Sept. 10, 1940. J. C. HUGHES 2,214,374

EVACUATOR

Filed May 17, 1940

Fig. 1.

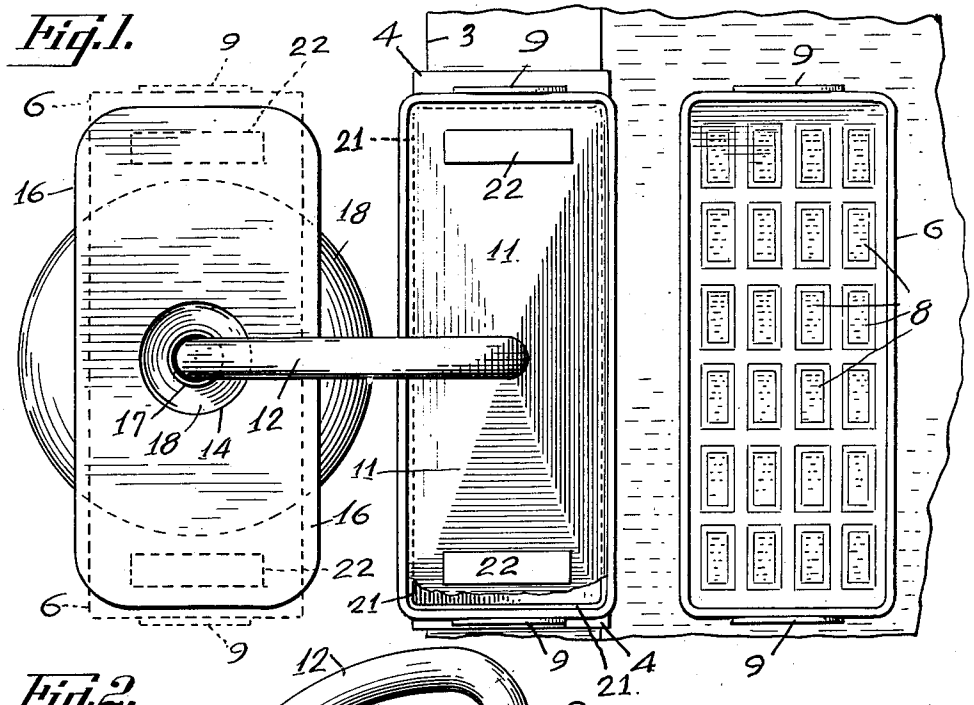


Fig. 2.

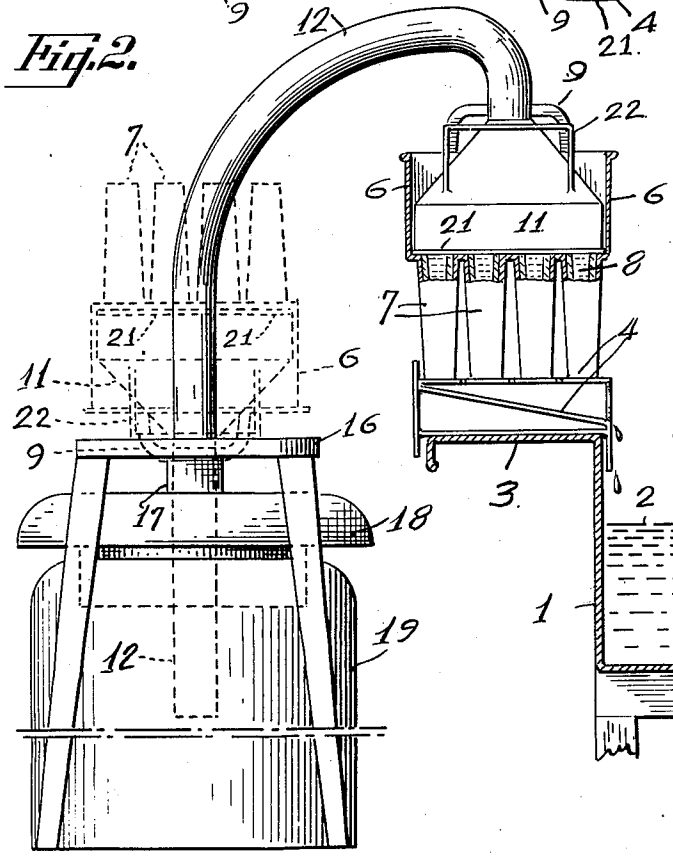


Fig. 3.

