PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in Freezing Machines.

We, KUNZ WEIDLICH, of Wodanplatz 8, Nurnberg, Germany, a German citizen, and BING-WERKE, vorm. GEBR. BING AKT.-GES., of Blumenstrasse 16, Nurnberg, Germany, a German joint stock company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention relates to a freezing machine for making ice-cream or other frozen material in which an inner receptacle containing the ice-cream or other mixture is rotatively mounted in an outer receptacle, for example a wooden bucket. The mounting of the inner receptacle by means of a perpendicular central tube fixed to this receptacle, and pushed over a perpendicular fixed shaft of the outer receptacle around which it can rotate is known. In this known freezing machine the cold mixture placed into the outer receptacle acts only on the outer surface of the inner receptacle that receives the mixture. A much more rapid freezing takes place if the ice-cream mixture is not brought to the frozen state from the outside only but from the middle of the receptacle outwards as well. This double freezing action is effected according to this invention in this manner *viz.*, that the central tube does not as hitherto directly embrace the fixed shaft of the outer receptacle rotatively, but is so arranged that a circular cooling space is created between the guide tube of the inner receptacle and the fixed shaft of the outer receptacle. The cooling mixture which can enter in this cooling space is in direct connection with the cooling mixture in the outer receptacle, so that an equilibrium of temperature is possible. In order to provide this inner cooling zone, collars, bearings or equivalent furnished with through passages or slots are arranged on the fixed shaft of the outer receptacle. The central tube however may be furnished with collars, bearings or equivalent and the fixed shaft run through smoothly. On or by these collars, bearings or equivalent the central tube of the inner receptacle is guided. As the lower of the collars or equivalent is furnished with through passages or slots the freezing liquid in the outer receptacle rises to the same level in the guide tube of the inner receptacle. The central tube of the inner receptacle thus serves two objects at the same time; it serves for guiding the rotary inner receptacle and creates a cooling space for the communicating freezing medium.

Our invention will be clearly understood from the following description aided by the annexed drawings which illustrate one example of carrying the invention into effect and in which

Figure 1 is a longitudinal section through the freezing machine, and

Figure 2 a plan with the cover of the inner rotary receptacle removed.

The machine consists substantially of an outer receptacle *a* such as for instance a wooden bucket, which has a perpendicular central shaft *b* around which an inner receptacle *d* that receives the ice-cream mixture *c* can rotate. The shaft *b* is firmly connected with the bottom *h* of the outer receptacle *a* by means of a screwed portion *f* and a nut *g* with an intermediate base-plate *e*. In the receptacle *d* a central perpendicular tube *i* is fixed which can rotate around two collars, bearings or equivalent *k* and *l* on the fixed shaft *b*. The lower collar *l* is provided with passages or slots *m* so that the melting cooling mixture (the freezing medium) rises to the same level in the interior of the tube *i* as in the outer receptacle *a*. The effect of this is that the ice-cream mixture is thoroughly frozen simultaneously from outwards and

from inwards, that is more quickly than hitherto.

The bottom *n* of the inner receptacle *d* is reinforced or strengthened by a plate *o* which is furnished with protuberances *p* between which the freezing medium can pass.

The two blades *s* and *t* of the fixed wiper are connected at the top by a cross piece *u* and at the bottom by a wire ring *v* which surrounds the tube *i*, whereby the wiper obtains a lower guide. The cross piece *u* of the wipers is seated on the upper collar *k* of the shaft *b* and is fixed on this collar by a winged nut *r*.

The inner receptacle *d* is closed by means of a cover *w* held in place by bent wire devices *z*. This cover is furnished with a reinforcing plate *x* and a short shaft *y* having a pin y^1 on which the hub of a cranked handle K is placed. The wiper blades *s* and *t* have in addition at the outer edges, wiper flanges s_1 and t_1 and at the inner edges wiper flanges s_2 and t_2.

The operating of the machine is very simple. The ice-cream mixture is poured into the inner receptacle *d* the cover *w* put on and closed and the cooling mixture placed into the outer receptacle *a*. When the cooling mixture (ice and salt) begins to melt the inner receptacle *d* must be rotated slowly for a few minutes by the crank handle K whereupon the frozen ice-cream can be taken out.

If the machine is to be taken to pieces the crank handle *k* is removed, the cover *w* released, the nut *r* unscrewed and the receptacle *d* drawn out upwards together with the wipers. The putting together of the machine is effected in an equally simple manner inversely.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. In a machine for making ice-cream or other frozen material having a central tube of a rotary inner receptacle guided on a fixed shaft in an outer receptacle, providing the fixed shaft or the central tube with collars, bearings or equivalent so that a cooling space is left between the shaft and tube, and providing passages or slots in the collars, bearings or equivalent so that the freezing material in the outer receptacle can pass to the cooling space for the purpose set forth.

