O. I. WARING.

FILLING MACHINE.

APPLICATION FILED OCT. 23, 1916.

1,294,579. Patented Feb. 18, 1919.

Fig. 1.

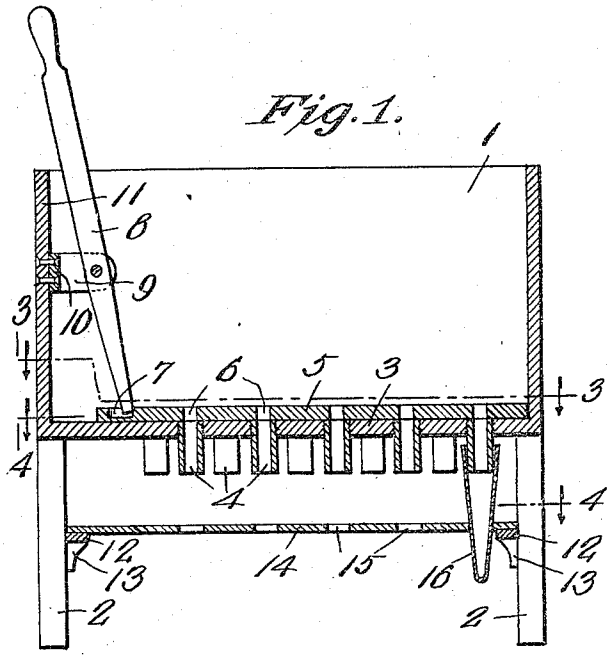


Fig. 2.

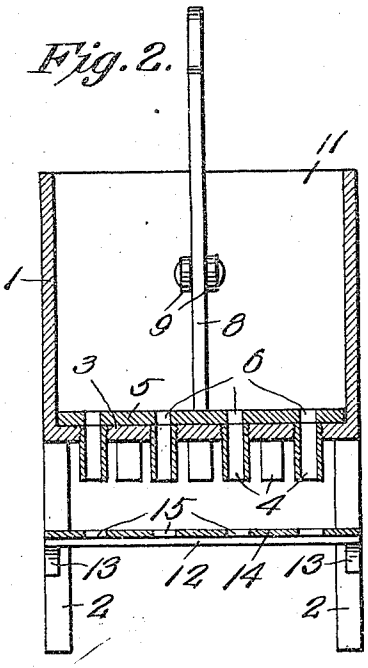


Fig. 3.

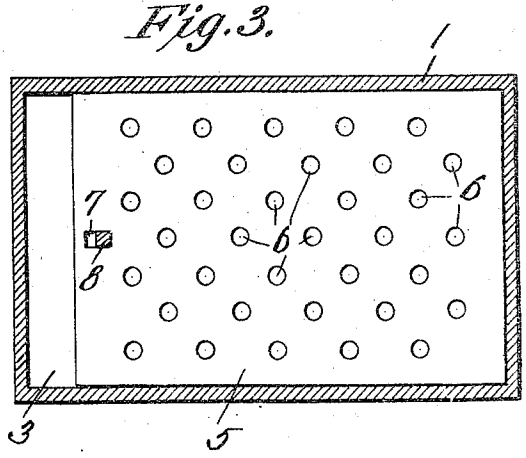
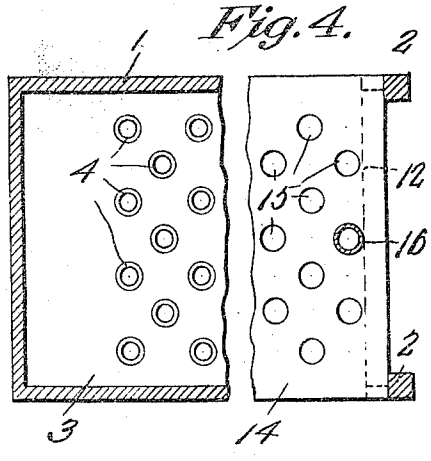


Fig. 4.



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WITNESSES

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OLAF I. WARING, OF LONG ISLAND CITY, NEW YORK.

FILLING-MACHINE.

1,294,579. Specification of Letters Patent. Patented Feb. 18, 1919.

Application filed October 23, 1916. Serial No. 127,222.

To all whom it may concern:

Be it known that I, OLAF I. WARING, a citizen of the United States, residing at Long Island City, in the county of Queens and State of New York, have invented certain new and useful Improvements in Filling-Machines, of which the following is a specification.

This invention relates to filling machines, and more particularly to a machine especially adapted for discharging pharmaceutical preparations into suitable containers.

One of the main objects of the invention is to provide a machine of the character stated of simple construction and operation which is capable of filling a plurality of containers simultaneously. A still further object is to provide a machine having very few working parts which may be produced at relatively small cost. Further objects will appear from the detail description.

