W. P. ROBERTSON.

FOOD AND BEVERAGE MIXER.

APPLICATION FILED DEC. 21, 1915.

1,227,671.

Patented May 29, 1917.

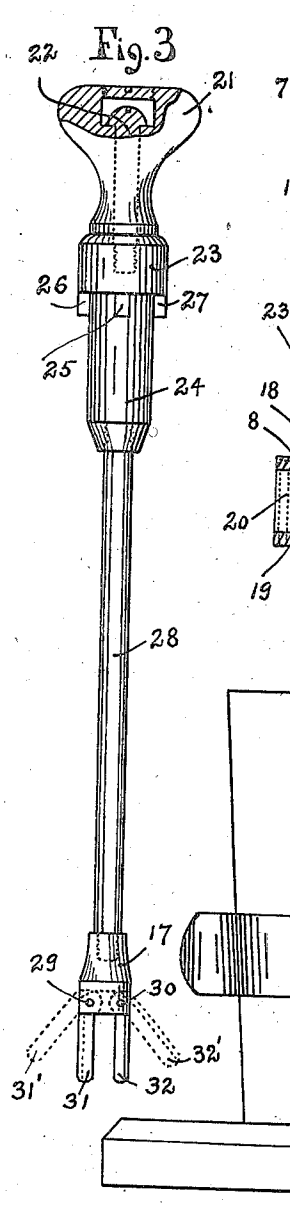



Fig. 3

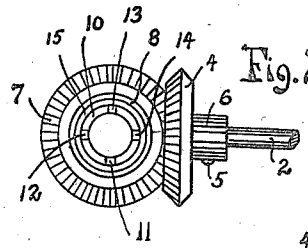



Fig. 2

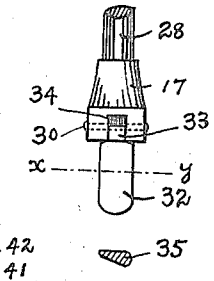



Fig. 4

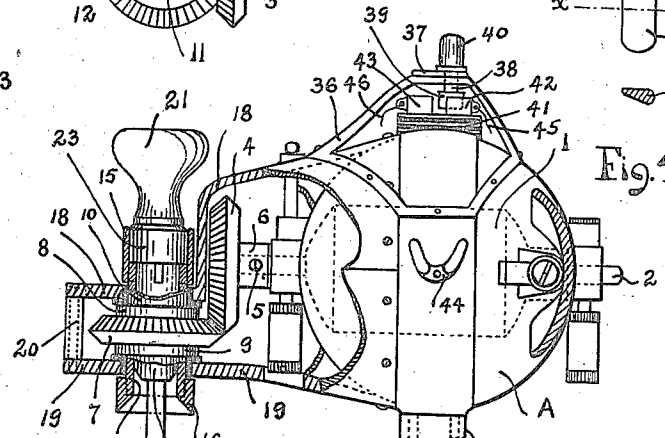
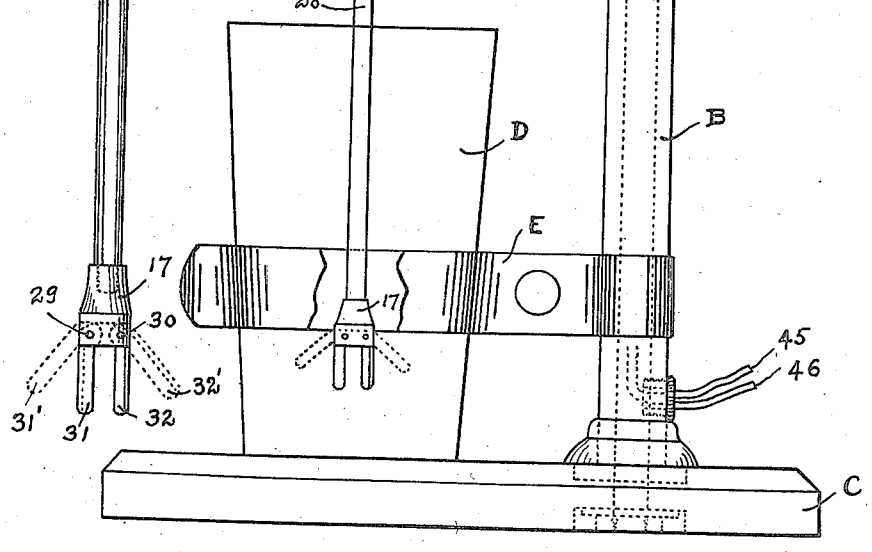



Fig. 1




Inventor

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# UNITED STATES PATENT OFFICE.

