Jan. 23, 1923. 1,442,820

H. L. PERCY.
ICE CREAM PACKING MACHINE.
FILED APR. 10, 1922. 3 SHEETS-SHEET 1

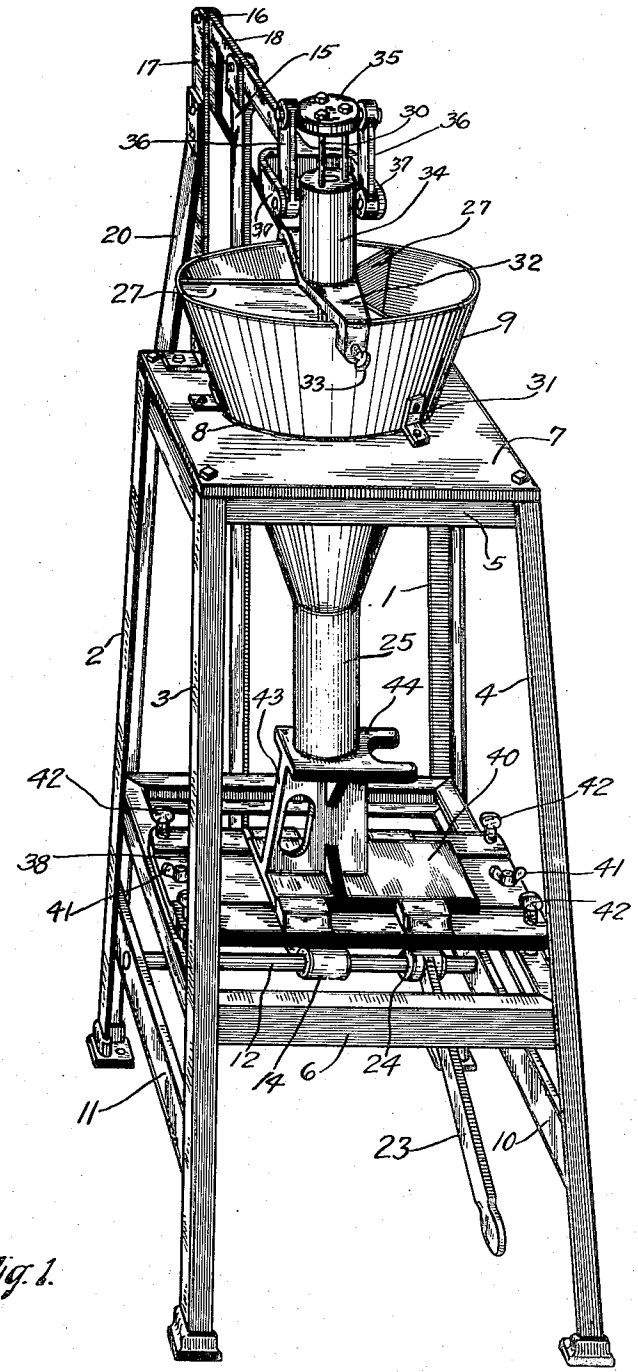


Fig. 1.

