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W. W. McWILLIAMS
FEED OR SUPPLY DEVICE

1,733,464

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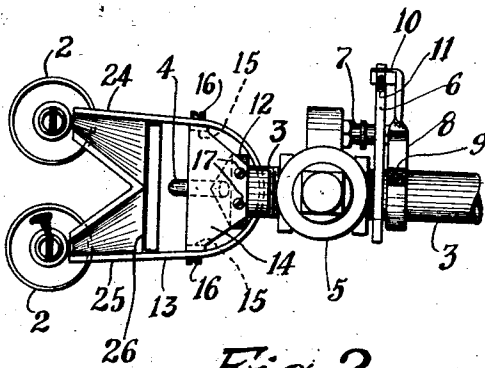


Fig. 2

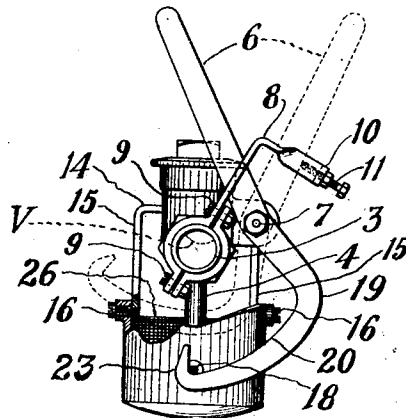


Fig. 3

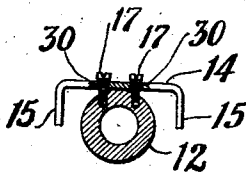


Fig. 4

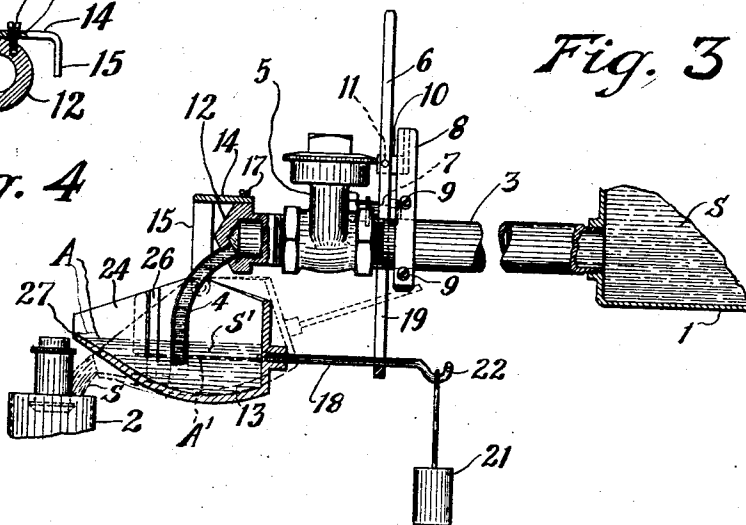


Fig. 1

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WILLIAM W. McWILLIAMS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THOMAS A. EDISON, INCORPORATED, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY

FEED OR SUPPLY DEVICE

Application filed February 5, 1923. Serial No. 616,936.

My invention relates to feed or supply devices and more particularly to devices especially adapted for intermittently feeding or supplying material in a liquid or molten state into molds or other containers. While not limited thereto, my invention is especially designed for the intermittent feeding or pouring of molten wax or wax-like material into the molds of apparatus for producing sound record tablets or blanks and in which the molds are successively brought to filling position, as in the molding apparatus shown and described in my copending application, Serial No. 616,935, filed February 5, 1923, and entitled Production of sound record tablets, which has resulted in Patent No. 1,528,121, dated March 3, 1925.

The principal object of my invention is to provide an improved device of this character whereby predetermined amounts of molten wax or wax-like material or other material may be intermittently fed or poured into molds or other containers without any appreciable quantity of air being entrapped in such material, especially where the latter is exposed to the open air during the feeding operation.

Another object of my invention is to provide in a device of this character a construction which insures an effectual and quick cut-off of the feeding or pouring of the material fed to the molds or other containers being filled at the end of each filling operation, and which prevents any appreciable quantity of such material flowing or dripping from the device after such cut-off.

A further object of my invention is to provide an improved feed or supply device having a plurality of discharge or pouring spouts adapted to deliver material to a plurality of molds or other containers and wherein the proportionate rates of flow of material from such spouts may be readily regulated so as to obtain, if desired, equal rates of flow from the spouts.