2. The machine for making ice-cream or other frozen material constructed substantially as described with reference to the annexed drawings.

Dated this 29th day of April, 1924.

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[This Drawing is a reproduction of the Original on a reduced scale]

Fig.1.

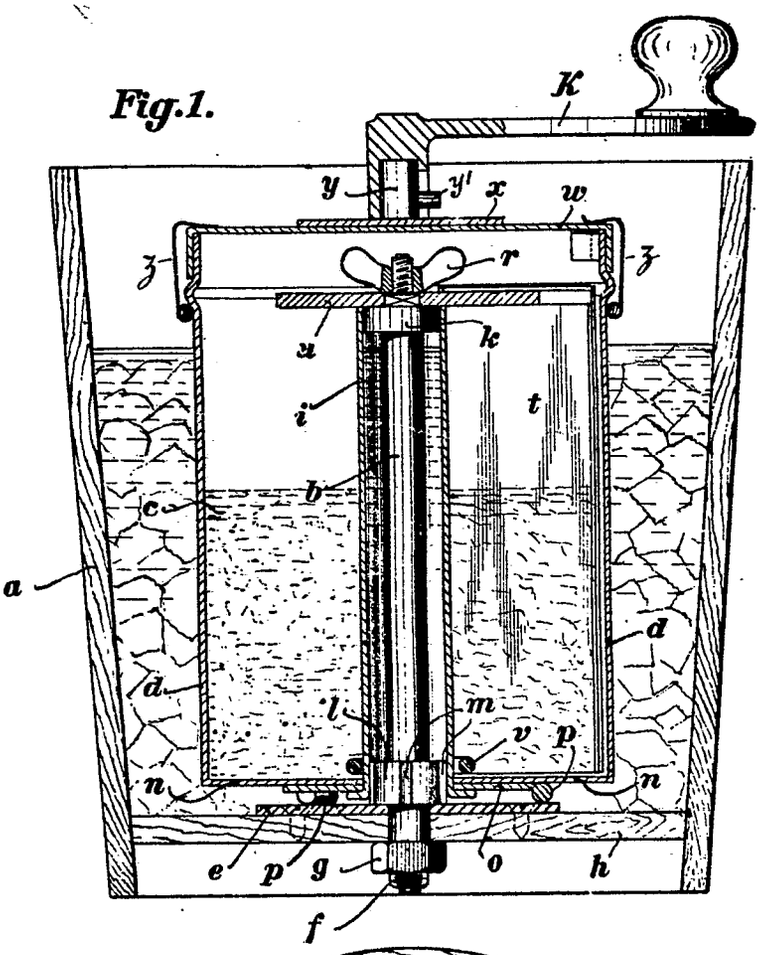
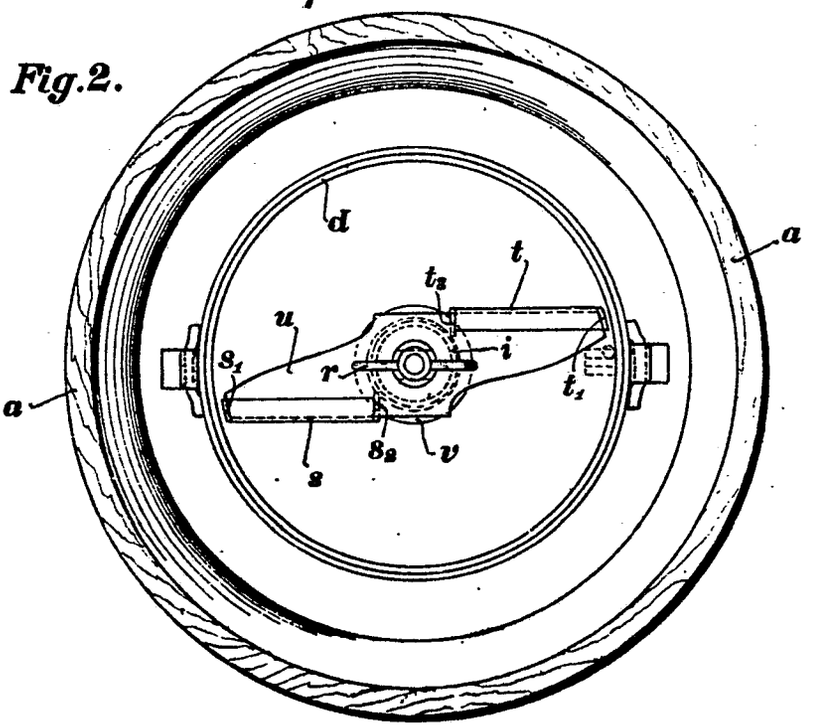


Fig.2.



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