March 13, 1928. 1,662,523

A. T. LIGHT

MEASURING APPARATUS

Filed Oct. 5, 1921 2 Sheets-Sheet 1

Fig. 1.

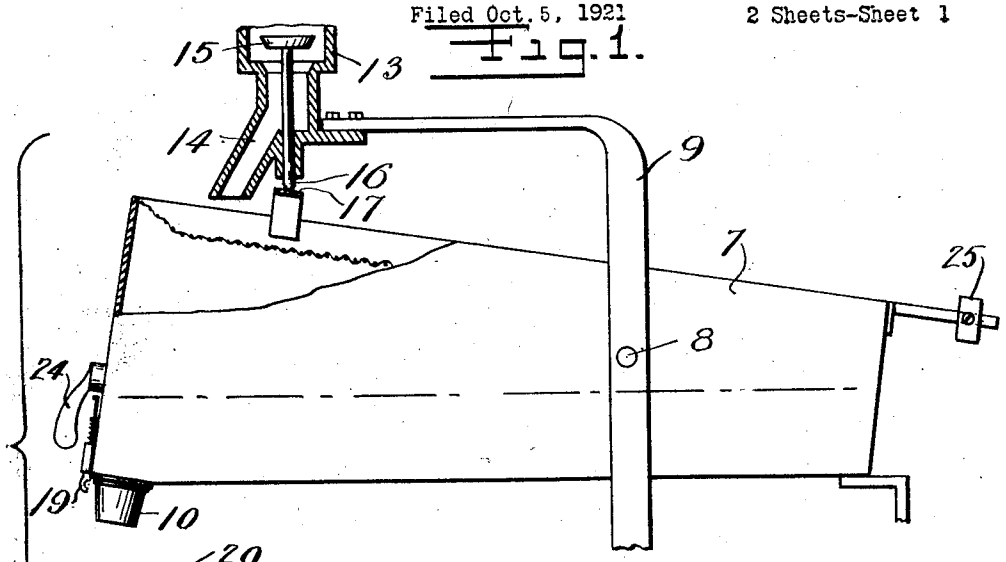
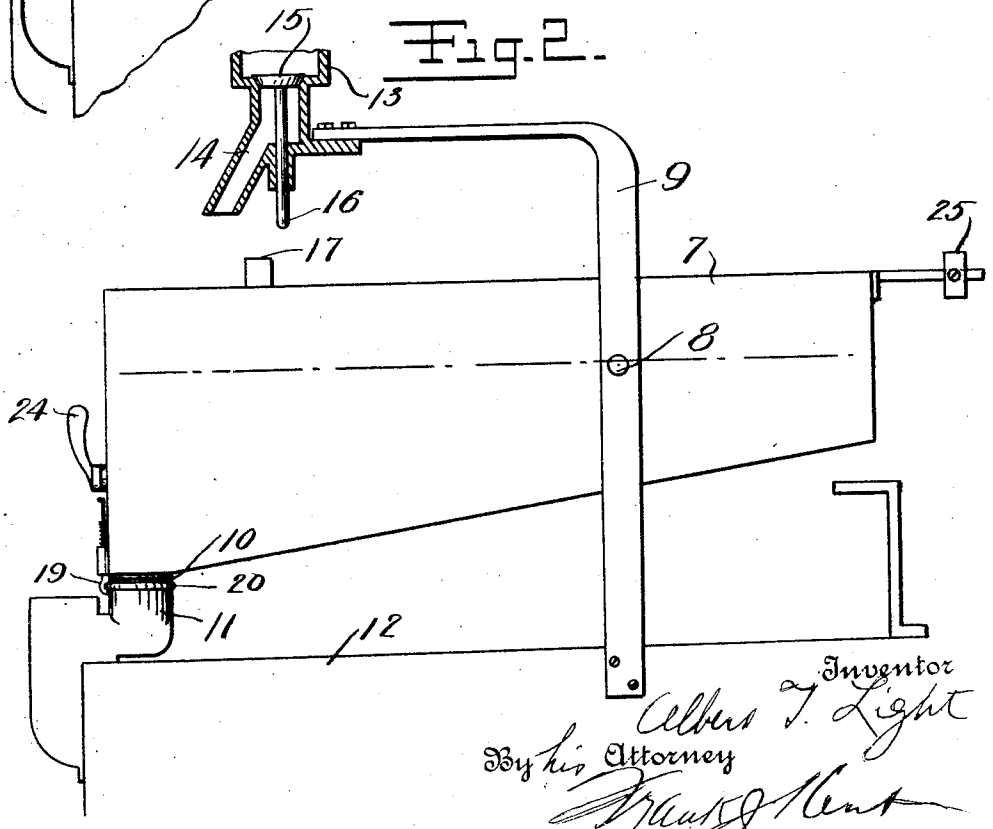


