large assortment of fruit and flavoring syrups which the confectioner usually has.

A further object is to so construct a machine of this kind that the ice cream can be kept at the desired hardness, at the same time a big saving being effected in the amount of ice used for refrigerating the cream.

A further object is to construct a machine of this class that will automatically deliver the exact amount of cream desired by the operation of one of a series of handles.

A still further object is to construct a machine of this kind that will handle the ice cream in a thoroughly sanitary and cleanly manner, without permitting the ice cream or flavoring syrups to come in contact with the air from the time it is placed in the ma-

chine until it is ready to serve to the customer and saving the loss which always exists when the ice cream is handled in the ordinary way and dipped from the can each time a sale is made.

With these objects in view the invention consists in the novel construction and arrangement of parts, hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of construction may be made within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a front elevation of my improved ice cream dispensing machine with the doors to the storage and dispensing compartments open, exposing the interior thereof and with a portion broken away adjacent the under side of the dispensing compartment exposing the gearing, etc., for feeding the ice cream upward.

Fig. 2 is a side elevation of my machine showing the starting lever and its cooperating parts.

Fig. 3 is a horizontal sectional view taken substantially on the line 3—3, of Fig. 2.

Fig. 4 is a section through the dispensing mechanism.

Fig. 5 is a section through the storage compartment and syrup feeding apparatus.

Fig. 6 is an enlarged sectional view taken on line 6—6 of Fig. 4, showing the automatic stop mechanism which determines the amount of cream to be fed from the machine and also the brine pump and part of the brine circulating system, intermediate portions of this view being broken away to permit the figure to be made on a larger scale.

Fig. 7 is an enlarged detail sectional view through the worm for lifting the collapsible container with the electrical signal system which indicates the several operations of the said mechanism shown semi-diagrammatically.

Fig. 8 is an enlarged detail sectional view taken on the line 8—8, of Fig. 2.

Fig. 9 is a cross section through the worm conveyer for feeding the cream to the cut-off mechanism.

Fig. 10 is a sectional view through a cut-off mechanism adapted to be used when it is not desired to flavor the cream at the time of serving it.

Fig. 11 is a front view of the cut-off shown in Fig. 10.

Fig. 12 is a longitudinal sectional view through one of the flavoring syrup containers with the pump and serving nozzle which I use in conjunction therewith, intermediate part being broken away.

Fig. 13 is an enlarged detail sectional view through the air outlet valve located in the dispensing compartment.

Fig. 14 is a detail elevation showing the arrangement of the hexagonal tubes within the cut-off blocks.

Fig. 15 is an enlarged detail view of the clutch and clutch operating lever employed to automatically disconnect the feeding mechanism.

Fig. 16 is a sectional view through the traveling carriage mechanism.

Fig. 17 is a detail sectional view on an enlarged scale through one of the stops employed to determine the amount of cream to be fed from the machine.

Fig. 18 is perspective view on a reduced scale of one of the collapsible containers in which the cream is placed by the manufacturer and adapted to be used in conjunction with my machine.

Fig. 19 is a perspective view on a reduced scale of the carrier employed when delivering the collapsible container from the manufacturer to the retailer and used by the retailer to hold the container while the same is in the storage compartment of my machine.

Similar numerals of reference indicate corresponding parts throughout the several figures of the drawings.

The housing or casing of my machine is substantially rectangular and is formed of spaced sheet metal walls 1 with cork, mineral wool or like insulating material 2 packed between the said sheet metal walls thus forming an efficient non-conductor of heat to prevent the interior of the machine from becoming warmed by the surrounding atmosphere. Within the insulated box thus formed is a laterally extending sheet metal wall 4 which is spaced from the rear wall of the machine and extends from the upper interior wall downwardly, and thence rearwardly as at 5, thus forming an upper rear compartment 6 within the box. Spaced slightly forwardly of the wall 4 is a second laterally extending wall 7 which terminates as shown in Fig. 3 at a point a few inches distant from the end walls. A transverse wall 8 extends forwardly from the ex-

treme left end of the wall 7 and connects to the front wall of the box and a similar wall 9 extends from the extreme right end of the wall 7 to a partition wall to be hereinafter more fully described. Intermediate the walls 8 and 9 is a third transverse wall 10 which extends from the wall 7 forwardly to the front wall of the box, thus forming a compartment 11. The walls 7, 8 and 10 extend from the floor to the inside of the top of the box. A horizontal wall 12 soldered or otherwise secured to the walls 7, 8 and 10 and the front wall of the box forms a lower compartment 14 directly beneath the compartment 11 all of which is clearly shown in Fig. 4. Spaced slightly from the wall 10 is a lateral wall 15 which extends forwardly from the wall 7. Immediately adjacent the walls 7, 9 and 15 is a vertical casting 17 having a door 18 hinged at 19. The door 18 is grooved as at 20, Fig. 1, the said grooves being adapted to fit snugly upon tongues arranged upon the forward edges of the side walls of the casting 17 so that when the door 18 is raised into vertical position an air tight joint is effected between the casting and the said door which thus forms, with the three sides of the casting, a vertical compartment 21. The upper edge of the casting 17 has a tongue 22 formed thereon, the said tongue fitting within a groove upon the under edge of a casting 24, Figs. 1 and 8. The front and rear walls of the casting 24 extend vertically from the casting 17. The side walls, however, are inclined slightly toward the center and terminate in a laterally extending cylindrical portion 25, which is inclined slightly downwardly toward the front end. A thin sheet of non-corrosive metal is applied to the entire interior of the castings 17 and 24 and the door 18.

The lower end of the compartment 21 formed by the casting 17 has fitted therein a vertically movable plunger 26 which has a centrally located downwardly projecting collar 27. The collar 27 is internally threaded and is adapted to receive the upper end of a vertical screw 28. A bracket 29 secured by bolts 30 to the under side of the machine, has a central aperture 31 drilled therethrough, through which the screw 28 is adapted to slide. A ball race 32 is formed on the upper side of the bracket 29 and a similar ball race 34 is formed on the under side of a plate 35 which is secured to the under side of the machine by the bolts 30. A bevel gear 36 mounted to rotate upon ball bearings located within the races 32 and 34 just described, is internally threaded as at 37 to receive the screw 28. A series of holes 38 is drilled in the plunger 26, the said holes being adapted to receive pins 39, which extend downwardly from a secondary plunger 136

40, the said secondary plunger being spaced slightly above the plunger 29 and fitting snugly within the compartment 21. Coiled springs 41 are interposed between the
 5 plunger 26 and the secondary plunger 40 and are held in position by the pins 39 as shown in Fig. 7. Spaced slightly to the left of the vertical screw 28 is a bearing 42, Fig. 1, which is bolted to the plate 35 and
 10 with a similar bearing 44 is adapted to have rotatably mounted therein the horizontal shaft 45. Keyed to one end of the shaft 45 is a beveled pinion 46 which meshes with the beveled gear 36, the op-
 15 posite end of the shaft 45 having keyed thereto a sprocket 47.

