H. F. BENNETT.

ELECTRIC AGITATOR.

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1,100,648. Patented June 16, 1914.

Fig. 1

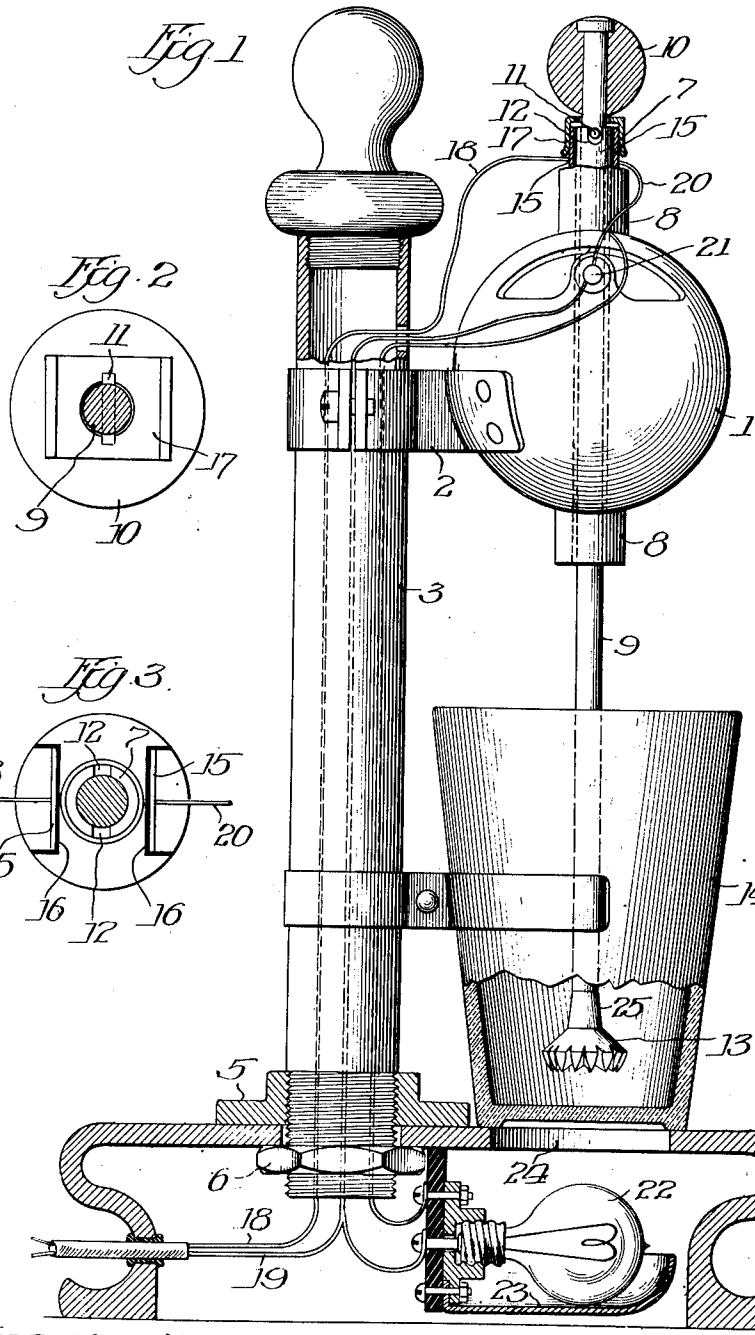


Fig. 2

Fig. 3.

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UNITED STATES PATENT OFFICE.

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ELECTRIC AGITATOR.

1,100,648. Specification of Letters Patent. Patented June 16, 1914.

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To all whom it may concern:

Be it known that I, HARRY F. BENNETT, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Electric Agitators, of which the following is a full, clear, concise, and exact description.

My invention relates to an electrically driven agitating device, such, for example, as is used for mixing or stirring liquid beverages or the like.

One of the objects of my invention is to provide a device in which the electric motor is held in a fixed position and in which the agitating rod driven thereby can be raised and lowered independently of the motor.

Another object of my invention is to provide a device in which the circuit of the motor can be automatically controlled merely by lowering or raising the agitating rod in the act of introducing the latter into or removing it from the glass or other vessel in which the beverage is contained.

Another object of my invention is to provide a device which is of simple and inexpensive construction, and in which the current conducting wires are not raised or lowered in opening and closing the circuit of the motor.

Another object of my invention is to provide an agitating device in which the liquid contained in the vessel is illuminated during the agitation thereof for the purpose of producing a pleasing impression upon the eye.

These and other objects of my invention and the several features thereof may be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is an elevation, partly in section and partly broken away, of a device embodying my invention; Fig. 2 is an enlarged section through the upper end of the agitating rod, showing an underside view of the contact bridging member; and Fig. 3 is an enlarged, detail, plan view of the switch contacts supported at the upper end of the motor, the agitating rod being shown in cross section.

Like characters of reference refer to like parts throughout the several figures of the drawings.

The electric motor 1, of any suitable construction, is supported upon a bracket 2 which is clamped to a hollow post 3. The post 3 is preferably a metal tube threaded at its lower end and secured to the hollow base 4 by clamping nuts 5 and 6.

The shaft 7 of the motor armature is tubular and is journaled in bearings 8 at the upper and lower ends of the motor. Extending loosely through said tubular armature shaft is an agitator rod 9 provided with a knob 10 at its upper end, by which the rod 9 can be lifted. The cross-section of said shaft and rod is preferably circular, as shown in Fig. 3, in order that the rod may not be coupled to the shaft except in the lowermost position of the rod shown in Fig. 1. In such case some convenient device for coupling the rod to the shaft may be employed, as for example that shown in the drawings, in which a pin 11 projecting from the rod near the upper end thereof is adapted to engage with notches 12 in the upper end of the shaft 7. The lower end of the rod 9 is provided with an enlarged head 13, which is preferably notched at its bottom portion in such manner as to tend to impart a downward and outward as well as a rotary motion to a liquid held in the glass or other vessel 14. After the vessel 14 is placed upon the base 4, the rod 9 is lowered to the position shown in Fig. 1, whereupon said rod becomes coupled to the rotary armature shaft 7.

