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MACHINE FOR AUTOMATICALLY
APPLYING ICING TO CAKES
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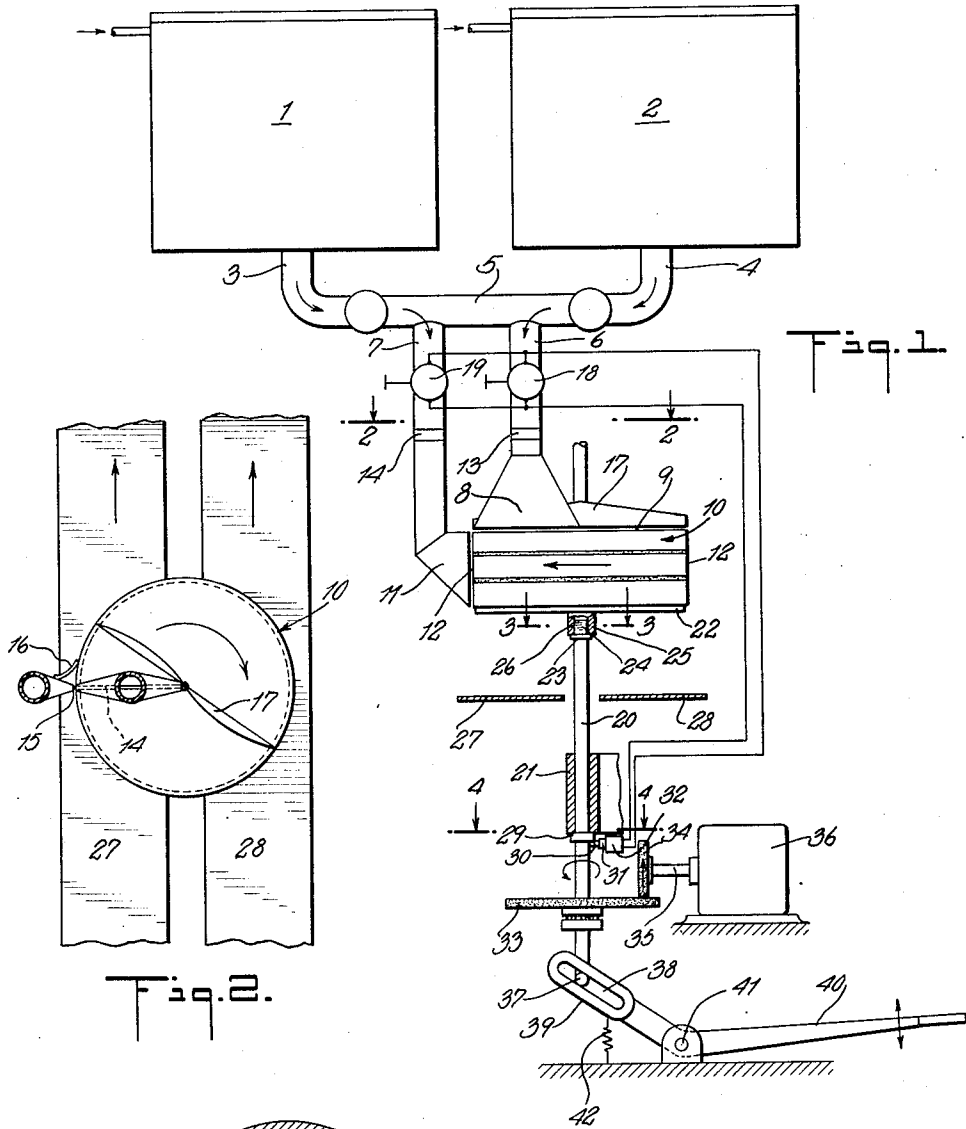


Fig. 2.

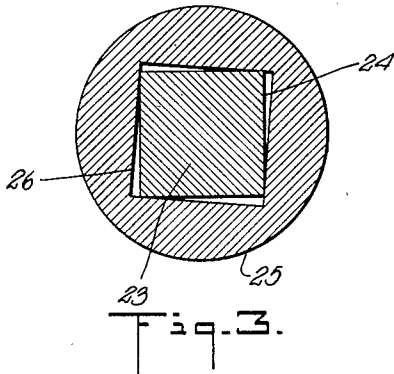


Fig. 3.

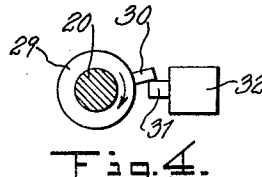


Fig. 4.

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MACHINE FOR AUTOMATICALLY APPLYING
ICING TO CAKES

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Substituted for abandoned application Serial No.
667,967, May 7, 1946. This application Novem-
ber 24, 1950, Serial No. 197,460

4 Claims. (Cl. 91—3)

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This application is a substitute for my abandoned application Serial No. 667,967, filed May 7, 1946.

This invention has reference to an improved apparatus for automatically applying icing or other material to the surface of cakes and other confectionary goods.

The apparatus is designed for extreme simplicity of construction and operation, and consists primarily of a circular rotatable support devised to sustain a cake, together with a pair of nozzles for applying icing under pressure to the top and side of the cake, then spreading and smoothing it, and depositing same on a conveyor—the entire operation, with the exception of the manually actuated mechanism for starting and stopping, being automatic.

In the accompanying drawings:

Fig. 1 is a side elevation, partly in section, of the complete machine.

Fig. 2 is a top plan view on lines 2—2 of Fig. 1.

Fig. 3 is a transverse section on lines 3—3 of Fig. 1, and

Fig. 4 is a similar view taken on lines 4—4 of Fig. 1.