Fig. 2.



Inventor
Albert T. Light
By his Attorney
Frank J. Kent

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Fig. 4.

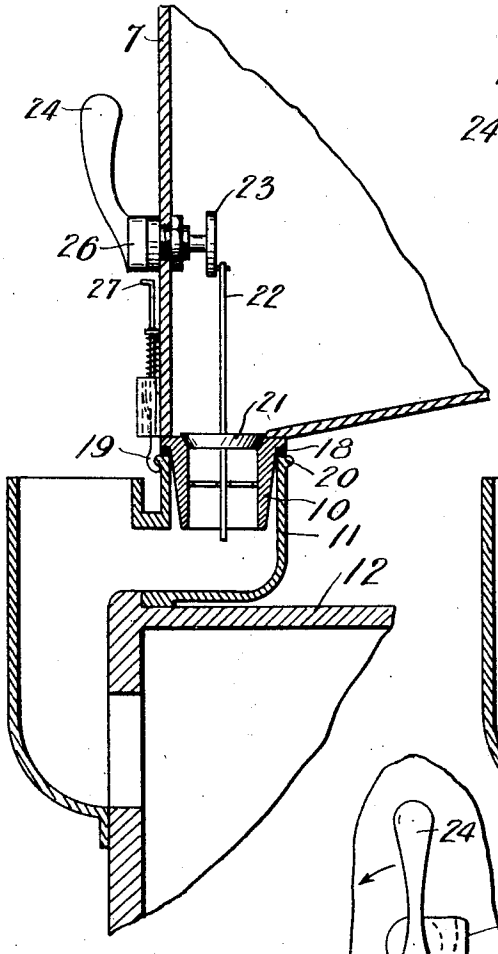
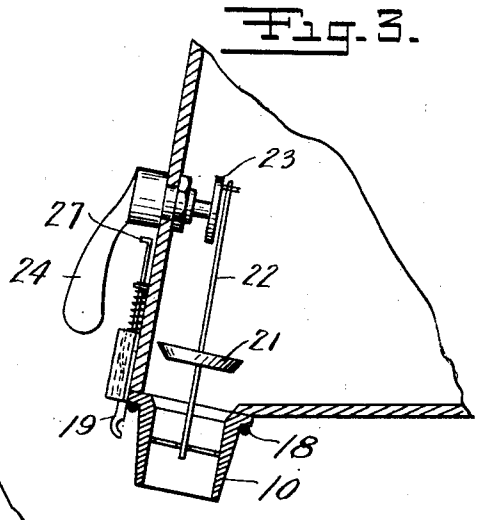


Fig. 3.



