Dec. 3, 1929. C. NIELSEN 1,737,609

MIXING MACHINE

Filed May 28, 1928

Fig. 1.

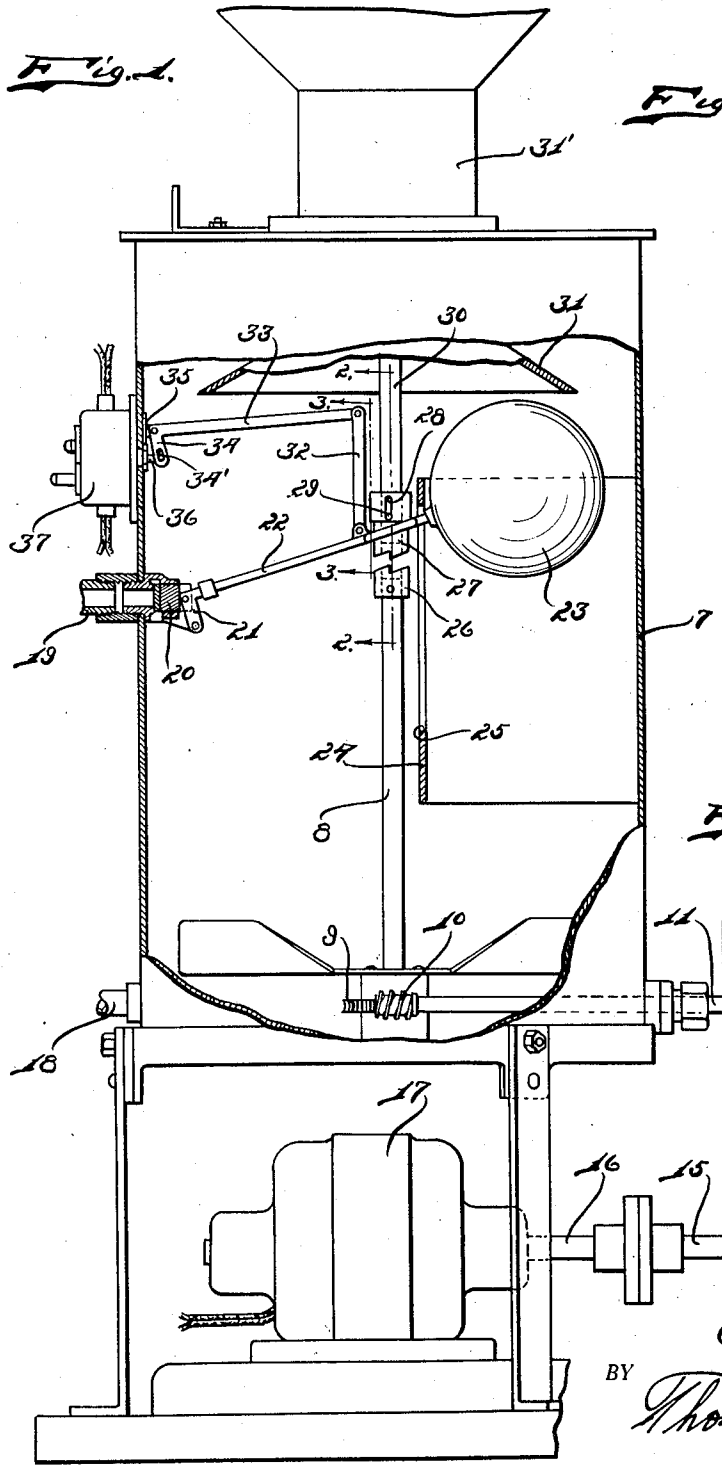


Fig. 2.

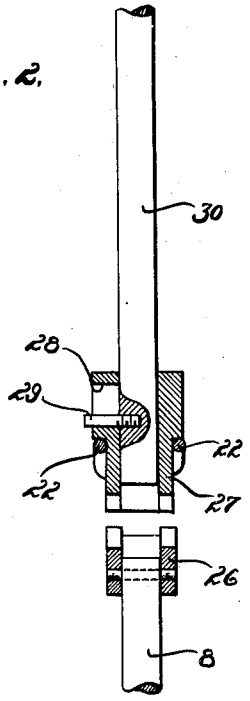
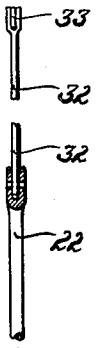


Fig. 3.



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UNITED STATES PATENT OFFICE

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MIXING MACHINE

Application filed May 28, 1928. Serial No. 281,074.

My invention relates to a new and useful improvement in a mixing machine and is an improvement over the mixing machine shown in my co-pending application, Serial No. 175,078, filed March 14, 1928.

In mixing machines of this class it is customary to have a motor driven mixing mechanism and a feeding mechanism for feeding a compound into the liquid to be mixed therewith.

