No. 872,239. PATENTED NOV. 26, 1907.

J. M. KLINE.

POPCORN BUTTERING DEVICE.

APPLICATION FILED MAR. 11, 1907.

Fig. 1.

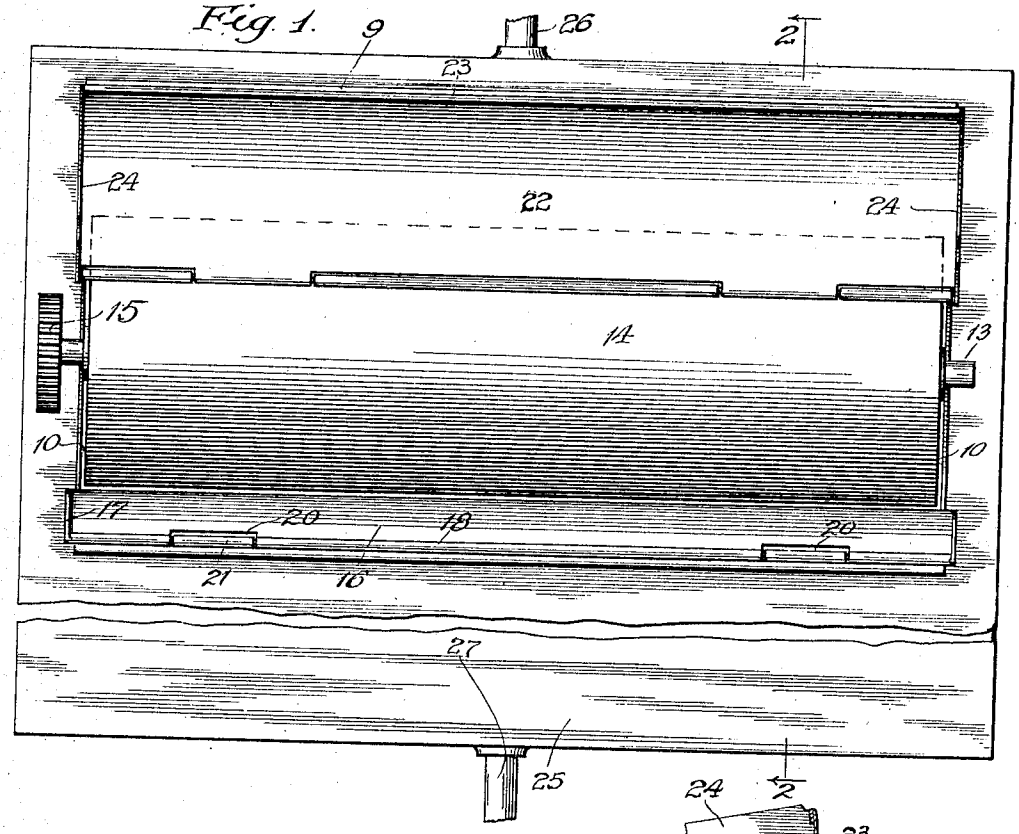
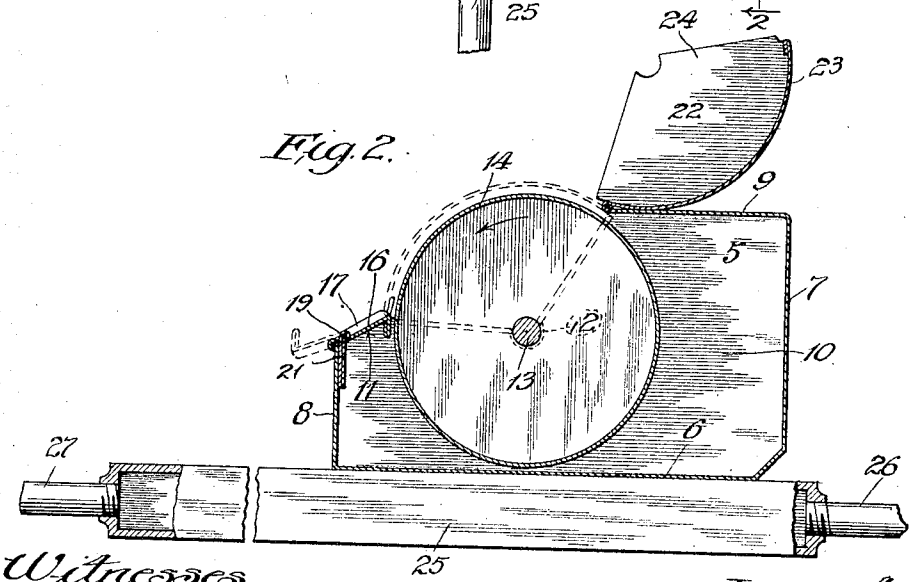