In substantial vertical alinement above the shaft 45 is a stub shaft 48 journaled in a bearing secured to the outside of the left
 20 hand end wall of the machine. The stub shaft 48 carries a sprocket 49 over which passes a sprocket chain 50 which also connects to the sprocket 47. Secured upon the shaft 48 adjacent the sprocket 49 is a gear 51
 25 which meshes with gears 52 and 54, the gear 52 being carried by a stub shaft 55 which in turn is carried by a bearing mounted upon the outside of the end wall of the machine in direct vertical alinement above the shaft
 30 48, the gear 54 being carried by a similar stub shaft 56 mounted in a journal in direct vertical alinement beneath the shaft. worm gear 57 is also mounted upon the shaft
 35 55 and a similar worm gear 58 is mounted upon the shaft 56 and a worm 59 formed on a sleeve 60 lies between the worm gears 57 and 58 and is adapted to normally remain
 40 out of engagement with both of the said worm gears. A rod 61, Figs. 2 and 8, enters one end of the worm 59 and has secured upon it by a set screw, an annular collar 62, which is
 45 adapted to fit about an annular flange 64 carried by the worm. The end of the sleeve 60 opposite the worm carries an integral bevel pinion 65 which meshes with a pinion 66
 50 mounted to rotate upon a stub shaft 67 secured by the block 68 to the outside wall of the machine, near the rear edge thereof. Inserted into the sleeve portion 60 is a shaft 69,
 55 which shaft has an eye portion 70 fitted about the shaft 67 adapted to rock thereon. It is thus seen that the sleeve 60 carrying the worm 59 and the pinion 65 is free to turn upon the rods 61 and the shaft 69 and at the same time
 60 can be rocked into engagement with either of the worm gears 57 or 58 by virtue of the eye 70 fitting about the shaft 67. The end of the rod 61 opposite the one entering the worm, carries a pin on which is mounted a roller
 65 71, the said roller engaging a substantially V-shaped bracket 72 which is mounted on the front wall of the machine and off-set as shown in Fig. 3 to come into alinement with the said roller. A bifurcated arm 74 is
 70 mounted to swing upon a pin 75 secured in

the side wall of the machine and has its bifurcated end straddling the rod 61 and held in engagement with an enlarged portion 76
 75 upon the said rod 61, by means of a leaf spring 77 which is tensioned by a set screw 78. An operating handle 79 mounted to
 80 swing upon a pin 80 secured in the side wall of the machine, is connected to the pin carrying the roller 71, secured in the rod 61, by a rod 81.

The arm 74 under tension of the spring 77, will through its engagement with the en-
 85 larged portion 76 upon the shaft 61, normally hold the roller 71 within the point of the V of the bracket 72, at which time the rod 61 assumes a perfectly horizontal position, since the point of the V is in direct
 90 horizontal alinement with the center of the stub shaft 67. The worm 67 is thus held out of engagement with either of the worm gears 57 or 58. The depression of the operating
 95 handle 79 will cause the roller 71 to travel downwardly upon the inner face of the lower section of the V-shaped bracket 72, thus causing the shaft 69, the worm 59 and the rod 61
 100 to pivot upon the shaft 67 and bringing the worm 59 into engagement with the worm gear 58. It is obvious that the pinion 65 will in the meantime remain in constant mesh with the pinion 66. Should the handle 79
 105 be lifted instead of depressed as just described the roller will travel upon the upper section of the V-shaped bracket causing the rod 61 and the worm 59 to pivot upon the shaft 67 and bringing the worm into en-
 110 gagement with the worm gear 57.

Mounted to rotate upon the shaft 67 is a worm gear 82, which meshes with a worm 84
 115 secured upon the drive shaft of an electric motor 85, which is wound to rotate clockwise. The end of the shaft 67 is threaded as shown in Fig. 8 to receive an adjusting nut
 120 86 which is designed to tension a coiled spring 87, interposed between the said nut and a bearing plate 88. Ball bearings are
 125 interposed between the bearing plate 88 and the worm gear 82. Sufficient tension can therefore be put upon the spring 87, to bring the inner face of the gear 82 in contact with the face of the pinion 66 to cause
 130 the said pinion to be rotated with the gear 82 through frictional contact therewith.

Formed integral with the pinion 66 is a sprocket 89 over which passes a sprocket
 135 chain 90, which extends upwardly and over a sprocket 91, rotatably mounted upon a shaft 92. Formed integral with the sprocket 91 is a sleeve 94 in which is formed an annular
 140 groove 95, which is adapted to receive the inwardly projecting pins carried by the bifurcated end of a bell crank lever 96 mounted to rock within the bracket 97 secured to
 145 the side wall of the machine (see Fig. 15). The upper end of the said bell crank lever is also bifurcated and is secured to the end of a

sliding rod 98. One member 99 of a clutch is also formed integral with the sprocket 91 and a coiled spring 100 is adapted to exert an inward pull upon the upper end of the bell crank lever to normally hold the member 99 of the clutch out of engagement with the opposite member 101 of the said clutch, which member is keyed or otherwise secured to the shaft 92.