In the co-pending application there is shown means of shutting off the inflow of the water and stopping the feeding mechanism when a certain height has been reached. The mixing mechanism, however, continues to run and serves no necessary purpose after the inflow of the water has ceased.

It is an object of the present invention to provide an automatic means for shutting off the motor upon the inflow of a predetermined amount of water into the mixing tank.

It is another object of the invention to provide an automatic circuit breaker of this class which will be simple in structure, economical of manufacture and highly efficient in use.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawings which form a part of this specification and in which,

Fig. 1 is a side elevational view of a mixing mechanism embodying the invention with parts broken away and parts shown in section.

Fig. 2 is a view taken on line 2—2 of Fig. 1.

Fig. 3 is a view taken on line 3—3 of Fig. 1.

In the drawings I have illustrated a tank 7 extending axially of which, projecting upwardly from the base thereof, is a shaft 8 carrying at its lower end a gear 9 meshing with the gear 10 which is fixedly mounted upon the shaft 11. Fixedly mounted on the shaft 11 is a sheave 12 connected by the belt 13 to a sheave 14 which is fixedly mounted upon the shaft 15 which is coupled to the shaft 16 of the motor 17. An outlet pipe 18 communicates with the tank 7 and an inlet pipe 19 is controlled by the valve 20 operated by the pivotally mounted bell crank 21 which is connected to the rod 22, upon the end of which is a float 23 engaging in the tank compartment forming member 24, a slot 25 being formed therein to accommodate the rod 22.

Mounted on the upper end of the shaft 8 is a section 26 of a clutch adapted to engage the section 27 which is axially movable on the shaft 30 which extends upwardly through the deflecting shield 31 into the hopper 31′. The head 27 is provided with an elongated slot 28 in which engages a pin 29 projecting outwardly from the shaft 30. The shaft 30 serves to operate the agitating mechanism in the hopper 31′ and upon an inflow of water sufficiently to raise the float 23 into the position shown in Fig. 1, the connection between the shafts 8 and 30 will be broken so that the agitating or feeding mechanism in the hopper 31′ will be rendered inoperative. At the same time, the valve head 20 is moved to closing position so that the inflow of the water through the pipe 19 into the tank 7 ceases. Pivotally connected at one end to the rod 22 and projecting upwardly therefrom, is a link 32, pivotally connected at its upper end to one end of an arm 33 of a bell crank, the other arm 34 being provided with an elongated slot 34′ and connected to the flange 36 which is adapted to operate the switch 37 controlling the motor 17. This bell crank is pivotally mounted on a lug 35 projecting inwardly from the inner surface of the tank 7.

When the float 23 moves to the position shown in Fig. 1 the bell crank will be rocked so as to break the circuit to the motor 17 and as the float 23 moves downwardly as the water in the tank 7 is lowered, the switch will again be closed, thus setting the motor into operation.

The construction and operation is such that the separation of the members 27 and 26 and the moving of the valve plug 20 to closing position will be effected simultaneously with the opening of the switch 37. Similarly the

switch 37 will be closed simultaneously with the engagement of the members 27 and 26 and the movement of the valve head 20 to open position.

In this manner there is provided an automatic means for controlling not only the feeding mechanism, but also for controlling the operation of the motor which is used to drive the feeding mechanism of the mixing mechanism.

While I have illustrated and described the preferred form of my invention, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a mixing machine of the class described: a container; a shaft; means for rotating said shaft; agitating mechanism for agitating material delivered into said container and operated by said shaft; a conduit for delivering liquid into said container; a control valve for controlling delivery of liquid from said conduit into said container; control means for controlling the operation of said rotating means; and means for operating said control valve and said control means upon the delivery of a predetermined amount of liquid into said container.

2. In a mixing machine of the class described; a container; a shaft; means for rotating said shaft; agitating mechanism for agitating material delivered into said container and operated by said shaft; a conduit for delivering liquid into said container; a control valve for controlling delivery of liquid from said conduit into said container; control means for controlling the operation of said rotating means; and means for simultaneously operating said control valve and said control means upon the delivery of a predetermined amount of liquid into said container.

3. In a mixing machine of the class described: a container; a shaft; means for rotating said shaft; agitating mechanism for agitating material delivered into said container and operated by said shaft; a conduit for delivering liquid into said container; a control valve for controlling delivery of liquid from said conduit into said container; control means for controlling the operation of said rotating means; and means for simultaneously operating said control valve and said control means upon the delivery of a predetermined amount of liquid into said container, and for, at the same time, rendering said agitating mechanism inoperative.

4. In a mixing machine of the class described: a container; a shaft in said container; an agitator operable upon rotation of said shaft; a motor for rotating said shaft; a conduit for delivering liquid into said container; a switch for controlling operation of said motor; a float in said container; and means for connecting said float to said switch for opening said switch upon the delivery of a predetermined amount of liquid into said container.

In testimony whereof I have signed the foregoing specification.

CLAUDIUS NIELSEN.