

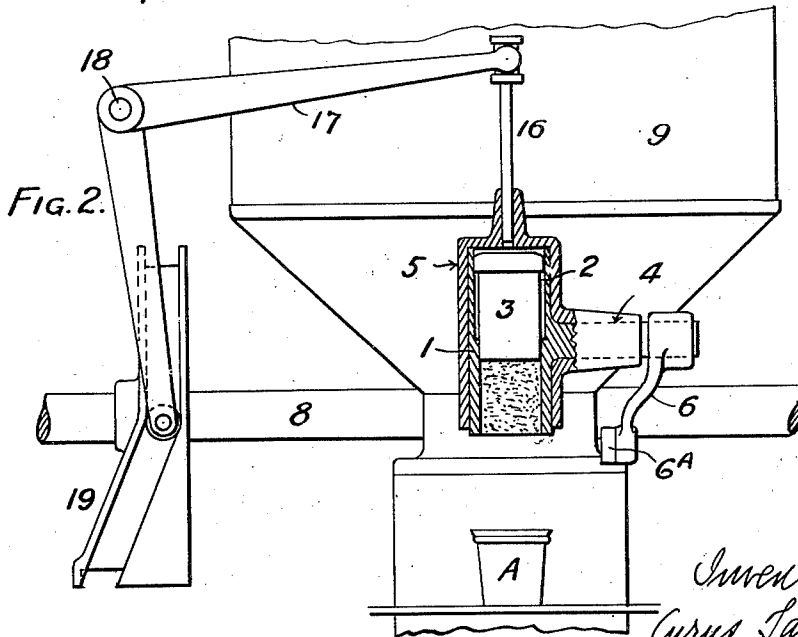
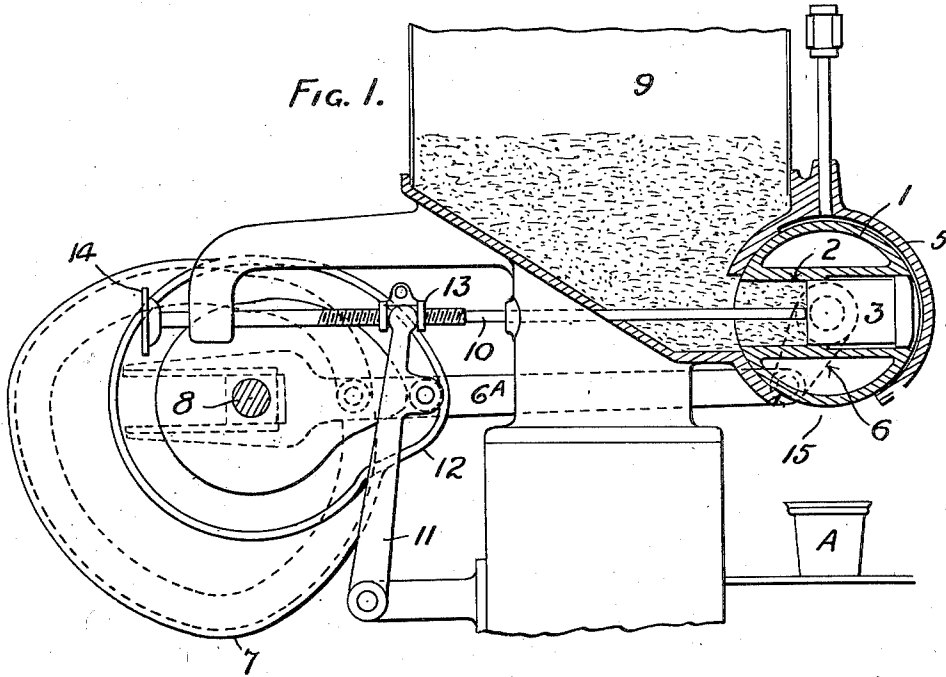
June 10, 1930.