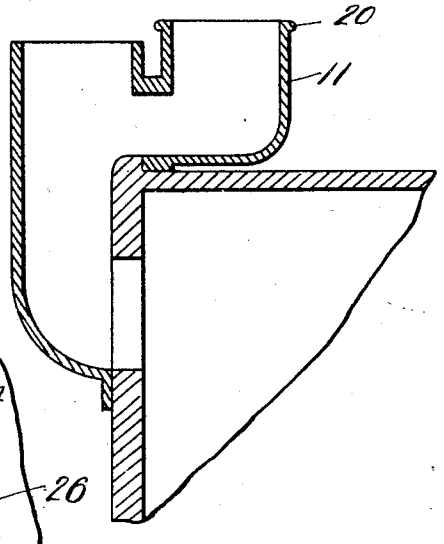
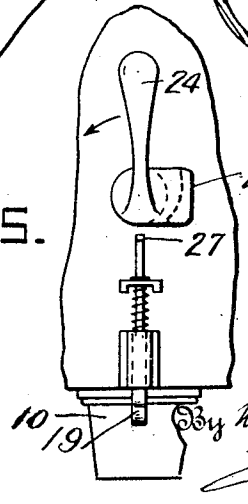


Fig. 5.



Inventor
Albert T. Light
By his Attorney

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UNITED STATES PATENT OFFICE.

ALBERT T. LIGHT, OF NEW YORK, N. Y.

MEASURING APPARATUS.

Application filed October 5, 1921. Serial No. 505,514.

The present invention relates particularly to the measuring of the cream used in the manufacture of ice cream on a commercial or wholesale scale.

The objects of the invention are to provide simple and effective means for automatically measuring the cream and feeding it directly to the freezer and which apparatus will be readily attachable to the ordinary freezer.

In the form of the invention herein disclosed, the measuring or weighing mechanism is in the form of a measuring receptacle pivotally supported and balanced so as to automatically swing from an intake to a discharge position when it has received a measured quantity of fluid.

In the accompanying drawings illustrating this embodiment of the invention, Figures 1 and 2 are fragmentary and part sectional side elevations illustrating the measuring receptacle first in the receiving and then in the discharging position.

Figures 3 and 4 are enlarged sectional views of the coupling and valve mechanism in the same relations.

Figure 5 is a broken detail of the lock mechanism for the coupling.

The measuring receptacle is illustrated in the form of a pan 7 pivoted at 8 in a suitable supporting frame 9, and having a discharge spout 10 at its forward end to fit into the mouth of the charging inlet 11. This charging inlet opens into the freezer in the usual way. The body of the freezer is indicated at 12 and the supporting frame for the measuring pan is indicated as supported directly on top of the freezer, beneath the pan for chilling the cream, which latter is indicated at 13 as having a discharge spout 14 controlled by a lift valve 15 having a dependent stem 16 guided for vertical movement and positioned for engagement by an abutment 17 on top of the measuring pan.

The discharge spout 10 may be tapered so as to swing easily into the mouth of the inlet 11, and so as to make a close fit therewith. In order that there may be no leakage at this joint, I have shown the spout as carrying a compressible gasket or washer 18 and as provided with a spring pressed hook 19 adapted to engage over the flange or rim 20 of the inlet mouth so as to draw the parts closely together.

The discharge spout is shown as equipped with a lift valve 21 connected by means of a stem 22 with a crank disc 23 journaled in the front wall of the measuring pan and provided at its outer end with a suitable operating handle 24.

The measuring pan is balanced so that when empty it will stand in the upwardly tilted position indicated in Figures 1 and 3. This may be provided for by counterbalancing the rear end of the same by a weight 25 which may be adjustable to adapt the pan for measuring different quantities.

In this uptilted position, the bottom of the pan may stand in a substantially horizontal plane, so that as the pan tilts downwardly and forwardly, the bottom will be inclined to discharge the full contents of the pan. As shown in Figure 1, the supply valve 15 is automatically opened when the pan tilts upwardly. This causes the cream to flow into the pan until by its weight it over-balances the pan and swings it downward into the position shown in Figures 2 and 4. In this lowering movement the supply valve automatically drops closed and the coupling between the pan and the freezer is automatically engaged and locked by the spring catch. The discharge valve 21 may then be opened by turning the handle 24 from the position shown in Figure 4 to the position shown in Figure 3, whereupon the measured quantity of cream will be discharged into the freezer.