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## FOOD AND BEVERAGE MIXER.

1,227,671. Specification of Letters Patent. Patented May 29, 1917.

Application filed December 21, 1915. Serial No. 67,964.

*To all whom it may concern:*

Be it known that I, WILLIAM P. ROBERTSON, a citizen of the United States, and a resident of the borough of Manhattan, city of New York, county and State of New York, have invented new and useful Improvements in Food and Beverage Mixers, of which the following is a specification.

My invention relates generally to food and beverage mixing and beating devices designed to thoroughly mix and amalgamate flavoring juices and extracts in combination with milk, malted milk, egg, cream or any other liquid or semi-liquid, singly or in combination.

One object of my invention is to provide a device of the character described, simple and compact in construction and sanitary in operation.

Another object of my invention is to provide simple means for holding the glass or container in position to receive the rotating agitator, without the necessity of lifting the glass or container into proper position with respect to the agitator mechanism, or of depressing the entire operating mechanism in order to place the agitator into proper mixing position in the glass or container, after which said operating mechanism and the agitator attached thereto must be raised in order to release the glass or other container.

Another object of my invention is to provide an independent agitator that will engage rotating mechanism to which it can be simply attached or from which rotating mechanism said agitator may be quickly disengaged and withdrawn for the purpose of cleaning.

Another object of my invention is to provide an effective agitator tip having pendents that are thrown outward by centrifugal force when the agitator is rotated and that will drop to a vertical position when the agitator is disengaged from the operating mechanism.

Other and further objects of my invention will be apparent from the detailed description to follow.

As showing a specific embodiment of my invention reference is made to the drawing forming a part of this specification in which drawing,

Figure 1 shows the apparatus in operative position, certain parts being cut away to more clearly show the details of the various working parts and connections.

Fig. 2 shows a plan view of the position and engagements of the miter gears.

Fig. 3 shows an enlarged view of the removable agitator and agitator tip.

Fig. 4 shows another side elevation of the agitator tip and its construction.

In Fig. 1 A is an incased electric motor of well known design having its field, armature, commutator, commutator brushes, armature shaft, bearings for same and other equipments making up a complete electric motor. 1, shown in dotted outline, is the armature and 2 the armature shaft. The motor A is firmly attached to a tubular metal upright B by means of a screw-clamp 3, said upright B being firmly attached at its lower end to a marble or other solid base C. D represents the container for holding the food or beverage to be mixed or beaten, the container being securely held in position by an expanding metal holder E which is fastened securely to the upright B.

At one end of the armature shaft 2 is attached a miter gear 4 by means of a screw 5 passing through a hub 6. Thus the miter gear 4 may be moved forward or backward and set in the best operative position with reference to miter gear 7 with which it engages. The miter gear 7 has an upper hub 8 and a lower hub 9. Through the center of the hubs 8 and 9 of the miter gear 7 is placed a hollow tube or shaft 10 firmly attached to hubs 8 and 9 and forming a part thereof. The tube 10 extends for a sufficient distance above the hub 8 and below the hub 9 to act as bearings for the miter gear 7 and also to allow four notches 11, 12, 13 and 14 to be cut in its upper circumference and above the upper bearing, as shown in Fig. 2.

Screwed to the upper end of the tube 10 is a tubular cap-piece 15 covering on the outer circumference of the tube 10 the four notches—or slots—before mentioned and serving also as a guide and holder for the detachable agitator which is shown in operative position in Fig. 1 and in detail in Fig. 3. To the lower end of the tube 10, and below the bearing, is screwed a circular cap 16, the lower end of said cap being funnel-shaped, which serves to better guide the

agitator tip 17 through the tube 10 when the agitator is removed.

Firmly attached to the casing of the motor A is an upper metal support 18 in which a hole is drilled and properly bushed (as shown in full black) to serve as an upper bearing for the tube 10. The upper surface of the hub 8 being of greater diameter than the tube 10 serves as an under-bearing and thus prevents any upward movement of the miter gear 7. Firmly attached to the casing of the motor A is a lower metal support 19 in which a hole is drilled and properly bushed (as shown in full black) to serve as a lower bearing for the tube 10; the lower surface of the hub 9 being of greater diameter than the tube 10 serves as an upper bearing and thus prevents any downward movement of the miter gear 7. The upper metal support 18 and the lower metal support 19 are firmly held together at their outer ends by suitable means, such as a metal tube 20 through which a screw is passed, binding the upper and lower supports together. It will thus be seen that the tube 10 will be a hollow shaft which will readily revolve in its bearings upon the revolutions of the miter gear 7 to which it is attached.