Referring now particularly to Figs. 1, 3 and 5, a series of handles is indicated at 104, 105, 106 and 107 and beneath each of the said handles is a plate 108 bearing figures designating different amounts. Each of the said handles is secured to a rod 109 which extends through the front wall of the machine and through a tube 110 which tube is secured to the front inner wall of the machine at one end and to the wall 4 at the rear of the machine at its other end, the rods 109 being free to rotate within the said tubes. Secured to each of the rods 109 at its extreme rear end is a disk like member 111 which has an off-set ear 112 and oppositely disposed pins 114 and 115. The disk portions 111 are adapted to normally stand with the pins 114 slightly to one side of the vertical center at the top of the said disks and with the pins 115 standing slightly to the other side of the vertical center at the bottom. Eyes upon one of the ends of rods 116 are fitted over each of the pins 114, the opposite end of each of said rods being formed into an elongated eye 117 fitting over a stud 118 fixed to the upper end of a bell crank lever 119, which lever is pivoted at 120 and has a roller 121 journaled between bifurcations formed at its lower end. Eyes upon one of the ends of rods 122 are fitted over each of the pins 115, the said rods 122 being substantially similar to the rods 116 and terminating at their opposite ends in elongated eyes 124, which eyes are adapted to receive a pin 125 carried by a second bell crank lever 126, pivoted at 127, and having a roller 128 journaled between bifurcations at its lower end. The rod 98 previously described and having its outer end pivoted to the upper extremity of the bell crank lever 96, extends through the end wall of the machine and receives a stud 129 secured in the bell crank lever 126. Coiled springs 130 are secured at their lower ends to each of the pins 115 and at their upper ends to studs fastened to the inner rear wall of the machine. A spring 133 secured at one end to the inner end wall of the machine and at its other end to the bell crank lever 119 is arranged to exert a constant pull upon the upper end of said bell crank lever toward the end wall of the machine. The rollers 121 and 128 are adapted to engage the upper side of a rod 131, which extends transversely of the machine and is supported at one end upon a pin 132 designed to move vertically within a slot 134 in the upper end of a supporting bracket 135 secured to the inner wall of one end of the machine. The opposite end of the rod 131 is supported by a coiled spring 136 secured to the inner wall at the other end of the machine. Rods 137 and 138 also extending transversely of the machine are fixed at one of their ends in the supporting bracket 135 and at their opposite ends in a substantially similar bracket 139. A hollow rectangular traveling carriage 140 is formed with horizontal ears 141 and 142 extending across its rear side, the said ears having longitudinal apertures therein through which pass the rods 137 and 138 respectively, the said rods 137 and 138 forming a track upon which the carriage 140 is adapted to slide. Apertures are formed in the top and bottom portions of the carriage 140 to receive a bolt 144, the said bolt having a worm engaging portion 145, at its lower end and being bifurcated at its upper end to receive a roller 146. Laterally extending ears 147 formed on opposite sides of the bolt 144 are normally held in contact with the top of the casing by means of coiled springs 148 within the said casing. The roller 146 is adapted to engage the lower side of the rod 131. A stop 149 is fastened upon the rod 138 and carries an idler pulley 150 over which passes a flexible cable 151 secured at one end to the carriage 140 and with a weight 152 operating in a guide 154 secured to its other end. The shaft 92 previously described extends within the machine and is journaled at one end in the supporting bracket 139 and near its other end in the bracket 135 and for substantially its entire length within the said machine is fashioned to form a worm as clearly shown in Fig. 6.

It will now be seen that when one of the handles 104, 105, 106 or 107 is moved in the direction indicated by the arrows in Fig. 1 the disk member 111 secured by its rod 109 to the said handle will be moved in the direction indicated by the arrows on Fig. 6, thus moving the ear 112 upon the disk portion to a position at the vertical center beneath the rod 109. At the same time the rods 116 and 122 connected to the disk 111 which has been moved, will rock the bell crank levers 119 and 126 causing their respective rollers to force the rod 131 downwardly. The pin 115 is now moved past the vertical center at the bottom to the opposite side thus causing its spring 130 to exert an upward pull upon the disk member in the opposite directions, holding the said disk member in this position after the handle attached to its rod 109 has been released. The bell crank lever 126 having been rocked as just described will cause the rod 98 to rock the bell crank lever 96, thereby moving the member 99 of the clutch into engagement with the

member 101, and since the sprocket 91 is being continuously driven by the chain 90 through the worm and gear from the motor 85, the shaft 92 will begin to rotate. This depression of the rod 131 by virtue of its contact with the roller 146 carried by the bolt 144 forces the worm engaging portion 145 of the said bolt into engagement with the worm upon the shaft 92. Rotation of the shaft 92, through the engagement of the worm upon the said shaft with the worm engaging portion 145, will, therefore, cause the member 140 to be moved along the rods 137 and 138 toward the opposite end of the machine. When the member 140 reaches the point on the rods 137 and 138 directly beneath the disk member 111 which has been moved, the roller 146 will contact with the ear 112 upon the said disk portion until the pin 115 has once more passed vertical center at the bottom when the spring 130 attached to the said pin will again be pulling upwardly from the opposite side restoring the disk to normal position. It is obvious that the rods 116 and 122 which had been operated to rock the bell crank levers 119 and 126 respectively will have now released their pull upon the said bell crank levers. The spring 133 attached to the lever 119 will therefore restore the said lever to normal position and allow the spring 136 to lift the end of the rod 131 to which it is attached. In the same manner the spring 100 attached to the lever 96 will swing the said lever back to normal position, disengaging the clutch members 99 and 101, forcing the rod 98 inwardly and restoring the lever 126 to normal position, thereby allowing the bolt member 144 within the carriage 140 to be forced upwardly by the springs 148 and lifting the rod 131 to normal position. The raising of the bolt member 144 will disengage the portion 145 from the worm on the shaft 92 and allow the weight 152 on the cable 151 operating over the pulley 150 to pull the carriage 140 back to normal position against the stop 149.

In direct horizontal alinement with the shaft 92 is a shaft 155 which is journaled to rotate in the brackets 135 and 139, a gear 156 mounted upon the said shaft 155 meshing with a gear 157 mounted upon the shaft 92, thereby causing the shaft 155 to rotate in the opposite direction of the shaft 92. A worm 158 is keyed to the shaft 155 and meshing with the said worm is a worm gear 159, keyed to a shaft 160 which extends centrally through the inclined cylindrical portion 25 at the top of the casting 24. A worm conveyer 161 is formed upon the shaft 160 and is adapted to rotate with the said shaft. The forward end of the worm conveyer fits within a tubular portion 162. The said tube is secured at one end to a wall 164 which is soldered or otherwise secured to form a water-tight joint upon the casting 24, the

other end of the tubular portion 162 being fastened to the front wall of an open sided rectangular box-like structure 165, the rear or open side of the said box 165 fitting against the front side of the wall 164 as shown in Fig. 4, and being soldered thereto to form a water-tight joint. The bottom of the compartment 165 is in a horizontal plane slightly above the top of the casting 17. The lower portion of the front wall of the casting 24 has an off-set 166 as shown in Fig. 13 and an aperture 167 is formed in the inclined portion 168 connecting the said off-set with the vertical portion of the casting above the off-set. The aperture 167 is formed to leave radial spoke-like portions extending toward the center of the said aperture to form a bearing for the valve stem 169 of the valve 170. A bracket 171 is secured to the outer side of the casting and interposed between the said bracket and an annular flange formed upon the valve stem 169 is a coiled spring 172, which is adapted to normally hold the valve unseated to leave the aperture 167 open. A recess 174 formed in the front wall of the machine is inclosed by the upper wall 175 and end walls 176 and 177, the bottom wall 178 of the said inclosure being in horizontal alinement with the bottom of the metal box-like member 165, the rear wall 179 of this compartment being secured to the front wall of the compartment 165. A cut-off block 180, with a central aperture 181 therethrough is secured to the wall 179. The aperture 181 is of the same diameter as the inside diameter of the tubular portion 162, the said aperture being adapted to register with the said tubular portion and having a plurality of hexagonal tubes 182, Fig. 14, forming a honeycombed portion within the said aperture. The front face of the cut-off block 180 is cut at an angle and has grooves formed by flanges 184 extending horizontally across the upper and lower portion of the said cut-off block. A sliding plate 185 fits within the grooves formed by the flanges 184 and centrally located upon its inside edge is a substantially crescent shaped knife 186. An operating handle 187 is pivoted to the side of the machine and connects with the sliding plate by means of a rod 188 and is adapted to be swung inwardly toward the machine to cause the knife 186 to pass in front of the aperture 181.