Other objects and features of my invention will be hereinafter more fully described and claimed.

In order that my invention may be more clearly understood, attention is directed to

the drawing accompanying and forming a part of this specification and in which:

Figure 1 is a view in side elevation, partly in section and partly broken away, showing a feed or supply device in accordance with my invention, arranged to deliver record material to molds for sound record tablets or blanks and connected to a tank or vat containing a supply of such material;

Figure 2 is a plan view of the device as shown in Fig. 1 with the tank or vat omitted;

Figure 3 is an end view of the feed or supply device, partly in section and partly broken away, looking from the right toward Fig. 2; and

Figure 4 is a fragmental view, partly in section, of a detail.

Referring to the drawing, reference character 1 represents a tank or vat containing a supply of molten wax-like material S adapted to be fed or poured into molds 2 for producing sound record tablets or blanks. A supply conduit 3 is connected to the tank 1 at one end and is provided at its other end with an outlet in the form of a downwardly directed discharge pipe 4. Intermediate its ends the conduit 3 is provided with a valve casing 5 containing a conventional form of quick acting gate valve V for controlling the passageway of said conduit. The valve may be opened and closed as by means of a lever 6 secured to a stem or rod 7 which is journaled in the valve casing 5 and constitutes a part of suitable valve-controlling means. With the lever 6 in the position shown in full lines in Fig. 3, the valve will be in closed position, and with this lever in the dotted line position (Fig. 3) the valve will be in open position.

Reference character 8 represents a bracket which is adjustably and rigidly secured to the conduit 3 adjacent lever 6, as by means of a split sleeve at one end of the bracket and bolts 9. This bracket is provided with a laterally extending outer end portion 10 lying in the path of movement of the lever 6 and having a screw 11 threaded therethrough. The screw 11 constitutes a stop or limit for the lever 6 in the movement thereof to effect the opening of valve V and may be adjusted to

limit such movement and thereby the opening of the valve so as to regulate the flow of material through the conduit 3. At its outer end the conduit 3 is provided with a closure 12 preferably formed integrally therewith, and having an annular flange or collar. The downwardly directed outlet or discharge pipe 4 for the conduit 3 is secured to the end closure 12 as by being threaded into an opening 10 extending therethrough.

The outlet or discharge pipe 4 communicates with and extends almost to the bottom of a pouring vessel 13 in the form of an open pot, which is disposed below the outer end of the conduit 3. The pouring vessel 13 is supported from the outer end of the conduit 3 for pivotal movement about a substantially horizontal axis, which is also preferably substantially at right angles to the conduit 3, as by means of a bracket 14 having downwardly extending spaced arms 15, and horizontally aligned pivot pins 16. These pivot pins 16 extend through and are threaded in openings provided in the opposite sides of the vessel 13 adjacent the top of the latter, and are provided with reduced smooth inner end portions which respectively engage, with a loose fit, openings formed in the arms 15 adjacent the lower ends of the latter. The upper part of bracket 14 is in the form of a flat plate and has substantially a line bearing on the periphery of the annular flange or collar formed at the outer end of the conduit 3. The bracket 14 is secured to said collar by a pair of screws 17 which extend through the bracket and are threaded into the collar at either side of the point of engagement of the bracket with the collar. Secured to the rear end of the vessel 13 and extending therefrom is a rod 18 which coacts with a lower arm or extension 19 of the lever 6. The arm 19 of lever 6 is formed with an angular or laterally extending end portion having an upper cam surface 20 with which the rod 18 is constantly held in engagement, as by means of a weight 21 suspended from the hooked end portion 22 of the rod. The arm 19 is formed at its end with an upwardly extending projection 23 adapted to coact with the rod 18 to limit the lever 6 in the movement thereof to effect the closing of valve V, viz., the movement of the lever to the left (looking at Fig. 3).