In Fig. 1 the detachable agitator is shown in its operative position extending through the tube 10 and into the container D. The means for passing the agitator through the tube 10 and the means for connecting it to the tube 10 so that it may revolve when the tube revolves will be better understood by reference to Fig. 3 in which 21 is the handle piece which turns freely about a shaft 22 which latter is firmly attached to a head 23. On the underside of the head 23 and extending down a short distance along what I call the under-head 24 are four projections or lugs, only three of which show, namely, 25, 26 and 27, there being a fourth on the opposite side to lug 25. Firmly attached to the under-head 24 is an agitator shaft 28 to the lower end of which latter is screwed the agitator tip 17.

Various forms of agitator tips may be used but I prefer the form as shown in Fig. 3 and Fig. 4 having a beveled head 17 to the lower end of which is pivoted, by means of pins 29 and 30 respectively the pendent pieces 31 and 32 respectively. The construction and means for attaching the pendent pieces is more clearly shown in Fig. 4, in which a slot is shown cut through the underside of the head 17 to receive a projection forming a part of the pendent 32. The projection is beveled at its upper and outer corner which bevel engages with the under surface of the slot, thus limiting the outward throw of the pendents, due to centrifugal force when the agitator shaft is revolved, as shown in Fig. 3—31′ and 32′. The inner sides of the pendents are cut at an angle with reference to their outer sides, as shown by section 35 through $x$—$y$ Fig. 4.

Attached to the top side of the casing of the motor A is a metal bracket 36 which furnishes support and incasement for the electric switch connections for starting and stopping the motor. This bracket also serves the purpose of holding such advertising announcements as may be desired. It is evident that numerous forms of make and break electric switches may be used and that said switch may be placed in any convenient position other than shown. The form shown in Fig. 1 operates as follows: Through a slotted plate 37 forming the top of bracket 36 is passed a metal slide piece 38 to the lower end of which is attached and insulated therefrom a metal strip 39 which is adapted to engage the knife-switches 42 and 43 secured to the insulating block 41. To the upper end of the slide piece is attached a push-button of insulating material 40. The electric current wires 45 and 46 are suitably secured to the knife-switches 42 and 43 respectively.

When the strip 39 engages only the switch 42 no current can pass between 42 and 43, while by sliding 38 to the left, by means of push-button 40, electrical connection is made between 42 and 43 through 38. A small pronged bracket 44 is attached to the side of the motor A for the purpose of holding the agitator in convenient position when not in use.

What I claim is:

1. In a device of the class described, the combination with an agitator comprising a shaft and an agitating member, of tubular propelling means adapted to engage said shaft and drive said agitating member, said tubular propelling means and said agitator being so constructed that said agitating member may be inserted therethrough and withdrawn therefrom.

2. In a device of the class described, the combination of propelling means, and agitating means comprising a shaft and expansible agitating members engaged and driven by said propelling means and adapted to be withdrawn therethrough.

3. In a device of the class described, a hollow member, means for rotating the same, and agitating means that may be passed in and through said hollow member and subsequently withdrawn therefrom.

4. In a device of the class described the combination of a standard, an electric motor secured thereto, gears driven by said motor, a removable agitator adapted to be inserted in and rotated by one of said gears and withdrawn therefrom, and expansible members secured to the tip of said agitator.

5. In a device of the class described a gear having a hollow shaft, means for rotating said gear, an agitator adapted to

pass through and be engaged by said hollow shaft, and means carried by said agitator for engaging said hollow shaft and for permitting the insertion or withdrawal of said agitator from said hollow shaft while rotating.

6. In a device of the class described the combination of a standard, an electric motor secured to said standard, a hollow shaft driven by said motor, and an agitator adapted to be inserted in and engaged by said hollow shaft and withdrawn therefrom.

7. In a device of the class described, the combination of a standard, an electric motor secured to said standard, a hollow shaft driven by said motor, and an agitator comprising a swiveled handle piece, a shaft and an agitating member adapted to be inserted in and engaged by said hollow shaft and withdrawn therefrom.

8. In a device of the class described the combination of a standard, an electric motor secured to said standard, a hollow shaft, means driven by said motor for rotating said hollow shaft, agitating means comprising a shaft and agitating members attached thereto that may be inserted in or withdrawn through said hollow shaft, and means whereby said agitating means will be driven from said hollow shaft.

This specification signed and witnessed this 18th day of December, A. D. 1915.

WILLIAM P. ROBERTSON.

Signed in the presence of—

W. C. MARGESON,

G. MCGRANN.