Located within the compartment 11 is a plurality of containers 190, the bottoms of which are inclined downwardly toward the front side as shown in Figs. 5 and 12. Each of the said containers is designed to be filled with a different flavoring syrup and has a forwardly projecting tubular portion 191 connected to its lower front corner. An aperture 192 communicating with the said tubular portion is normally closed by a valve 194

under the tension of a coil spring 195. An operating handle 196 connects to a plunger 197 within the tubular portion. The plunger has a centrally located aperture 198 and a ball valve 199 adapted to close the said aperture is arranged to be unseated at the inward stroke of the plunger and seated at the outward stroke. At the forward end of the tubular portion, an outlet pipe 200 extends forwardly and downwardly to a perforated nozzle 201 and a valve 202 located in the outlet pipe is designed to open at the outward stroke of the plunger. It will thus be seen that the first outward stroke of the plunger will unseat the valve 194 drawing a charge of the flavoring syrup into the tube 191, the valve 199 meanwhile remaining positioned to close the aperture 198. At the first inward stroke of the plunger the valve 194 is seated preventing the syrup between the plunger and the said valve from returning to the said container, the valve 199 unseating to allow the syrup to pass through the aperture 198 as the plunger moves backwardly. At the next stroke forward of the plunger the valve 199 is again seated and the valve 202 is opened allowing the syrup which was first pumped into the tube and now lies in the said tube between the front of the plunger and the forward end of the tube, to be forced through the outlet pipe 200, the valve 202 and through the perforations in the nozzle 201. A new charge of syrup is meanwhile being sucked through the valve 194 so that each succeeding forward stroke of the plunger will discharge a quantity of syrup through the nozzle 201. Connected to each of the syrup containers 190 by a pipe 204, is a storage tank 205, containing the same kind of syrup as that in the syrup container, to which it is attached. The pipes 204 extend almost to the bottom of the storage tanks 205 and a second pipe 206 terminating a short distance above the end of the pipe 204 passes outwardly through the top of the said storage tank and into an air washing tank 207. The said air washing tank is filled with any suitable solution for purifying the air as it passes therethrough to a point just below the end of the pipe 206 and a pipe 208 reaching almost to the bottom of the air washing tank extends through the cover thereof to permit air to be sucked in. The covers to the storage tanks 205 will necessarily have to be secured in an air tight manner as will also the cover to the air tank 207. A suitable connection will be located in each of the pipes 204 to disconnect any of the storage tanks when it becomes necessary to refill the same. By this arrangement it will be seen that all of the air used to displace the syrup pumped from the storage tanks will be purified by passing through the air washing tank, thus insuring absolute sanitation.

Mounted upon the shaft 92 adjacent the

gear 157 is a cam 210 which is designed to operate between the lateral extensions 211 and 212 of a rod 214. The said rod extends downwardly and through the guide tube 215 and is connected at its lower extremity to the plunger of a force pump 216. Inlet ports 217 are formed in the cylinder of the said pump and an outlet port 218 connects with a pipe 219. A spring seated valve 220 is arranged to open at the down stroke of the plunger and close at its upward stroke. The pipe 219 extends laterally to a point slightly beyond a vertical line drawn downwardly from the center of the casting 24, and thence upwardly to substantially the top of the inside of the machine where a U-fitting connects the upper end of said pipe with a pipe 221 extending downwardly within the wall 164. The pipe 221 extends as shown in Fig. 9 to approximately the bottom of the wall 164. A second pipe 222 shown in dot and dash lines Fig. 4 extends upwardly from the diagonally opposite bottom corner of the wall 164 and has a U-connection at its upper end which enters the compartment formed by the wall 165 and the wall of the tank 164, where it connects to a downwardly extending pipe 224 which reaches almost to the bottom of the second tank. An over-flow opening 225 is formed in the wall of the compartment 165 at the diagonally opposite upper corner to the one into which the pipe 224 discharges. A pipe 226 extends upwardly from approximately the bottom of the compartment formed by the wall of the box-like structure 165, the end and front walls of the machine and the partition 10 at the end opposite the one in which is located the over-flow opening 225, the said pipe extending through the wall 10 and into the compartment 11 in which are located the syrup containers 190. An outlet located in the wall 9 at approximately the diagonally opposite corner from the pipe 226 in the compartment 11, connects with a drain pipe 227, which extends thence downwardly and to a sewer outlet pipe 228 in which is located an ordinary U-trap 229.

The space surrounding the compartments 11, 14, and the casting 24, can be filled with chopped ice as indicated in Fig. 3, the ice being packed within the said space with ordinary salt in the manner now employed to pack ice cream. It is of course understood that the compartment 6 formed in the upper rear corner of the machine by the walls 4 and 5 will not be filled with ice. The brine formed by the salt and melting ice will accumulate in the bottom of the machine beneath the chopped ice and at each engagement of the clutch member 99 and 101 which sets in motion the shaft 92, the cam 210 mounted upon the said shaft will, through its engagement with the arms 211 and 212 on the plunger rod 214, cause the plunger

within the pump 216 to be reciprocated. Each upward stroke of the plunger will admit brine through the inlet ports 217 to the cylinder of the pump and each downward stroke of the plunger when it reaches a point below the inlet ports will force the brine through the aperture 218 and past the valve 220 and into the pipe 219 whence it travels upwardly and is discharged through the pipe 221 into the bottom of the tank 164. Rising in this tank to the level of the U-connection between the pipes 222 and 224, it will overflow into the compartment formed by the wall 165 where it again rises to the level of the outlet 225 and is discharged into the next compartment. The pipe 226 in turn carries the brine into the compartment 11 where it rises to the level of the outlet to the pipe 227 whence it is discharged to the sewer. It is thus seen that a circulation is maintained so that even though a large percentage of the ice originally placed in the machine for refrigerating purposes has melted, leaving the ice space in the upper part of the machine empty, the cold brine from the bottom of the said space will be circulated through the machine to maintain an even refrigeration.