Fig. 2.



Witnesses

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JOHN M. KLINE, OF CHICAGO, ILLINOIS.

POPCORN-BUTTERING DEVICE.

No. 872,239. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed March 11, 1907. Serial No. 361,711.

To all whom it may concern:

Be it known that I, JOHN M. KLINE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Popcorn-Buttering Devices, of which the following is a specification.

My invention relates to improvements in devices for applying fluid substances to edible articles, and more particularly to popcorn buttering devices.

One of the objects of my invention is to provide a machine which is simple in construction, efficient and reliable in operation and designed to facilitate easy handling, cleaning and filling.

One specific object of my invention is to provide a machine in which a large quantity of liquid may be fed uniformly to the articles to which it is to be applied, by a rotating element or rotor, over and in contact with which the articles to be coated readily may be caused to pass.

A further specific object of my invention is to provide a construction in which a single element of the structure acts when the machine is in operation as a chute for directing the articles to be coated to the liquid supply rotor, and when the machine is out of use acts as a cover to protect the rotor and close the device against ingress of dust and other foreign substances.

Yet another specific object of my invention is to provide an improved casing for the rotor into which it may readily be inserted and removed.

Still another object of my invention is to provide for the constant uniform heating of the liquid and the coated articles to an effective degree.

Other and further objects of my invention will become apparent to those skilled in the art from the following description, taken in conjunction with the accompanying drawing, wherein;

Figure 1 is a top plan view of a machine embodying my invention in open position ready for operation; and, Fig. 2 is a transverse section on line 2—2 of Fig. 1.

Throughout said views like numerals of reference refer always to like parts.

In the specific embodiment of my invention shown I provide a casing body 5, preferably of sheet-metal, having preferably a flat bottom 6, a relatively high rear wall 7, a relatively lower front wall 8, a stationary top member 9 extending forward from the rear wall 7 a suitable distance, and end walls 10 connecting the front and rear walls and the stationary top and bottom portions of the structure. The end walls 10 are at their upper edges preferably upwardly inclined for a short distance from the front wall 8, as indicated at 11, and from the top of said incline and the front edge of the stationary top member 9 said end walls are preferably cut away each to a suitable point 12 where a rounded recess is made to afford a shaft bearing. In such bearings 12 rest the extremities of a shaft 13 which carries the rotor, in the form of a closed cylinder 14, extending practically from end to end of the casing, and in a vertical direction extending from a point adjacent the bottom 6 through the open portion of the casing in front of the stationary top wall 9 in close proximity to such front edge of the top wall. Preferably a gear 15 or other driving member, is provided upon one extremity of the shaft 13 to facilitate its rotation by power.

To the upper edge of the front piece 8 is pivotally connected a delivery plate 16, extending inward into close proximity to the surface of the cylinder 14, and at its end overlying the inclined portions 11 of the casing end, and upturned to provide flanges 17. An upward projection also extends along the front edge of the delivery plate 16, such projection being preferably provided as a roll of metal 18 enveloping a pivot rod 19, and cut away to provide apertures 20 for the reception of clips 21. Such clips embrace the bared portion of the rod 19 exposed in apertures 20, and the upper portions of such clips 21 constitute in effect continuations of the rolled rim 18. Preferably the apertures 20 are somewhat larger than is absolutely necessary to admit the clips 21 so as to form dip apertures for purposes hereafter described.