C. TAYLOR

1,763,487

VALVE OR CONTROL MECHANISM FOR MACHINES FOR
FILLING MATERIALS INTO CONTAINERS

Original Filed June 30, 1926 2 Sheets-Sheet 1



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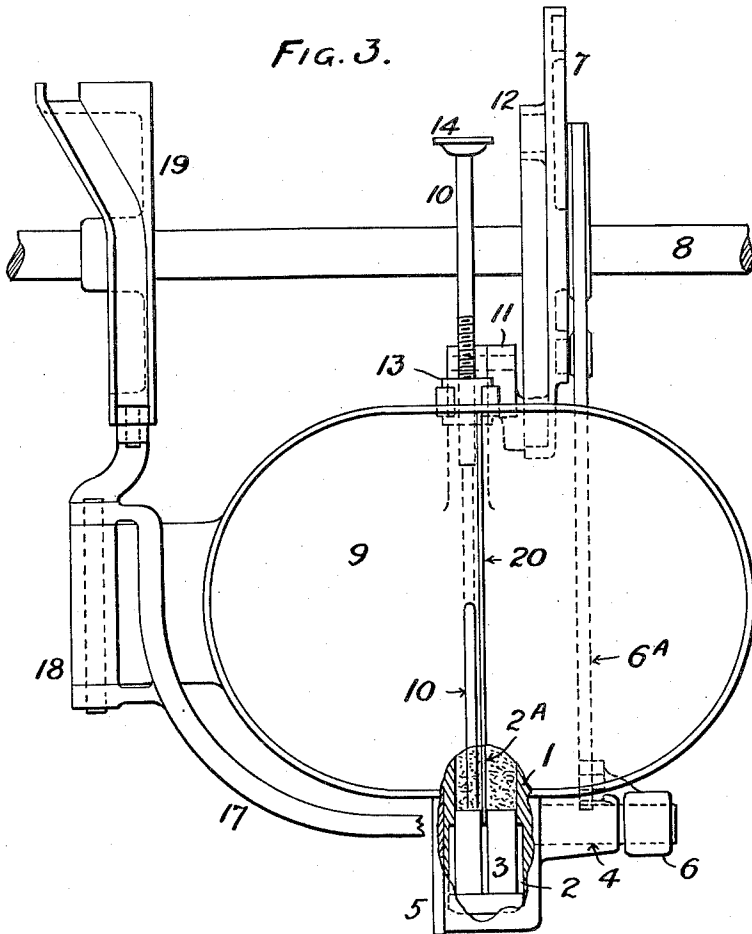
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UNITED STATES PATENT OFFICE

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VALVE OR CONTROL MECHANISM FOR MACHINES FOR FILLING MATERIALS INTO CONTAINERS

Application filed June 30, 1926, Serial No. 119,712, and in Great Britain May 26, 1926. Renewed January 31, 1930.

The object of this invention is to provide an improved valve or control mechanism for use in depositors or machines for filling ice cream or the like into containers in measured quantities, and which can be adjusted even during the operation of the machine.

The invention is illustrated in the accompanying drawings, in which

Fig. 1 is a sectional view showing the valve in the position just after taking a supply from the main tank or container;

Fig. 2 a view at right angles thereto showing the valve ready to discharge its contents into a receptacle, and

Fig. 3 a plan view showing the general arrangement of a machine embodying the invention according to a modification.

As will be seen by these drawings the valve 1 itself is of cylindrical form and has a transverse opening 2 (preferably of circular form) bored through it at right angles to its axis, in which opening a plunger 3 is capable of movement to and fro. The valve 1 is provided with a spindle 4 by which it can be rotated or oscillated through an angle of 90° in its casing 5. This movement may be effected in any suitable manner, that shown comprising the employment of a lever 6 connected to arm 4 and operated by arm 6A from a cam 7 on the main driving shaft 8 of the machine.