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By A. J. O'Brien
attorney

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3 SHEETS-SHEET 2

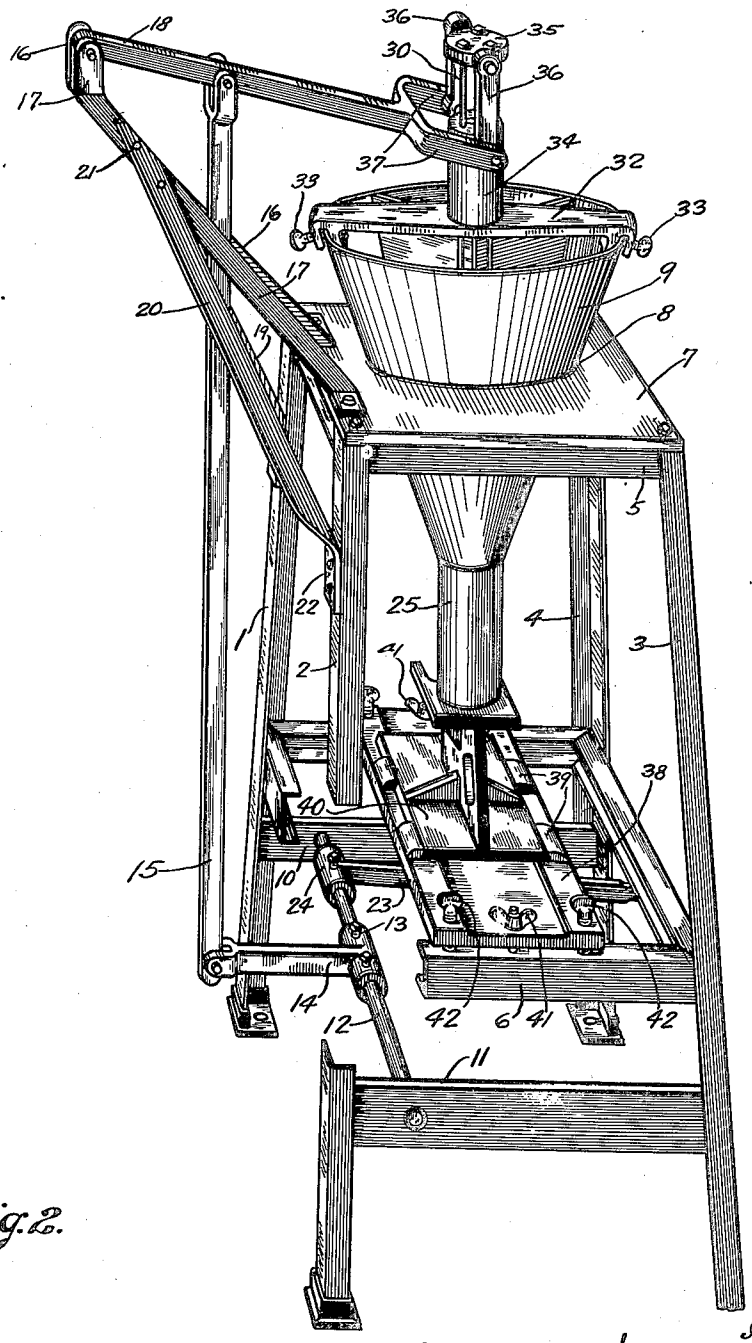


Fig. 2.

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H. L. PERCY.
ICE CREAM PACKING MACHINE.
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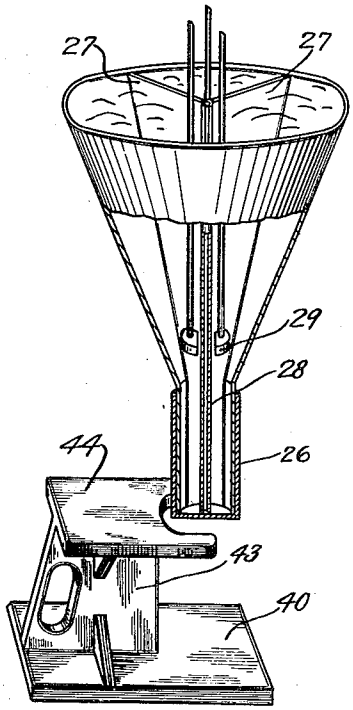


Fig. 3.

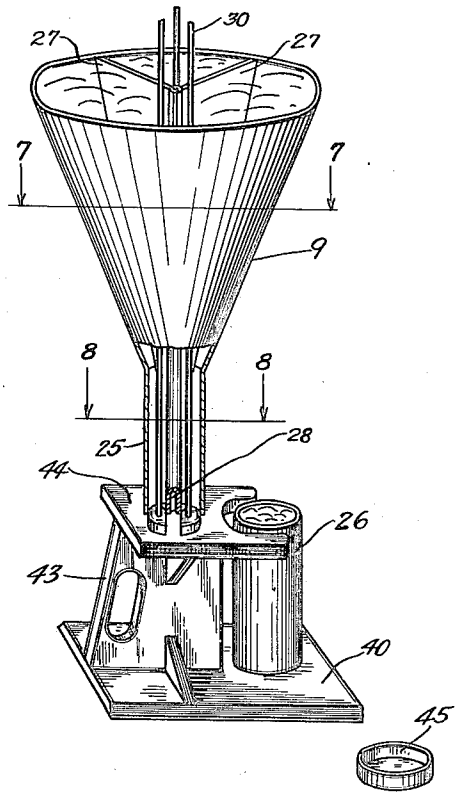


Fig. 4.

Fig. 5.

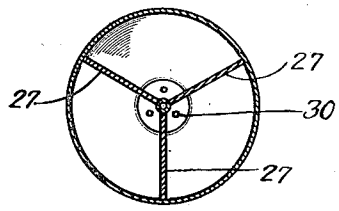


Fig. 7.

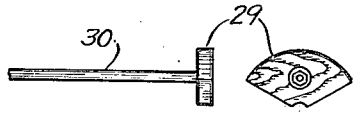


Fig. 6.