Referring now to Figs. 4 and 7, one contact member 230 of a switch is shown secured to the under side of the secondary plunger 40. The opposite contact member 231 of the said switch is secured to the upper side of the plunger 26, the member 231 being spring pressed upwardly and provided with an adjusting screw and nut to regulate its distance from the member 230, and a circuit wire leading from each of the switch members connects through a suitable source of power with an electric lamp 232 located on the front of the machine in plain view of the operator. The adjusting screw connected to the member 231 will be set so that the spring surrounding the set screw will keep the members 230 and 231 in contact until the springs 41 have nearly reached the limit of their expansion after the plunger 26 has ceased to move upwardly, the contact between the members 230 and 231 being broken almost simultaneously with the ending of the expansion of springs 41. Connected to the underside of the plunger 26 is one member 234 of a switch and opposite the contact member 234 is the other contact member 235 which is secured to the inside of the bottom of the machine. Circuit wires leading from each of these members connected with an electric lamp 236 immediately above the lamp 232 just described. Secured to the under side of the bracket 29 is a spring switch 237 which is designed to normally stand with its contact members spaced apart. Circuit wires connecting to the opposite terminals of this switch lead to an electric lamp 238 located below the lamp

232. Secured to the lower extremity of the screw 28 and extending laterally therefrom to a point in vertical alinement with a switch 237 is a finger 239 which is adapted to contact with the switch 237 when the screw is raised to the limit of its upward movement and to close the said switch indicating by the illumination of the lamp 238 that it has reached the limit of its upward movement. The switch members 230 and 231 are designed to contact at the first movement in an upward direction of the plunger 26, this movement being signaled to the operator by the lighting of the lamp 232. The switch members 234 and 235 are designed to contact when the plunger 26 reaches the limit of its downward movement, this being indicated by the lighting of the lamp 236. The lamp 232 will preferably be red, the lamp 236 white and the lamp 238 blue so that a glance will indicate to the operator the position of the plunger 26 at each operation of the machine. In Figs. 1 and 5 rollers 240 are shown mounted in the bottom of the compartment 14 and a slidable tray 241 made of heavy wire netting fastened to a frame, is adapted to rest upon the said rollers in position to be slid backwardly and forwardly into and out of the said compartment.

Referring now to Figs. 1, 4, 5 and 18 a flexible container 245 preferably formed of paraffin treated paper or the like is shown, the container is rectangular and is formed with a reinforcing strip 246 of heavy paper or the like about its upper edge. The bottom is likewise formed of heavy paper and has a reinforcing strip 247 connecting it to the side walls. A longitudinal strip 248 secured to the under side of the bottom of the container and thence upwardly along one side extends slightly above the top and terminates in a tap 249.

A substantially U-shaped carrier 250 of the exact width to receive the container 245 is shown in Fig. 19. The upper ends of the said carrier are rolled, as at 251, to afford a means for gripping the said carrier to lift it. The containers 245 thus formed are collapsible when empty and are designed to be filled with ice cream by the ice cream manufacturer after the common method now employed in ice cream factories in filling cans, i. e., the semi-frozen ice cream commonly known as "slush" is run into the container, which is placed in a square can and is then placed in what is known as a hardening room, where the container remains until the ice cream has frozen to the desired hardness. It is then removed from the square can by the tab 249 and placed in one of the carriers 250 to be delivered to the retailer. As shown in the drawings my machine is designed to hold five of these five gallon containers, one being removed from its carrier and placed

upon the secondary plunger 40 in the casting 17, the remaining four being left in their respective carriers and placed upon the sliding shelf in the storage compartment 14. A door 5 252 is provided to close the entrance to the said compartment 14. The door 18 is provided with an outwardly extending rod 254 and when the said door 18 is raised into vertical position to close the open side of the casting 17, the rod 254 projects outwardly to 10 contact with the inside of a door 255 which is arranged to close the entrance to the compartment in which the casting 17 is located. It will thus be seen that when the door 255 15 is closed its pressure against the rod 254 will hold the door 18 firmly in position effecting an air-tight joint with the casting 17. A door 256 is located in the top of my machine and is adapted when opened to give entrance 20 to the ice spaces. All of the doors 252, 255 and 256 are formed with the usual rabbeted edges commonly used on refrigerator and ice box doors, the said rabbeted edges fitting into similar rabbeting about the apertures 25 which the doors are designed to close.

In the practical operation of my machine the lid 256 is raised and cracked ice and salt is packed into the spaces designed for this purpose. The motor 85 is then set in motion 30 and through the worm 84 and worm gear 82 meshing therewith drives the pinion 66 counter clockwise. The pinion 65 meshing with the pinions 66 is in turn driven, rotating the worm 59 in the direction of the arrow Fig. 2. The operating handle 79 is then lifted 35 to bring the rotating worm into mesh with the worm gear 57, which being fixed to the same shaft on which the gear 52 is mounted drives the gear 52 in the direction indicated 40 by the arrow. The gear 52 meshing with the gear 51 causes the sprocket 49 to be driven clockwise and through the medium of the chain 50 and sprocket 47 drives the shaft 45, carrying the pinion 46 to rotate the bevel 45 gear 36, which gear being internally threaded to fit the screw 28 causes the said screw, together with the plungers 26 and 40 to descend within the casing 17. When the plunger 26 has reached the limit of its downward movement the members 234 and 235 of the switch contact, signaling to the operator 50 by the illuminating of the lamp 232, who then releases the operating handle 79 allowing the worm 59 to be forced out of mesh by the roller 71 operating on the bracket 72 under the tension of the spring 77. The door 255 is then swung open and the door 18 then lowered into the position shown in Fig. 1, 55 exposing the interior of the casting 17. One of the containers 245 filled with unflavored ice cream is then placed upon the secondary plunger 40, the door 18 closed and the door 255 swung against the rod 254 and latched. For the sake of argument we will assume 60 that a customer desires to purchase 10 cents