The casing 5 in which the valve operates is located at the lower end and towards the front of the reservoir 9 for the ice cream or other commodity to be filled into the containers, and through the rear of such reservoir 9 a rod 10 projects horizontally in line with the plunger (when the valve is in its first position) so that when advanced it can act on the latter. This rod 10 is operated to slide back and forth by means of a lever 11 operated by cam 12 on the driving shaft, such lever 11 engaging with a nut 13 through which rod 10 is screwed. The end of rod 10 does not normally bear against plunger 3 but comes in contact therewith during the forward travel, and the arrangement of the screwed part of such rod passing through nut 13 therefore enables the extent of the movement imparted to the plunger by the rod to be adjusted, and consequently

the amount of ice cream or other material sucked into the valve by such movement. Rod 10 is preferably provided with a head 14 by means of which it may be conveniently operated, and the nut 13 may be split and provided with a screw and wing nut so that when it has been correctly adjusted it can be fixed in position in relation to the operating lever 11.

As shown in Fig. 1 the plunger 3 has just been moved to its outward position in relation to the reservoir 9, and has sucked the proper quantity of material into the valve 1 behind it. The cam 7 is just about to come into action to cause the rotation of the valve to bring the plunger to the position shown in Fig. 2, with the opening 2 in a vertical line and the material that has been sucked into the valve ready to be discharged through the opening 15 in valve casing 5 into the receptacle A to be filled.

This discharge is effected by means of a rod 16 projecting through the upper part of casing 5, and operated by means of a lever 17 pivoted at 18 and actuated by a cam 19 on the main driving shaft 8. At the proper time the rod 16 is depressed and its lower end coming in contact with the plunger 3 pushes it down and thus ejects the material contained in the valve.

It will be seen that by the arrangements described the material to be filled into the containers or receptacles A is not at any time during the filling operation subjected to compression, this being a great advantage over known machines especially for some materials such as ice cream. As described above the material is drawn into the opening 2 in valve 1 by suction, and when it is being discharged therefrom it is simply pushed out, there being nothing to interfere with its free passage under the pressure imparted to the plunger by the rod 16.

In some cases, as for instance with ice cream, it may be desired to fill two different varieties or flavours into each receptacle A, and this is provided for by the insertion of a diaphragm or partition 20 in the reservoir 9 as shown in Fig. 3, which will divide such reservoir into two compartments. In this

case the opening 2 through the valve is also provided with a partition, as 2A, so formed and disposed that when the valve is in the receiving position it will form a continuation of the partition 20 in the reservoir, and the
5 plunger 3 is split longitudinally for a sufficient distance to receive the partition 2A, which will therefore not interfere with its to and fro movement.

10 In some cases it may even be desired to fill more than two varieties of material at a time into the receptacles A, and this can be provided for by the employment of a suitable number of partitions in the main reservoir 9 and valve opening 2. It will be seen
15 that if a different variety of material is supplied to each of the compartments of the reservoir 9, the required quantity of each will be drawn into the valve when the plunger 3 is pushed forward by rod 10.

When the reservoir 9 is provided with one or more diaphragms or partitions 20 as above described, it enables a very large variation in the quantity of material delivered to be
25 effected in the case where a single variety only is being dealt with, as the material can if desired be supplied only to one compartment of the reservoir, and by then reducing the amount of movement imparted to plunger 3 by rod 10 it will be seen that a comparatively small quantity of the material will be
30 drawn into the valve. If on the other hand the maximum quantity is to be deposited all the compartments of reservoir 9 will be supplied with the material, and the nut 13 adjusted to increase the movement of the plunger to its fullest extent.

What I claim and desire to secure by Letters Patent, is:—

40 Apparatus of the class described, comprising a reservoir having a discharge opening, a cylindrical casing to which said discharge opening leads, said casing also having a discharge opening, a valve mounted for oscillation in said casing and having a bore extending transversely therethrough, a plunger
45 in said bore, a pair of slidably mounted rods arranged respectively in line with the centers of the discharge openings of the reservoir and casing, means for operating said
50 rods, means for oscillating said valve and a common actuating shaft for said rod operating and said valve oscillating means.

55 In witness whereof I have signed this specification.

CYRUS TAYLOR.