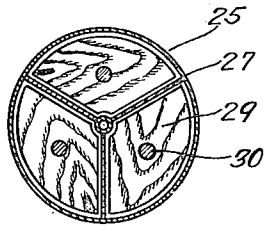


Fig. 8.

Inventor
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Attorneys

Patented Jan. 23, 1923. 1,442,820

UNITED STATES PATENT OFFICE.

HARLAND L. PERCY, OF DENVER, COLORADO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE PERCY MANUFACTURING COMPANY, OF DENVER, COLORADO, A CORPORATION OF COLORADO.

ICE-CREAM-PACKING MACHINE.

Application filed April 10, 1922. Serial No. 550,998.

To all whom it may concern:

Be it known that I, HARLAND L. PERCY, a citizen of United States of America, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Ice-Cream-Packing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to machines for filling containers with a semi-fluid material such as ice cream.

In vending ice cream it has been found desirable under certain circumstances to pack the same in paper cartons or boxes which may be of either circular or rectangular cross section and provided with a cover. The cream when it is packed into the containers is usually semi-fluid or of the consistency of whipped cream. When the boxes have been filled with cream the cover is placed thereon and the container subjected to a low temperature which causes the cream to harden.

It is the object of this invention to produce a machine whereby the cartons may be quickly and conveniently filled with ice cream and in which the filling takes place from the bottom of the box and is accomplished by positive means.

In order to more clearly describe my invention, I shall have reference to the accompanying drawing in which

Fig. 1 is a perspective view of my machine.

Fig. 2 is a perspective view seen from a different angle than that shown in Fig. 1 and with parts thereof broken away.

Fig. 3 is a view of a portion of my machine with parts broken away to more clearly show the operation thereof.

Fig. 4 is a view similar to Fig. 3, but showing the carton filled and the cream cut off.

Fig. 5 is a perspective view of the cover for the box.

Fig. 6 shows a side and end view of one of the plungers.

Fig. 7 is a section on line 7—7 Fig 4 and Fig. 8 is a section taken on line 8—8 Fig 4.

The same reference numerals will be used to indicate the same parts throughout the several views. My machine is preferably supported on a framework comprising legs 1, 2, 3, and 4, which are held together at their upper end by bars 5 and near their lower ends by channels 6. A plate 7 is secured to the top of the framework and is provided centrally thereof with a circular opening 8 which serves to receive the conical container 9, which serves as a reservoir for the ice cream. Secured to legs 1, 4, and 2, 3, are flat straps 10 and 11 which serve as bearings for the end of rod 12. Clamped to rod 12 by means of set screws 13 is an arm 14 to the end of which is pivotally connected a rod 15. Secured to the top 7 are a pair of bars 16 and 17 between the upper ends of which is pivoted an arm 18. Bars 19 and 20 are bolted to bars 16 and 17 as indicated at 21, and have their lower ends bolted or riveted to legs 1 and 2, as indicated at 22. The upper end of connecting rod 15 is pivoted to arm 18 at a point spaced a short distance from its pivot. A handle 23 is clamped to bar 12 by means of a set screw 24 and serves to rock the arm 14 and the arm 18 in a manner obvious from the drawing.

The reservoir 9 has a cylindrical portion 25 which extends downwardly a distance substantially equal to the depth of the paper carton 26 that is to be filled. The reservoir 9 and cylindrical portion 25 are divided into three sections by means of the vertical partition 27 which extend to the lower end of member 25. Centrally of cylindrical member 25 and the reservoir 9 is a pipe 28 which serves as a vent through which the air escapes from the carton. Within each compartment formed by the partitions 27 is a plunger consisting of a hardwood piston member 29 secured to the end of a rod 30. Reservoir 9 is securely fastened to the plate 7 by means of brackets 31 and has secured to its upper edge a transverse member 32 which is clamped in place by means of screws 33. Centrally of member 32 there is a vertically extending cylindrical member 34 through the top of which the rods 30 extend. The upper ends of rods 30 extend through a disk-like member 35 to the sides of which short connecting rods 36 are connected. The lower ends of rods 36 are pivoted to the

forked ends 37 of arm 18. From a consideration of the structure above described it will be apparent that by means of the handle 23 the arm 18 may be oscillated about its pivot and the plunger rods 30 and attached pistons 29 reciprocated.

Secured to two opposite members 6 is a plate 38 which has on its upper surface a pair of spaced lugs 39 which serve as guides for the plate 40. Centrally of each end of plate 38 is a clamping screw 41 while in each corner is a leveling screw 42 by means of which the exact level and height of plate 38 may be determined. Plate 40 has centrally thereof a vertical member 43 on the top of which is a plate 44 whose upper surface is adjusted in such a manner that when it occupies the position shown in Fig. 4 it will form a sliding contact with the lower edge of tubular member 25 and it therefore acts as a cut-off in a manner to be hereinafter described.