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EVACUATOR

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Application May 17, 1940, Serial No. 335,726

4 Claims. (Cl. 107—8)

My invention relates to improvements in an evacuator of the type adapted to evacuate uncongealed liquid from a mold during the process of forming a shell or casing for a frozen confection, as fully described and set forth in my copending application, Serial No. 314,970; filed January 22, 1940, reference to which application is hereby made.

Briefly, during the process referred to, a mold is filled with a liquid ingredient of a frozen confection and passed through a refrigerant or exposed to a freezing process. When the outer portion only of said ingredient has congealed, the uncongealed or liquid portion is evacuated from the mold by suction, and the mold is continued through the freezing process until said casing is solid.

In my second copending application, Serial No. 321,979; filed March 2, 1940, for an Evacuator, I have described and fully set forth an automatic suction evacuator for use in mass production on a large scale, especially in large communities where a sudden daily demand for frozen confections, in hot weather, is frequently considerable and must be promptly met.

In smaller communities and rural sections, the sudden demand for frozen confections, on account of smaller populations, is not so great and therefore does not justify, nor can the producer afford the expense of procuring and operating an expensive automatic suction evacuator, such as above referred to.

The present invention, then, relates to a manually operated evacuator whereby uncongealed liquid may be quickly, conveniently and economically evacuated without the usual waste and loss resulting from the dripping and smearing of a valuable ingredient over the surfaces of a mold during the pouring out or evacuation of said uncongealed liquid.

The primary object of the present invention is to provide a new and improved evacuator for expeditiously and economically evacuating the uncongealed portion of a frozen confection from a mold.

Another object is to provide an improved evacuator of the character set forth, having improved means for preventing loss of a valuable ingredient through the spilling and spreading incident to a pouring operation.

A further object is to provide a new and improved evacuator of the type described, having improved means for easily and rapidly disconnecting said evacuator from a receiving container that has been filled, and, without undue loss of time and waste of evacuated liquid, readily connect said evacuator to an empty container. I accomplish these and other objects by means of the improved device disclosed in the drawing forming a part of the present application, and in which:

Fig. 1 is a partly broken plan view of a portion of a brine or freezing trough, disclosing my improved evacuator applied thereto;

Fig. 2 is a partly broken, vertical sectional view of Fig. 1; and

Fig. 3 is an enlarged broken detail view.

Referring to the drawing:

The numeral 1 is used to designate a tank or trough containing brine or other refrigerant 2 and is generally provided with a horizontally flanged rim 3, upon which rests a drain 4, which, being no part of the present invention, requires no further description.

A pan 6, having a plurality of molds 7 extending from the bottom thereof and containing, at this point or stage in the process of producing a frozen casing, uncongealed portions 8 of a liquid ingredient of a confection to be frozen, is moved through the brine 2 in said trough 1 and is provided with suitable handles 9 at each end for convenience in handling.

It should be particularly noted that the pans 6 are comparatively deep, providing high sides to prevent portions of brine 2 from splashing into the interior of said pan 6 and the ingredient 8 in the molds 7 thereof.

My invention comprises a funnel 11, shaped to fit snugly and well within, when inverted, the deep pan 6 and engage the bottom thereof, directly adjacent the openings of the molds 7 thereinto, as fully disclosed in the central portions of Figs. 1 and 2 of the drawing.

A flexible tubular connection 12, such as a rubber hose or the like, has one end permanently connected to the apex of the funnel 11 while the other end is slidably inserted through an aperture 14, preferably centrally disposed in the top of a suitable support 16, alongside the tank 1, and also slidably mounted through a tube 17 in the center of a broad, flared cover 18 of a suitable container 19 arranged directly under the support 16.

A suitable resilient gasket 21, of rubber or other suitable material, is mounted around the rim of the funnel 11 and so arranged as to engage the bottom of the pan 6 and the adjacent or lower portions of the internal walls of said pan, the purpose of which will hereinafter be more fully set forth.

The funnel 11 is also provided with a pair of handles 22, one at each end, which, when the funnel is right side up, operate as feet to hold said funnel 11 and pan 6, with the assistance of the attraction of gravity, in operative connection while in draining position, as hereinafter described.

In operation:

The support 16 and drain 4 are placed directly opposite that portion of the tank 1 where the outer portions of the ingredients have congealed and where uncongealed portions are to be evacuated.