The pouring vessel or pot 13 is provided or formed at its forward end portion with a pair of divergent discharge spouts 24 and 25 adapted, when the vessel 13 is in pouring position, respectively to discharge or deliver material into a pair of containers, such as the molds 2—2. Reference character 26 represents a fine screen which is secured in and extends transversely of the pouring vessel 13 adjacent the discharge spouts. This screen extends to the bottom of the pouring vessel and serves to retain any foreign particles which may be present in the material S, pre-

venting the same from being discharged with the material from the spouts 24 and 25 into the molds or other containers. The pouring vessel 13 is provided with a convex or bellied bottom and each of the discharge spouts 24 and 25 is formed with a bottom preferably constituting a continuation of the bottom of the pouring vessel and having at its outer end a sharp pouring lip 27. When the arm 6 is moved from the full line position shown in Fig. 3 to the dotted line position to open the valve V, the vessel 13 will by reason of the engagement of the cam surface 20 of the lower arm or extension 19 of this lever with the rod 18, be moved or tipped about the pivots 16 to the position shown in dotted lines in Fig. 1, that is, to pouring or discharge position. Upon the return of the lever to the full line position (Fig. 3), or to valve-closing position, the weight 21 will act to return the pouring vessel 13 to the full line position shown in Fig. 1, that is, to cut-off position. It will be apparent that the lever 6 and its arm or extension 19, constitute unitary means for simultaneously effecting or bringing about the opening and closing of the valve V and movement of the pouring vessel 13 to pouring and cut-off positions, respectively. It will also be apparent that the vessel 13 is biased to cut-off position by the weight 21. The vessel 13 and the outlet 4 are of such relative arrangement and the shape of the pouring vessel is such, that there will always be present in the latter, whether in pouring, cut-off or any intermediate position, a sufficient body S' of the molten wax-like or other material being supplied to the molds 2 or other containers, to cover or seal the lower end of the pipe 4. The levels of the body of material S' when the pouring vessel or pot is in cut-off and pouring positions, respectively, are indicated by reference characters A and A'. So long as the level of the material S in the tank 1 is above the conduit 3, it will be impossible for air to enter the outlet pipe 4, as such pipe and the entire passageway of the conduit 3 (except the space occupied by the valve V) will constantly be completely filled with the material. Therefore, practically no air can be entrapped in the material intermittently filling molds or other containers by the use of my improved device arranged as described. The pouring vessel 13 when in cut-off position, is substantially horizontal with the bottom of each of its discharge spouts curving or inclining upwardly from the bottom of the main portion of the vessel. As each of the discharge spouts 24 and 25 is provided with a sharp pouring lip 27, it will be apparent that in moving the vessel from pouring to cut-off position, the flow of the material S to the molds or other containers will be quickly cut off with practically no further flow or dripping of material into the molds or containers. Where my improved device is provided

with a plurality of discharge spouts, for example, the two discharge spouts 24 and 25, and is employed for filling a plurality of molds 2, 2, or other containers, it will be apparent that the material S should be discharged from the spouts 24 and 25 at equal rates so that the molds will be filled in the same period of time. Ordinarily it would be difficult to form the spouts, or to adjust the relative heights of the pouring lips thereof, so as to obtain equal rates of flow therefrom. By reason of the arrangement, described above, for supporting the pouring vessel, however, the latter may be quickly and easily adjusted at any time in such a manner as to obtain such equal rates of flow from the discharge spouts 24 and 25 or any other proportionate rates of flow (within certain limits) which may be desired. To effect the adjustment necessary to equalize or otherwise change the proportionate rates of flow from the discharge spouts, it is merely necessary to loosen one of the screws 17 and tighten the other so as to tilt or move the bracket 14 and the pouring vessel 13 about the fulcrum or bearing line of the bracket on the peripheral surface of the collar at the outer end of the conduit 3. Such adjustment of the vessel 13 will effect a change in the relative heights of the pouring lips of the discharge spouts. In this connection, it is to be noted that the said bearing line or fulcrum of the bracket 14 extends substantially at right angles to the axis of the pivotal mounting of vessel 13 in the arms 15, and is located intermediate the screws 17, 17, and also substantially in a plane which is approximately midway between the discharge spouts 24 and 25. The openings 30 in the bracket 14 through which the screws 17, 17 extend, are somewhat larger in diameter than the shanks of the screws so as to provide sufficient clearance to insure the adjustment of these screws effecting the desired tilting or pivotal movement of the bracket and pouring vessel.

While I have described the preferred embodiment of my invention, it is to be understood that such embodiment is subject to numerous changes and modifications without departure from the spirit of the invention and the scope of the appended claims.

I claim:—

1. In a device of the class described, a pouring vessel having a plurality of discharge spouts, and a support on which said vessel is mounted, said vessel being adjustable with respect to the support for regulating the proportionate rates of discharge of material from said spouts, substantially as described.