worth of chocolate ice cream. The clerk operating the machine will then first swing the handle above the plate 108 bearing the figure 10, that is the handle 105, about one-fifth of a turn in the direction indicated by 70 the arrow on Fig. 1. This operation of the handle 105 causes the rod 109 attached thereto to move the disk at its rear end which movement of the disk rocks the bell crank levers 119, 126 and 96, throwing into engagement 75 the members 99 and 101 of the clutch and starting the rotation of the shaft 92 and the movement of the traveling carriage 140, all as previously described. Simultaneously with the operation of the handle 105, the 80 handle 79 is depressed bringing the worm 59 into mesh with the worm gear 58 which causes the gear 36 to be rotated to feed the screw 28 carrying the plunger 26, upwardly. The upward movement of the plunger will 85 cause the coiled springs 41 to be contracted, allowing the members 230 and 231 of the switch to contact, signaling the operator by the illumination of the red lamp 232 that the springs 41 have completely depressed. 90 The secondary plunger 40 under pressure of the compressed springs 41 will thus exert an even pressure against the bottom of the container 245. The container being formed of paper or other flexible material will begin to 95 collapse under the pressure of the plunger when the container reaches the point C, Fig. 4, and will be held from further upward movement by the inclined walls and to force its contents upwardly against the inclined 100 walls of the casting 24 whence it will be directed into the cylindrical portion 25 of the said casting, in which is located the worm conveyer 161, now being rotated through the medium of the meshing of the gears 156 105 and 157 which cause the worm 158 on the shaft 155 to drive the worm gear 159 carried by the shaft 160 on which the worm conveyer is mounted. The worm conveyer will then begin to force the ice cream through 110 the tube 162 and against the honeycombed arrangement of the hexagonal tubes in the shredding cut-off block 180. A glass or dish such as is commonly used for serving ice cream is now placed on the floor portion 178 115 of the compartment opening in from the front of the machine to the face of the shredding cut-off block, the location of the said dish being shown at A in Fig. 4. The inclined front face of the shredding block will 120 cause the shreds of ice cream forced through the tubes 182 to assume a semi-vertical position after emerging. When the 10 cents worth of ice cream ordered by the customer has been fed through the shredding cut-off 125 block, the traveling carriage 140 will have reached the point where the roller 146 will contact with the ear 112 to return the disk 111 to normal position. This, as previously described, permits the bell crank levers 119, 130

126 and 96 to be restored to normal position by their respective springs, disengaging the members 99 and 101 of the clutch, thereby stopping the rotation of the shafts 92 and 155. It is obvious that when the shaft 155 ceases to rotate the worm gear 159 driving the worm conveyer 161 will also cease to rotate and therefore no more than the exact 10 cents worth of ice cream will be fed through the shredding cut-off block. The handle 187 connected to the sliding plate 185 on the inner edge of which is formed the knife 186, is now given a pull toward the machine by the operator, the said knife passing over the face of the shredding cut-off block 180, thus severing the shreds of ice cream and allowing them to drop in a vertical position into the dish. The said dish is then placed upon a shelf in the position indicated at B in Fig. 1 beneath the nozzle 201 connected to one of the syrup cans 190, which contains chocolate flavoring syrup. The handle 196 connected to this syrup can is then operated to discharge a quantity of the said chocolate syrup through the nozzle 201 and on to the ice cream in the dish. The shreds of the ice cream having been deposited in the dish to stand vertically will allow the syrup to work downwardly between them, thus thoroughly flavoring the entire mass within the dish and since the syrup can be and is kept at the exact temperature of the ice cream, it does not cause the ice cream to melt when it comes in contact therewith.

It will thus be seen that since each can contains a different flavoring syrup an extensive variety of flavors of ice cream can be served. In the drawings I have shown my machine constructed with four of the syrup cans and dispensing nozzles therefor, but it is obvious that the machine could be designed for a very large number. I have also shown but four of the mechanism units to be operated by the handles such as 104, 105, 106 and 107 for delivering 15 cents worth, 10 cents worth, 5 cents worth and a soda portion indicated by "S," respectively, but these mechanism units could also be duplicated in great number giving the machine a greater range.

When the container 245 that was placed in the casting 17 has been totally collapsed and its entire contents discharged therefrom the plunger 40 will necessarily have reached the limit of its upward movement as will also the screw 28, at which time the finger 239 secured to the bottom of the said screw will come into engagement with the switch 237 closing the spaced contact members and signaling the operator by the illumination of the lamp 238 that the dispensing mechanism needs refilling. The handle 79 is then operated to return the plungers to the position at the bottom of the casting and a full container is then taken from the compartment

14, removed from its carrier 250 and placed in the casting 17 from which the collapsed container has now been removed.

It will very often be desirable to use my machine in conjunction with factory flavored ice cream. When this is the case the containers 245 will be filled with flavored ice cream at the factory, the said containers being placed in the machine in the usual way. It will, however, be unnecessary to provide the shredding block when preflavored ice cream is being used and I therefore substitute a block shown in Figs. 10 and 11 in the drawings and indicated at 260. This block is adapted to fit in the same manner as the block 180, but has no hexagonal tubing secured in its central aperture. The aperture 261 is of the same diameter as the interior of the portion 162 and the sliding cut-off 262 it will be seen is at right angles to the longitudinal axis of the worm conveyer. A plate 264 hinged at 265 to the front of the cut-off block is adapted to be secured in raised position by the spring latch 266. It will be noted that the aperture 267 through the hinged plate is frusto-conical with the larger diameter of the frustum on the front side of the plate. A plurality of pins 268 secured about the periphery of the aperture 267 are designed to act as guides for the ice cream, which with the use of this cut-off block will be fed from the machine in the form of a core with a central aperture therein formed by the shaft 160. The core as it emerges from the cut-off block will be supported by the pins 268, and when the operation of the machine has ceased after having fed the proper portion of ice cream out upon the said pins, the cut-off handle 187 is then operated to slide the knife 262 severing the core, the latch 266 is released by the operator, permitting the hinged plate 264 to drop forward, the core held between the said pins sliding down and into a dish placed to receive it. By reason of the frusto-conical opening in the plate 264 the core will be of slightly smaller diameter than the circle formed by the pins 268 and should therefore slide freely off of the pins when the plate has been dropped forward to bring them into a vertical position. If, however, the core should for any reason cling to the pins 268 when the plate 264 has been swung to drop it into the dish, the spring pressed plunger 269 fitted through a sliding collar 270 on one of the pins 268, can be forced into the core and held thus while the collar 270 is slid downwardly toward the outer end of the pin 268. It will be seen that this will effectually force the core to be released by the pins and will then fall into the dish or other receptacle. The collar 270 will then be returned by the spring 271. The core thus formed may now either be served as plain ice cream or in the form known as a "sun-

dae", this being a dish prepared by covering the ice cream with crushed fruits, fruit juices, preserves or the like and it will be readily seen that the aperture formed through the core of ice cream by my machine is ideally adapted to be filled with the crushed fruit or syrup. When crushed fruits are used as just described the syrup cans 190 will be employed to hold them, in which case the perforated plates in the nozzle 201 will be removed, the valves 202 and 192 being of sufficient diameter to allow crushed fruits to pass through them.

When the containers of pre-flavored ice cream are being used a number of different flavors can be kept in stock in the storage compartment 14 and by virtue of the shelf 241 the containers can be readily slid from the storage compartment and the container 20 holding the desired flavor, selected.