After discharging its contents, the measuring pan may be held in its lowered position by the spring catch described. When it is desired to measure another charge, the spring catch may be released and the pan be permitted to tilt upward by turning the handle 24 so as to engage the cam groove 26 thereon with a lug 27 on the stem of the hook 19.

When the hook is thus released, the measuring pan is again free to tilt upward and receive another measured quantity of the cream.

This invention, it will be seen, makes it possible to measure the cream and feed it from the chilling pan or source of supply directly to the freezer, eliminating the unhandy and objectionable ladling methods heretofore practiced. The apparatus also is quite simple and relatively inexpensive, and can be easily applied to existing machines.

What I claim is:

1. Cream measuring apparatus for ice cream freezers comprising in combination

with a freezer having an inlet, a source of supply having a supply valve above the freezer, a measuring pan pivoted to swing between the supply valve and the inlet of the freezer and balanced to swing upward when empty and to automatically lower itself upon receiving a desired measured quantity of the cream, means actuated by the pan for automatically opening the supply valve upon upward movement of the pan, valve mechanism controlling flow from the measuring pan into the freezer inlet, and coupling means under control of said valve mechanism during closing movement of the valve mechanism, said coupling means being adapted for holding the pan in lowered position.

2. Cream measuring apparatus for ice cream freezers comprising a freezer having an inlet, a source of supply above the freezer, a supply valve controlling the supply, a measuring pan pivoted above the freezer and movable under a predetermined weight of material in the pan from an operative-receiving relation to the supply valve to an operative discharge relation to the freezer, means by which movement of the pan controls the supply valve, a discharge valve controlling flow of material from the pan, coupling means for holding the pan in discharge position, a manual operating handle connected to the discharge valve, and means under control of the handle and adapted to uncouple the coupling means during closing movement of the discharge valve.

3. In combination, a measuring receptacle pivotally supported and balanced to stand in one position when empty and to swing to a discharge position upon receiving a predetermined weight of material, a supply valve arranged to discharge into the receptacle, means operated by movement of the receptacle for controlling the supply valve, a discharge spout carried by the receptacle, an inlet having a mouth to receive said spout when the receptacle swings to its filled position, coupling means for holding the spout and mouth in communicating relation, and valve mechanism controlling discharge of the material from the measuring receptacle and arranged to control the coupling during closing movement of the valve mechanism.

4. In combination, a measuring receptacle pivotally supported and balanced to stand in one position when empty and to swing to a discharge position upon receiving a predetermined weight of material, a supply valve arranged to discharge into the receptacle, means operated by movement of the receptacle for controlling the supply valve, a discharge spout carried by the receptacle, an inlet having a mouth to receive said spout when the receptacle swings to its filled position, coupling means for holding the spout and mouth in communicating relation, a valve controlling discharge of the material from the measuring receptacle, a manual operating handle connected to the discharge valve, and means under control of the handle and adapted to uncouple the coupling during movement of the handle toward valve-closing position.

5. In combination, a measuring receptacle pivotally supported and balanced to stand in one position when empty and to swing to a discharge position upon receiving a predetermined weight of material, a supply valve arranged to discharge into the receptacle, a discharge spout carried by the receptacle, an inlet having a mouth to receive said spout when the receptacle swings to its filled position, coupling means for holding the spout and mouth in communicating relation, said coupling means being adapted to automatically latch when the receptacle moves to discharge position, a valve controlling discharge of the material from the measuring receptacle, a manual operating handle connected to the discharge valve, and means under control of the handle and adapted to uncouple the coupling during movement of the handle toward valve-closing position.

In testimony whereof I affix my signature.

ALBERT T. LIGHT.