2. In a device of the class described, a pouring vessel having a pair of discharge spouts, and a support on which said vessel is mounted, said vessel being adjustable with respect to the support for changing the rela-

tive height of said spouts to thereby regulate the proportionate rates of discharge from the spouts, substantially as described.

3. In a device of the class described, a pouring vessel having a plurality of discharge spouts, and a support on which said vessel is mounted for pivotal movement about a given axis towards and from pouring position, said vessel being adjustable on said support about an axis at an angle to said pivotal axis for regulating the proportionate rates of discharge from said spouts, substantially as described.

4. In a device of the class described, a pouring vessel provided with a pair of discharge spouts, a support on which said vessel is mounted for tilting movement about an axis located substantially in a plane intermediate said spouts and adjustable means for tilting said vessel about said axis to thereby regulate the proportionate rates of discharge from said spouts, substantially as described.

5. In a device of the class described, a pouring vessel provided with a pair of discharge spouts, a device on which said vessel is pivotally supported for movement about a given axis to and from pouring position, and a support to which said device is secured for adjustment about an axis at an angle to said pivotal axis, substantially as described.

6. In a device of the class described, a pouring vessel provided with a pair of discharge spouts, a bracket in which said vessel is pivotally mounted for movement about a given axis to and from pouring position, a support on which said bracket has substantially a line bearing which is disposed at an angle to said pivotal axis, and screws adjustably securing said bracket to the support at either side of said bearing, substantially as described.

7. In a device of the class described, a pouring vessel having a pair of discharge spouts, a bracket in which said vessel is mounted, a support having a curved surface, said bracket having substantially a line bearing on the curved surface of said support, which bearing is located substantially in a plane intermediate said spouts, and members extending through said bracket and threaded into said support on either side of said bearing, said members securing the bracket to the support and being adjustable to tilt the same and thereby said vessel with respect to said support about said bearing, substantially as described.

8. In combination, a supply conduit provided with an outlet and a pouring vessel or pot movable to and from pouring position and having a pouring outlet which is at a higher level than the bottom of said vessel both when the latter is in pouring and non-pouring position, the outlet of said supply conduit terminating within said vessel and below the said pouring outlet both when

said vessel is in pouring and non-pouring position, and said vessel being of such shape and so mounted as to retain therein in the movements thereof to and from its pouring and non-pouring positions a body of the material being supplied constantly sealing the outlet of the supply conduit, substantially as described.

9. The combination of a supply conduit having an outlet, a valve in said conduit, and a pouring vessel having a pouring outlet and mounted for limited movement, said pouring vessel when at one limit of its movement being in pouring position and when at the other limit being in non-pouring or cut-off position, the outlet of said conduit communicating with said vessel at a point therein which is below the level of said pouring outlet both when said vessel is in pouring and non-pouring position, and said vessel being of such shape and so mounted as to retain therein in the movements thereof to and from its pouring and non-pouring positions a body of the material being supplied constantly sealing the outlet of the supply conduit, substantially as described.

10. The combination of a supply conduit having an exit, a valve in said conduit, a pouring vessel mounted for limited movement and having a discharge outlet which within the limits of movement of the vessel is at a higher level than the bottom of the latter, said pouring vessel when at one limit of its movement being in pouring position and when at the other limit being in cut-off position, the said exit of the supply conduit having communication with said vessel at a level which is below that of said discharge outlet at either limit of movement of the vessel whereby there will be retained in said vessel within the limits of its movement, a body of the material being supplied sufficient constantly to seal said exit, and means for effecting movement of said pouring vessel to pouring position and for simultaneously effecting the opening of said valve, substantially as described.

11. The combination of a supply conduit having an exit, a valve in said conduit, a pouring vessel mounted for limited movement and having a discharge outlet which within the limits of movement of the vessel is at a higher level than the bottom of the latter, said pouring vessel when at one limit of its movement being in pouring position and when at the other limit being in cut-off position, the said exit of the supply conduit having communication with said vessel at a level which is below that of said discharge outlet at either limit of movement of the vessel whereby there will be retained in said vessel within the limits of its movement, a body of the material being supplied sufficient constantly to seal said exit, and means operable to effect the closing of said

valve, the operation of said means in effecting the closing of the valve being accompanied by movement of said pouring vessel to cut-off position, substantially as described.