In the drawings:—

Figure 1 is a longitudinal vertical sectional view through the machine;

Fig. 2 is a transverse vertical sectional view;

Fig. 3 is a section taken on line 3—3 of Fig. 1; and

Fig. 4 is a section taken substantially on line 4—4 of Fig. 1.

A tank 1 of rectangular cross-section is supported on suitable legs 2 secured thereto at each end. This tank may be constructed of brass, copper, or other suitable non-corrodible metal. The bottom 3 of the tank is planed and given a smooth finish so as to be true and level. This bottom is provided with a plurality of apertures into each of which is threaded a nipple 4, the upper end of which is flush with the upper surface of the bottom 3. This nipple projects a slight distance below the bottom of the tank.

A plate 5 which is also of brass, or other suitable material, is mounted on the bottom 3 within the tank. This plate is of approximately the same width as the interior of the tank so as to fit snugly within the same, and it is somewhat shorter than the tank so as to have limited longitudinal movement thereof. The plate 5 is provided with a plurality of apertures 6 which are so spaced that, when the plate is in its innermost position within the tank, these apertures are brought into register with the nipples 4. The plate 5 is provided at one end with a centrally disposed recess 7 in its upper face. This recess loosely receives the lower end of a hand lever 8 which is pivotally mounted between the inwardly projecting arms 9 of a U-bracket 10 secured to one end 11 of the tank 1. By swinging this lever about its pivot the plate 5 may be moved so as to bring the apertures 6 out of register with the nipples 4, thus shutting off communication between the nipples and the interior of the tank. As will be noted from Figs. 2 and 3 of the drawings, the apertures 6 through plate 5 are arranged in staggered relation, as are also the apertures through the bottom of tank 1 which receive the nipples 4. The length of plate 5 is such that, when moved into its extreme position away from the end wall 11 of the tank, the apertures of the plate and the tank bottom are brought into register as above described and, when moved into its extreme position toward end wall 11 the nipples 4 are closed by the plate which thus acts as a plate valve. As the plate is of approximately the same width as the interior width of the tank it is guided by the side walls thereof during its operation, and the end walls of the tank serve as stop members to positively limit the movement of the plate in either direction so as to either open or close the nipples 4, as desired. The plate 5 being formed from metal is comparatively heavy so as to fit tightly against the upper surface of bottom 3 of the tank which, as above stated, is planed to give a smooth finish, thus insuring tight closure of the nipples when the plate is moved into engagement with end wall 11 of the tank. Also, the mixture within the tank serves to exert downward pressure upon the plate 5 so as to hold it pressed tightly against the bottom of the tank. The position of the lever entirely within the tank avoids the necessity for making any opening in the wall of the tank through which the operating mechanism extends. Also the lever serves to a degree as an agitator for the contents of the tank. Finally the lever serves to prevent the dislodgment of the plate 5, because the lower end of the lever projects into the recess 7, as seen in Fig. 1, and the plate cannot be easily removed until the lever is removed from its pivotal connection with the bracket 10.

At each end of the tank, a transverse shelf 12 is supported on the legs 2 by brackets 13

secured thereto. These two shelves are adapted to support a tray or board 14. This board is provided with a plurality of openings 15 which, when the tray is in operative position, are in vertical alinement with the nipples 4. These openings are adapted to receive suitable receptacles or containers such as paper cones 16.

This machine is especially adapted for the preparation of pharmaceutical or medical preparations formed from a compound of glycerin and tallow, or the like, which are first melted and are then molded into suitable forms or tablets. The melted glycerin and tallow is placed in the tank 1, the plate 5 being moved into position so as to close the nipples 4. A tray 14 is then placed under the tank containing a plurality of cones 16, one cone for each nipple. The plate 5 is then moved inward into the position shown in Fig. 1 of the drawing. This permits the contents of the tank to discharge into the cones 16, so as to partly fill the same. In practice, each cone is approximately two-thirds filled. After the cones have been filled, the tray containing the same may be removed and placed in a cooling room or refrigerator so as to permit the mixture to set, after which the tablets may be removed from the cones. The tray which has been removed may be replaced by a second tray containing another batch of cones, this operation being repeated as often as desired.

What is claimed is:—

In a filling machine of the type described, the combination with a box-like tank having a flat bottom provided with a plurality of openings, nipples depending therefrom, a flat plate slidably mounted on said bottom and of less length than the same, the plate having openings adapted to register with those in the bottom when the plate is at one extremity of its movement, said plate being adapted to close the bottom openings when it is at the other extremity of its movement, and the plate being also provided with a recess in its upper face, and means beneath the bottom for supporting the articles to be filled; of a U-shaped bracket secured to one end wall of the tank, and a lever pivoted between the bracket arms and having its lower end mounted in said recess, as described.

In testimony whereof I affix my signature in presence of two witnesses.

OLAF I. WARING.

Witnesses:

GEORGE W. LUFT,

GUST. A. SORENSEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."