It will also be noted that the carrier 250 is the only returnable equipment that it is necessary for the manufacturer of ice cream to leave with the retailer. It will of course be understood that the paper container when once collapsed, emptied and removed from the machine is thrown away. It is therefore unnecessary for the manufacturer to leave expensive cans, packing tubs and the like. By reference to Fig. 4 of the drawings it will be understood that the upward movement of the plunger 40 ceases at the line indicated at C which is the point where the side walls of the casting 24 begin to taper inwardly so that each time the screw 28 is reversed to draw the plunger downwardly, the space above the line C in the casting 24 and about the worm conveyer will be left packed solid with ice cream. When a fresh container is placed in position upon the plunger the space between the top of the container and the bottom of the ice cream left packed in the casting 24 will be filled with air when the door 18 has been closed and locked into position and in order to expel this air the valve shown in enlarged detail in Fig. 13 and previously described is provided. It will be noted that in open position the head of the valve extends into the path of upward movement of the filled container and remains in such position until the upper edge of one side of the container contacts with the inclined face presented by the head of the valve, forcing it closed against the tension of the spring 172 as the said container moves upwardly. It will thus be seen that the valve will not be entirely closed until the top surface in the full container has contacted with the bottom surface of the ice cream remaining in the casting 24, therefore preventing an air pocket forming in the ice cream when it is fed into the worm conveyer.

It will also be noted by reference to Fig. 4 that the portion of the worm conveyer lo-

cated within the tube 162 is provided with a forwardly projecting flange portion 163 on the front of which a knife edge is formed, this flange portion being in contact with the interior of the said tube and being adapted to effectually force the ice cream forward through the tube by pocketing it so to speak and scraping it away from the inside of the said tube.

From the foregoing description of my machine it will be obvious that I handle the ice cream in a thoroughly sanitary and cleanly manner, remove the possibility of ptomaine poisons forming through contact with the metal can of acid fruit flavored ice cream. The only place in my machine where the ice cream at any time comes in contact with metal is the interior of the casting 24 and the worm 161 and as set forth in these specifications a lining of non-corrosive metal is applied to the inside of the said casting and the worm conveyer 161 and its shaft 160 are either formed of non-corrosive metal or heavily plated with the same.

It will also be apparent that in my machine the flavoring syrups will never come in contact with the air until the said air has been purified by the air washing system, thereby eliminating the possibility of dust, foul air, etc., being sucked into the syrup containers to displace the syrup withdrawn. My method of handling the ice cream itself also eliminates the unsanitary and uncleanly process of dipping into the can with a spoon or scoop, which is generally kept in a receptacle filled with wash water, which water becomes filthy after a few minutes use and is entirely unfit to rinse utensils used for handling eatables. Another unsanitary feature of dispensing ice cream, eliminated by my machine which is always present with the use of the ordinary ice cream can is that the removal of the cover to the said can for the purpose of dipping out ice cream will permit the foul air from the ice cream tub, the wood of which is very frequently in an advanced stage of decay, to enter the can and contaminate the ice cream therein.

Another decided advantage gained by the use of my machine is that the manufacturer of the ice cream is not required to leave expensive cans, etc., with the retailer, whose clerks frequently misuse the said cans, permitting them to become battered and rendered unfit for further service. The only returnable equipment which the manufacturer leaves is the carrier 250 which can be formed of any cheap sheet metal at little expense to the manufacturer.

The brine circulating system in my machine also makes practical use of the brine formed by the melted ice and salt, which is usually drained from the packing tub under ordinary methods and run into the sewer. A great saving is therefore effected in the

amount of ice to refrigerate a given amount of ice cream at the proper temperature as 50% less icing is required than with the ordinary ice cream tubs. A big saving is also effected in the ice cream itself by preventing it from coming in contact with the air as is the case when the ice cream is kept in a can and dipped out. Actual test has proven that the 25% shrinkage which occurs when the can and tub system of storage is employed is entirely eliminated with my machine.

Having fully described my invention what I claim as new and desire to secure by Letters Patent, is:

1. In a machine for dispensing ice cream, an insulated box, a worm conveyer mounted to rotate within the said box, means for forcing ice cream into engagement with the said worm conveyer, a tubular member fitting about one portion of the worm conveyer, laterally extending flanges formed integral with said worm conveyer for its entire length within the said tubular portion and lying adjacent the said tubular portion, the said lateral flanges having sharpened forward edges adapted to scrape the ice cream from the interior portion as the worm conveyer is rotated to force the ice cream through the said tubular portion.

2. In a machine for dispensing ice cream, an insulated box, a worm conveyer set at an angle within the said box, a tubular member inclosing one portion of the said worm conveyer, means for forcing ice cream into engagement with the said worm conveyer and means for rotating the worm conveyer to force the ice cream through the said tubular member, means upon the said worm conveyer and within the tubular portion for scraping the ice cream from the interior of the said tubular portion as the worm is rotated, a sliding knife located at the outlet to the said tubular portion, the said knife being adapted to be moved over the outlet to the said tubular portion to sever the ice cream which has passed through the said outlet from that remaining within the tubular portion.

3. In a machine for dispensing ice cream, an insulated box, a worm conveyer located within the said box, a tubular member fitting about one portion of said worm conveyer, means for bringing ice cream into forced engagement with the said worm conveyer, means for rotating the worm conveyer to force the ice cream through the said tubular member, a cut-off block arranged at the outlet end of the said tubular member, a centrally located aperture located within the said block, said aperture registering with the tubular member, means within the said aperture adapted to shred the ice cream as it is forced therethrough from the outlet to the tubular member, a

knife slidably mounted upon the said cut-off block and adapted to be moved to sever the portion of ice cream fed from the said shredding means.

4. In a machine for dispensing ice cream, an insulated box, a worm conveyer within said box, a tubular member fitting about a portion of the said worm conveyer, means for forcing ice-cream into engagement with the said worm conveyer, means for rotating the said worm conveyer to force the ice cream through the said tubular member, a cut-off block arranged adjacent the outlet end of the said tubular member, an aperture centrally located within the said cut-off block and designed to register with the said tubular member, a plurality of tubes located within the said aperture and designed to shred the ice cream forced through the said tubular member and into engagement with the said cut-off block and a knife slidably mounted upon the face of the said cut-off block to sever the portion of the said shredded ice cream that has been forced through the said tubes.

5. In a machine for dispensing ice cream, a box formed with non-heat conducting walls, a chamber arranged within the said box, a plunger adapted to move vertically within the said chamber and to force ice cream placed within the said chamber into engagement with a discharge conveyer, means connected to the said plunger for signaling the operator of the said machine when the plunger has reached the limit of its upward movement.