12. The combination of a supply conduit having an exit, a valve in said conduit, a pouring vessel mounted for limited movement and having a discharge outlet which within the limits of movement of the vessel is at a higher level than the bottom of the latter, said pouring vessel when at one limit of its movement being in pouring position and when at the other limit being in cut-off position, the said exit of the supply conduit having communication with said vessel at a level which is below that of said discharge outlet at either limit of movement of the vessel whereby there will be retained in said vessel within the limits of its movements, a body of the material being supplied sufficient constantly to seal said exit, and means operable to effect opening and closing movements of said valve, the operations of said means in effecting the opening and closing movements of the valve being accompanied by movements of said pouring vessel to pouring and cut-off positions respectively, substantially as described.

13. The combination of a supply conduit having an outlet, a valve in said conduit, a pouring vessel mounted for limited movement and with which said outlet communicates, said pouring vessel when at one limit of its movement being in pouring position and when at the other limit being in cut-off position, and being of such shape and so mounted as to retain therein within the limits of its movement a body of the material being supplied sufficient constantly to seal said outlet, and means for opening and closing said valve, said means when operated to open said valve effecting movement of said pouring vessel to pouring position, substantially as described.

14. The combination of a supply conduit having an exit, a valve in said conduit, a pouring vessel mounted for limited pivotal movement about a horizontal axis and having a discharge outlet which within the limits of movement of the vessel is at a higher level than the bottom of the latter, said vessel when at one limit of its pivotal movement being in pouring position and when at the other limit of such movement being in cut-off position, the said exit of the supply conduit having communication with said vessel at a level which is below that of said discharge outlet at either limit of the pivotal movement of the vessel whereby there will be retained in said vessel within the limits of its movement a body of the material being supplied sufficient constantly to seal said exit, and means for opening and closing said valve, the operations of said means in opening and closing the valve being accompanied by move-

ments of said vessel to pouring and cut-off positions respectively, substantially as described.

in the vessel within the limits of its movement a body of the material being supplied sufficient constantly to seal said outlet, substantially as described.

This specification signed this 1st day of February, 1923.

WILLIAM W. McWILLIAMS.

15. The combination of a supply conduit
5 having an exit, a valve in said conduit, a
pouring vessel mounted for limited pivotal
movement about a horizontal axis and having
a discharge outlet which within the limits of
10 movement of the vessel is at a higher level
than the bottom of the latter, said vessel
when at one limit of its pivotal movement
being in pouring position and when at the
other limit of such movement being in cut-
15 off position, the said exit of the supply conduit
having communication with said vessel
at a level which is below that of said discharge
outlet at either limit of the pivotal
20 movement of the vessel whereby there will
be retained in said vessel within the limits
of its movement a body of the material being
supplied sufficient constantly to seal said
exit, means comprising a pivoted member for
opening and closing said valve, the move-
25 ments of said member in opening and closing
the valve being accompanied by movements
of said vessel to pouring and cut-off positions
respectively, and adjustable means for
limiting the movement of said member in
opening said valve, substantially as described.
- 30 16. The combination of a supply conduit
having an outlet, a valve in said conduit, and
a pouring vessel mounted for limited pivotal
movement about a substantially horizontal
35 axis, said vessel at one end of its pivotal movement
being in pouring position and at the
other end of such movement being in cut-off
and substantially horizontal position, said
vessel having one or more discharge spouts,
40 the bottom of each of said spouts inclining
upwardly from the bottom of the pouring
vessel when the latter is in cut-off position,
said vessel being so mounted and said outlet
extending into the pouring vessel and communicating
45 therewith at a point sufficiently
adjacent the bottom thereof as to insure the
retaining in the pouring vessel within the
limits of its movement of a body of the material
being supplied sufficient constantly to
seal such outlet, substantially as described.
- 50 17. The combination of a supply conduit
having an outlet, a valve in said conduit, and
a pouring vessel mounted for limited pivotal
movement about a substantially horizontal
55 axis, said vessel at one end of its pivotal movement
being in pouring position and at the
other end of such movement being in cut-off
and substantially horizontal position, said
pouring vessel having one or more discharge
60 spouts and a bellied bottom, the bottom of
each of said spouts forming a continuation
of the bottom of the pouring vessel, said vessel
being so mounted and said outlet extending
into the pouring vessel and communicating
65 therewith at a point sufficiently adjacent
the bottom thereof as to insure the retaining

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