The circuit of the motor may be arranged to be closed in any suitable manner, but I preferably arrange the motor circuit in such manner that it may be automatically closed by lowering the rod 9. In the embodiment of the invention shown in the drawings, there is mounted upon the upper bearing 8, and at opposite sides thereof, two metallic contact plates, insulated from their supports by insulating material 16. Loosely carried by the rod 9 between the pin 11 and the knob 10 is a metallic bridging switch member 17 having depending flanges adapted to engage the contact plates 15 in one position of rotation of said switch member. If it be desired to lower the rod 9 without closing the circuit of the motor, it can be done by turning the bridging member 17 at right angles to its normal position, in which case

contact is not made with the contact plates. As shown in the drawings, the conductor 18 of the pair of conductors 18, 19, extends to one of the contact plates 15, and a conductor 20 connects the other contact plate to one of the brushes of the commutator 21. The other conductor 19 extends to the opposite commutator brush. It thus appears that with the switch member 17 bridging the contacts 15, 15, as shown in Fig. 1, the circuit of the motor is closed and the rod 9 is at the same time coupled to the rotating armature shaft 7.

Mounted in the hollow base 4 of the machine, underneath the vessel 14, is an incandescent lamp 22 and its reflector 23. The base 4 is provided with a window 24 over which the glass 14 is placed, whereby the light from lamp 22 illuminates the liquid in the glass and produces a very pleasing effect upon the eye as the liquid is agitated. The lamp may be connected in shunt of the motor armature, as shown in Fig. 1, in order that the lamp 22 may be lighted only when the circuit of the motor is closed.

The upper surface of the agitator head 13 where it is secured to the rod 9 is preferably tapered, as at 25, to provide means by which the rod 9 is held in its raised position. That is to say, the conical portion 25 frictionally engages the bore of the bearing 8 and the rod is thus frictionally held in its elevated position but may again be lowered by merely pressing down upon the knob 10.

While I have illustrated and described the preferred embodiment of my invention, it is obvious that many features thereof may be modified, and hence I do not wish to be understood as limiting my invention to the specific structure above described.

What I claim is:—

1. In an agitator, the combination with an electric motor having a tubular armature shaft, of an agitating rod extending loosely through said tubular shaft, and means whereby said rod may be coupled to or uncoupled from said shaft.

2. In an agitator, the combination with an electric motor having a vertically disposed tubular armature shaft, of a longitudinally movable vertical agitating rod loosely inclosed by said shaft and provided near its upper end with means whereby the rod may be coupled to said armature shaft and at its lower end with an enlarged head.

3. In an agitator, the combination with an electric motor having a vertically disposed tubular armature shaft, of a longitudinally movable vertical agitating rod loosely inclosed by said shaft, and a switch member carried by said rod and adapted to close the circuit of said motor in the lowered position of said rod.

4. In an agitator, the combination with an electric motor having a vertically disposed tubular armature shaft, of a longitudinally movable vertical agitating rod loosely inclosed by said shaft, means supporting said rod in its raised position, and a switch member carried by said rod and adapted to close the circuit of said motor in the lowered position of said rod.

5. In an agitator, the combination with a fixed standard provided with a supporting base, of an electric motor secured to said standard in fixed relation to said base above the latter, said motor having a vertically disposed tubular armature, an agitating rod extending loosely through said tubular armature and adjustable toward and from said base, and means for operatively connecting said rod to said armature in the lowered position of the rod.

6. In an agitator, the combination with a fixed standard provided with a supporting base, of an electric motor secured to said standard in fixed relation to said base above the latter, said motor having a vertically disposed tubular armature, an agitating rod extending loosely through said tubular armature and adjustable toward and from said base, and means for operatively connecting said rod to said armature and for automatically closing the circuit of said motor in the lowered position of the rod.

7. In an agitator, the combination of an electric motor having a vertically disposed tubular armature shaft, a vertically adjustable agitating rod extending through said tubular armature, and a switch member carried by said rod and adapted to close the circuit of said motor in the lowered position of said rod.

8. In an agitator, the combination of an electric motor having an upper and a lower armature bearing, a vertically disposed tubular armature shaft journaled in said bearings, a longitudinally movable vertical agitating rod extending through said tubular armature, contact pieces insulatedly supported upon said upper bearing, and a bridging member carried by said rod and adapted, in the lowered position of said rod, to complete a circuit for said motor through said contacts.

9. In an agitator, the combination of a hollow base for supporting a liquid-containing vessel, said base having a window above which said vessel is adapted to be supported, an incandescent lamp mounted in said hollow base, an electric motor supported above said base, and an agitator driven by said motor for agitating the liquid in said vessel.

10. In an agitator, the combination of a hollow base for supporting a liquid-containing vessel, said base having a window above which said vessel is adapted to be supported,

an incandescent lamp mounted in said hollow base, an electric motor supported above said base, said lamp having a circuit arranged to be closed by the closure of the circuit of the motor, and a vertically adjustable agitator driven by said motor for agitating the liquid in said vessel.

In witness whereof, I hereunto subscribe my name this 19th day of February, A. D., 1914.

HARRY F. BENNETT.

Witnesses:
McCLELLAN YOUNG,
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