In the drawings I have illustrated a construction which operates successfully in practice, but it will be understood that changes may be made, that the arrangement of parts may be varied, and that other instrumentalities may be employed which will fall within the scope of my invention. I do not therefore, wish to be limited in every instance to the precise form as herein shown and described.

The reference numerals 1 and 2 represent a pair of tanks adapted to containing icing under pressure. At the base of the tanks are outlets 3—4 merging into a common tubing 5 having a pair of depending pipes 6—7 which latter, in turn carry, respectively, a nozzle 8 for discharging icing against the top 9 of the cake 10, and a nozzle 11 for emitting icing at the side 12 of the said cake—the nozzles being detachable at points 13—14 to permit interchangeability of nozzles of varying sizes. In side elevation, the nozzles are frusto-conical in shape and converge to relatively fine slits—as 14'—15—at their discharge ends. Furthermore, the nozzles have associated therewith spreaders or templets 16—17.

Above the connecting points 13—14, depending pipes 6—7 are provided with suitable solenoid operated valves 18—19, the operation of which will be hereinafter explained.

Below and slightly to the right of the nozzles is a vertical shaft 20 which is sustained in the

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bracket-bearing 21. On top of the shaft is mounted a detachable disc-like support or carrier 22 designed to sustain cake 10. The precise separable mounting of the shaft and the support is obtained by squaring the upper terminal 23 of the shaft at 24 for clutch-like engagement with the interior of a concentric bushing 25, which is correspondingly squared, as at 26.

Beneath the support 22 are a pair of spaced endless conveyors 27—28, and directly below the bearing 21 a collar 29 with a lateral projection 30 is carried by the shaft 20 adapted for engagement with the lug 31 of a standard limit switch 32 which is in electrical circuit with valve 18—19.

On the lower extremity of shaft 20 is a friction disk 33 actuated by pulley 34 on shaft 35 of motor 36. And the lower end 37 of the shaft 20 is angularly deflected for engagement with the slot 38 formed in one extremity 39 of treadle 40, pivoted at 41.

In practice, treadle 40 is raised against the action of spring 42 to lower shaft 20 and the support 22 carried thereby. Cake 10 is positioned on the support and upon depressing the treadle, the shaft and treadle are elevated to the position shown in Fig. 1, i. e., the nozzles hugging the cake and disk 33 in engagement with pulley 34, which latter gearing imparts a suitable number of rotations—say, three, to the shaft. During these rotations, valves 18—19 are opened so as to permit the icing under pressure from tanks 1—2 to be extruded through slits 14'—15 of nozzles 8—11 against the top and side of the cake where it is uniformly and smoothly spread by the templets 16—17. Upon completion of the third revolution of the shaft, valves 18—19 are closed by the limit switch 32, treadle 40 is again elevated to lower the support 22 until bushing 25 enters the space between conveyors 27—28 and the top end of shaft 20 is below the conveyor—in other words, the separable clutch-like connection, comprising the bushing 25 and shaft terminal 23, is disengaged, with the result that the support carrying the cake is deposited on the conveyor belts and carried to any desired point.

I claim:

1. In an apparatus of the class described, a support, a vertically movable shaft operable therein, a cake carrier mounted at the top of the shaft, icing applicators for the top and side of the cake and disposed above the support, means for elevating the carrier whereby the cake thereon is within the zone of action of the applicators and for lowering the carrier, with the iced cake thereon, below the applicators, means for dis-

connecting the carrier and shaft when they are in their lowermost positions, and means for rotating the shaft.

2. In an apparatus of the class described, a support, a vertically movable shaft operable therein, a cake carrier removably mounted at the top of the shaft, icing applicators for the top and side of the cake and disposed above the support, a conveyor below the applicators and comprising two horizontally spaced members, said shaft being shiftable upwardly between the members to present the cake on the carrier to the action of the applicators and shiftable downwardly between the members to deposit the carrier with the iced cake on said members, means for disconnecting the carrier and shaft when they are in their lowermost positions, and means for rotating the shaft.

3. In an apparatus of the class described, a support, a vertically movable shaft operable therein and a cake carrier removably mounted at the top of the shaft, vertically and horizontally disposed stationary applicators arranged above the support, a templet adjacent the vertical applicator for spreading icing on the top of the cake, a conveyor below the applicators and comprising two horizontally spaced members, said shaft being shiftable upwardly between the members to present the cake on the carrier to the action of the applicators and shiftable downwardly between the members to deposit the carrier with the iced cake on said members, means for disconnecting the carrier and shaft when they are in their lowermost positions, and means for rotating the shaft.

4. A cake icing apparatus comprising a supply of icing under pressure, vertically and horizontally disposed nozzles, conduits connecting the icing supply with the nozzles, electrically operated valves in said conduits, a support, a conveyor comprising two spaced members, a vertically movable shaft mounted on said support and operable between the members, a cake carrier removably secured at the top of the shaft, a treadle at the lower terminal of the shaft, a horizontally disposed friction disc disposed on the shaft above the treadle, a vertically arranged motor-driven friction disc supported adjacent the shaft and adapted to engage said horizontal friction disc to rotate the same and thus rotate the shaft, energizing means including a switch on the support and means on the shaft cooperating with said switch to close the same when the shaft is moved upwardly upon depressing the treadle thereby effecting an opening of the valves, the upward movement of the shaft presenting a cake on the carrier in proximity to the nozzles and whereby upon releasing the treadle the shaft is lowered so as to deposit the carrier on said members, and open the switch thus closing the valves.

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REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
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2,481,242	Reget	Sept. 6, 1949