In operating my device the plate 44 is moved into the position shown in Fig. 4 and cream of the consistency in which it comes from the mixer is poured into the reservoir 9. If separate flavors are desired a different flavor may be put into each one of the three compartments. The plate 44 is then withdrawn to the position shown in Fig. 3 and the paper carton 26 slipped over the cylindrical member 25. The air will escape upwardly through vent pipe 28.

With the paper carton in place the handle 23 is pressed downwardly: this raises the pistons 29 to the position shown in Fig. 3, and permits the cream to flow downwardly and fill the inside of the cylindrical portion 25. The handle 23 is now raised and this forces the pistons 29 downwardly and causes the cream to be extruded from 25 into carton 26 the box or carton 26 moving downwardly as fast as the cream is forced thereinto until it finally rests on the top of plate 40. The operator then grasps member 43 and moves plates 40 and 44 to the right until the position shown in Fig. 4 is reached when the cover 45 is applied to the box and it is removed. Another box is then put in place, plate 44 moved to the position shown in Fig. 3, the box slipped on to the cylindrical member 45, and operation repeated. Where it is desired a box may be filled with three different flavors as explained above. The reciprocation of the pistons 29 serves to mix the cream and if parts should melt faster than others the action of the pistons will be to cause the thin part to become mixed with the colder portions. The pistons 29, when they are in the position shown in Fig. 4 and in fact when they occupy any position within the tubular member 25, act as stops and prevent the cream from flowing downwardly. It is evident that since the pistons 29, when they are in the position shown in Fig. 4, prevent the cream from flowing, that the cut off table 44 may be dispensed with, and this is often done in practice. I also wish to point out the fact that I fill the box from the bottom up and that the cream will therefore pack solidly. A small air leak in the box or between the box and tubular member 25 will not interfere with the packing as the cream is positively forced into the box by the action of the pistons 39.

Although I have shown my machine as operating in connection with circular boxes it is evident that the part 25 as well as the reservoir 9 may be made of any desired cross section such as square or rectangular.

Having now described my invention what I claim as new is:

1. In an ice cream packing machine, in combination, a reservoir adapted to contain cream in a semi-liquid form, a tubular member of uniform cross section throughout its length extending from the reservoir, partition members extending through the reservoir and tubular member whereby they are divided into compartments, a piston in each compartment means for reciprocating the pistons from within the reservoir to the bottom of the tubular member and back, whereby the cream may be positively extruded.

2. An ice cream packing machine comprising, a supporting framework, a reservoir secured thereto, said reservoir having a tubular member of substantially constant cross section throughout its length extending downward therefrom, a plurality of partitions extending through the reservoir and the tubular member, whereby the same are divided into a plurality of compartments, a piston reciprocable in each compartment, means for reciprocating the pistons from a point within the reservoir to the end of the tubular member and an air vent extending from the bottom of the tubular member to the top of the reservoir.

3. An ice cream packing machine comprising, a supporting framework, a reservoir secured thereto, said reservoir having a tubular member extending downward therefrom, a plurality of partitions extending through the reservoir and the tubular member whereby the same are divided into a plurality of compartments, a piston reciprocable in each compartment, means for reciprocating the pistons, said means comprising a handle pivotally connected to the framework, an arm having one end pivoted to the framework and the other secured to the pistons, means connecting said handle and arm, an air vent from the lower end of the tubular member to the top of the reservoir, and a cut off plate adapted to be moved underneath the tubular member.

4. An ice cream packing machine com-

prising, a supporting framework, a reservoir secured thereto, said reservoir having a tubular member extending downward therefrom, a plurality of partitions extending through the reservoir and the tubular member whereby the same are divided into a plurality of compartments, a piston reciprocable in each compartment, means for reciprocating the pistons, said means comprising a handle pivotally connected to the framework, an arm having one end pivoted to the framework and the other secured to the pistons, means connecting said handle and arm, an air vent from the lower end of the tubular member to the top of the reservoir, a cut-off plate adapted to be moved underneath the tubular member, and means for adjusting the level of the cut-off.

5. An ice cream packing machine comprising a reservoir, a tubular member extending downwardly therefrom, a vent extending from the lower end of the tubular member, a plurality of partitions dividing the reservoir and tubular member into compartments, a piston in each compartment, means for reciprocating the pistons, and a cut-off adapted to be moved under the tubular member.

In testimony whereof I affix my signature.

HARLAND L. PERCY.