It will now be seen with reference to Fig. 2 that the delivery plate 16 may be thrown to the open position shown in dotted lines to increase the size of the opening through the casing, so as to admit material to fill the reservoir, and to permit of the ready removal of the cylinder 14 in order that the structure may be cleaned. When the delivery plate is in normal or closed position, the roller can not be lifted out of place, for the reason that the distance between the rear of the plate 17

and the front edge of the stationary top member 9 is less than the diameter of the cylinder.

To the front edge of the top 9 is suitably pivoted a structure 22 which operates both as a closure for the opening through which the portion of cylinder 14 is exposed, and also as a feed member or chute for supplying material to such cylinder.

Specifically the structure 22 comprises a curved plate 23, an end plate 24, of shape approximately corresponding with the cut away portions of the end plate 10, such member being thereby adapted when moved to the position shown in dotted lines in Fig. 2, to overlie the exposed end portions of the cylinder 14, and effect practically tight connection with the end walls 10 and delivery blade 16 of the casing structure, and when opened to the positions illustrated in full lines in Figs. 1 and 2, to constitute a feed chute for the material to be coated.

Where my device is employed as a machine for buttering pop-corn, I preferably utilize in conjunction with the device thus far described a hot plate 25, consisting of a hollow table or plate, preferably extending under the entire bottom 6 of the machine and to a suitable distance in front of its front wall 8, such hollow plate having communicating therewith inlet and outlet pipes 26 and 27 for the ingress and egress of steam.

In the operation of my device as a pop-corn butterer it will be understood that the body of the casing unoccupied by the cylinder constitutes a reservoir for liquid or melted butter, which is maintained in liquid state by suitable means, as by the heat imparted thereto from the hot-plate 25, to which steam of suitable temperature is supplied. The pop-corn may be fed either by hand or from an automatic popper on to the chute structure 22, and rolling down the curved wall thereof it is delivered onto the exposed portion of the periphery of cylinder or rotor, 14, which is rotated either by hand or by power in the direction indicated by the arrow on Fig. 2. It will be apparent that this cylinder, dipping into the liquid butter, carries a film thereof on its surface, and that the pop-corn coming in contact with the exposed surface receives a coating, more or less extensive, of the melted butter. The pop-corn carried around on the surface of the cylinder is delivered on to the plate 16 and falls therefrom under the forward portion of the hot-plate 25 so that it is maintained in a heated condition. It will be apparent also that any surplus butter which may be transferred to the rotating cylinder on the delivery plate 17 is held against overflow by the raised rim therearound and drips back into the reservoir through the hinge openings 20.

While I have herein described my device with particular reference to its utility as a butterer of pop-corn, it will be apparent that it will have equal utility as a means for applying liquid coatings to various other substances; and it will further be apparent that changes in the specific construction might be made without departure from the spirit and scope of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent, of the United States, is:

1. In a device of the character described, a reservoir higher at one side than at an opposite side, an opening in the top of the reservoir between the high side and the low side, a cylinder superposed above the bottom of said reservoir and having a top portion of its periphery exposed through and substantially filling said opening, and rotatable to move its peripheral surfaces from the high side toward the low side of the reservoir.

2. In a device of the character described, the combination of a cylinder, a casing larger than the cylinder, provided with an opening through which the portion of the periphery of said cylinder is exposed, and a cover for said opening serving as a material-chute when the exposed roller-surface is not inclosed thereby.

3. In a device of the character described, the combination of a casing having one side lower than the opposite side, a movable plate connected with the lower side, and a stationary top portion arranged with respect to the movable plate to leave between said elements an opening, and a cylinder of diameter greater than said opening removably arranged in bearings, said cylinder being of less diameter than the opening as increased by movement of the movable plate.

4. In a device of the character described, the combination of a casing provided with a top opening therein, a cylinder in the casing having a peripheral portion exposed through the said opening and substantially filling the same, and a closure for said opening pivoted to the casing arranged when in open position to constitute a means for directing material to the exposed portion of said cylinder.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

JOHN M. KLINE.

In the presence of—
GEO. T. MAY, JR.,
MARY F. ALLEN.