The pan 6 is lifted from the tank 1 and placed upon the drain 4 so that a major portion of any brine 2 adhering thereto may be drained back into the tank 1, for the reason that said brine is an expensive element, the waste of which it is desired to prevent. It is also desired that no great amount of brine 2 shall drain from the pan 6 when the same is placed upon the support 16.

While the pan 6, on the drain 4, is draining its surplus brine, the funnel 11 is inverted and its rim with the gasket 21 is pressed firmly into the pan 6 to contact the bottom thereof and directly adjacent the openings of the molds 7, as disclosed in sectional view in the central portion of Fig. 2 of the drawing.

The pan 6, with the funnel 11 inserted therein, is now inverted and said funnel 11 is placed upon the support 16 and fully supports said pan 6 in such inverted position so that the attraction of gravity on the said pan 6 will effectively retain said pan in operative or engaging relation with the gasket 21 on the upper portion or rim of said funnel 11, as indicated in dotted lines in Fig. 2 of the drawing.

During the inverting of the pan 6, with the funnel 11 therein, any excess length of the tubular connection 12 is automatically taken up by the loose end sliding deeper into the container 19 through the collar or tube 17 in the top 18 thereof. Also, during this inverting, and while the uncongealed liquid 8 is draining from the molds 7, through the funnel 11 and tubular connection 12 into the container 19, the said liquid is prevented, by the deeply seated funnel 11, from spilling or spreading over the comparatively considerable area of the internal walls of said pan 6, thereby effecting a saving of the liquid ingredient, which, later, is returned into the empty molds 7 to form new or other casings.

After the uncongealed ingredient is evacuated from the molds 7, the pan 6 is placed upright upon its drain 4, the funnel 11 is removed and again inverted upon the support 16, and the pan 6 is returned to the tank 1.

In actual practice, a pair of supports 16, funnels 11 and containers 19 are placed side by side, so that one pan 6 may be draining brine on its drain 4 while a pan 6 upon the adjacent set of the pair is going through the operation above described.

When a container 19 is filled with evacuated liquid, the funnel 11 with its tubular connection 12 is lifted therefrom and a new and empty container 19 is supplied and the hose 12 and funnel 11 connected thereto.

Having described my invention, I claim:

1. An evacuator comprising the combination with a container, of a funnel shaped to fit snugly, when inverted, within a pan containing liquid to be evacuated; a support having an aperture above said container; a flexible tubular connection extending from said funnel, through said aperture and into said container to drain liquid from said funnel when the pan is inverted, with the funnel therein, into said container.

2. An evacuator for evacuating liquid from molds extending from the bottom of a pan, of a funnel shaped to fit snugly, when inverted, into the bottom of said pan and around said molds; a container; a support having an aperture above said container; a flexible tubular connection connected at one end to the apex of said funnel and at the other end with said container, to drain liquid from said molds and funnel into said container when said pan, with the funnel therein, is inverted on said support.

3. An evacuator for evacuating liquid from molds extending from the bottom of a pan, of a funnel shaped to fit snugly, when inverted, into the bottom of said pan and around said molds; a container; a support having an aperture above said container; a flexible tubular connection having one end connected to the apex of said funnel and the other end slidably mounted within said aperture and container, to drain liquid from said molds and funnel into said container when the pan is inverted, with said funnel therein, on said support; and a resilient gasket mounted on the rim of said funnel and engaging the inner sides of said pan immediately adjacent the bottom thereof, to prevent spreading of said liquid over said sides when said pan is inverted.

4. An evacuator for evacuating liquid from molds extending from the bottom of a pan, of a funnel shaped to fit snugly, when inverted, into the bottom of said pan and around said molds; a container; a support having an aperture above said container; a flexible tubular connection having one end connected to the apex of said funnel and the other end slidably mounted within said aperture and container, to drain liquid from said molds and funnel into said container when the pan is inverted, with the funnel therein, on said support above said container; a resilient gasket mounted on the rim of said funnel and engaging the inner sides of said pan immediately adjacent the bottom thereof, to prevent spreading of said liquid over said sides when said pan is inverted; and handles mounted on said funnel and operating as feet to support said pan, when inverted above said funnel, to retain snug engaging relation of the rim of said funnel with the bottom of said pan.

JENNIE C. HUGHES.