6. In a machine for dispensing ice cream, a box formed with non-heat conducting walls, a vertical chamber within the said box, a plunger fitting within the said chamber, a screw attached to the said plunger, means engaging the said screw for lifting the said screw and the said plunger within the said chamber and means attached to the said machine and the said screw and adapted to cooperate to signal the operator of the said machine when the said plunger has reached the limit of its upward movement.

7. In a machine for dispensing ice cream, a box formed with non-heat conducting walls, a rectangular chamber arranged vertically within the said box, a rectangular plunger fitting within the said chamber, a collapsible receptacle adapted to hold ice cream and to be placed within the said chamber and upon the said plunger, a worm secured to the bottom of said plunger and means for lifting the said screw to force the said plunger upwardly and to collapse the said container to discharge the ice cream therefrom, an electric switch secured beneath the said machine and adjacent the said screw, an engaging finger secured to the said screw and in vertical alinement with said electric switch, the said engaging finger be-

- ing adapted to contact with the said electric switch to force the contact points of the said switch into engagement when the plunger has reached the limit of its upward movement and has discharged the contents of the collapsible receptacle placed thereon, circuit wires attached to the opposite contact points of the said switch, the said circuit wires leading through a suitable source of electric current to an electric lamp located upon the said machine, the said lamp being adapted to be illuminated when the said switch is closed by engagement of the said engaging finger.
8. In a machine for dispensing ice cream, a box formed with non-heat conducting walls, a chamber arranged vertically within the said box, a plunger fitting within the said chamber, a screw secured to the said plunger, means engaging the said screw for raising and lowering the said plunger within the said chamber, means cooperating with the said plunger to signal the operator of the said machine when the said plunger is at the limit of its downward movement.
9. In a machine for dispensing ice cream, a box with walls formed of non-heat conducting material, a chamber arranged vertically within the said box, a plunger fitting within the said chamber, a screw secured to the said plunger, means cooperating with the said worm to raise and lower the said plunger within the said chamber, one member of an electric switch mounted upon the under side of the said plunger, a second member of an electric switch mounted upon the interior of the said machine in alignment with the said first member and adapted to engage the said first member to close the circuit through a source of electric current to a lamp located upon the exterior of the said machine to signal the operator when the plunger has reached the limit of its downward movement.
10. In a machine for dispensing ice cream, a box formed with heat insulating walls, a vertical chamber arranged within the said box and adapted to have placed therein a collapsible container filled with ice cream, a plunger fitting within the said chamber, a screw connected to said plunger, means cooperating with the said screw to move the said plunger vertically within the said chamber and to collapse the said container during its upward movement, an electric signal system arranged to signal the operator of the machine when the said plunger is at either the limit of its upward or downward movement.
11. In a machine for dispensing ice cream comprising a box formed with heat insulating walls, a chamber arranged within the said box, a plunger fitting within the said chamber and adapted to have placed thereon a collapsible container filled with ice cream, a second plunger spaced beneath the said first plunger and having a screw secured to its under side, means cooperating with the said screw to force the said second plunger upwardly within the said chamber, means interposed between the said first plunger and the said second plunger to transmit the force of the upward thrust of the said second plunger to the said first plunger and to maintain a pressure against the said first plunger after the said second plunger has ceased to move upwardly by the operation of the said worm.
12. In a machine for dispensing ice cream comprising a box formed with heat insulating walls, a chamber arranged within the said box, a plunger fitting within the said chamber and adapted to have placed thereon a collapsible container filled with ice cream, a second plunger spaced beneath the said first plunger and having a screw secured to its under side, means cooperating with the said worm to force the said second plunger upwardly within the said chamber, springs interposed between the said first plunger and the said second plunger and adapted to be compressed by the upward movement of the said second plunger and to maintain an upward pressure against the said first plunger after the said second plunger has ceased to move upwardly and an electric signaling means cooperating between the said first plunger and the said second plunger to indicate to the operator when the said springs have ceased to expand to move the said first plunger upwardly.
13. In a machine for dispensing ice cream, a box formed with heat insulating walls, a shaft rotatably mounted within the said box, means for rotating said shaft, one member of a clutch carried by said shaft, a screw carried by said shaft, a traveling carriage slidably mounted above said shaft, a bolt slidably mounted within the said carriage, and engageable with the screw upon the said shaft, a plurality of operating handles located upon the outside of said box, a rod attached to each of said handles and extending within the said box, a disk carried by each of said rods, a stop located upon each of said disks and adapted to be moved into the path of travel of the said carriage when the said operating handle attached to said rod is moved into operating position, a pair of oppositely extending arms pivotally connected to each of said disks, a pair of pivotally mounted bell crank levers, the said oppositely extending arms being each connected to one of said bell crank levers, rollers carried by the said bell crank levers, a vertically movable rod engaged by one of said rollers at each of its extremities, the said bell crank levers adapted to be moved when each of the said disks is moved by its operating handle, the said bell crank levers when

so moved being adapted to force the vertically movable rod downwardly and to cause the said bolt within the traveling carriage to engage the worm upon the said rotatable shaft, means connecting to one of said bell crank levers for bringing the member of the clutch carried by the said rotatable shaft into engagement with the means for rotating said shaft, the said shaft when so rotated being adapted to move the traveling carriage into engagement with the stop upon the said disk moved into operating position and to return said disk and bell crank levers to normal position and to disengage the members of said clutch to stop the rotation of said shaft and means connecting the said shaft with a discharge mechanism for feeding ice cream from the said machine.

14. In a machine for dispensing ice cream, a box formed with heat insulating walls, a chamber located within said box and adapted to have placed therein a collapsible container filled with ice cream, a worm conveyer located to rotate through the upper portion of said chamber, a plunger fitting within said chamber and vertically movable therein and adapted to collapse the container within the said chamber and to force the ice cream therein from the said container and into engagement with the said worm conveyer, a

storage compartment adapted to receive containers filled with ice cream, a brine tank located above said worm conveyer and said chamber, a second brine tank located above said storage compartment, a brine tank surrounding said storage compartment and said chamber and adapted to be filled with cracked ice and salt, a brine pump located within said brine compartment, a pipe connecting to said brine pumps and said brine tank above said worm conveyer and said chamber and adapted to force the brine resulting from said cracked ice and salt upwardly and through said pipe and into said brine tank, the said brine being adapted to overflow into said tank above said storage compartment and a discharge pipe connected to said brine tank above said storage compartment for directing the brine overflow into said tank to a point of discharge.

15. In a machine for dispensing ice cream, a container adapted to be filled with ice cream, an electric signal system, arranged to indicate when the said plunger has reached either limit of its movement and also to indicate when the said plunger begins to force the ice cream from the container.

In testimony that I claim the above, I have hereunto subscribed my name.

JAMES W. KENNEDY.