W. G. SHELTON.

DRINK MIXER.

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1,382,683. Patented June 28, 1921.

Fig. 1.

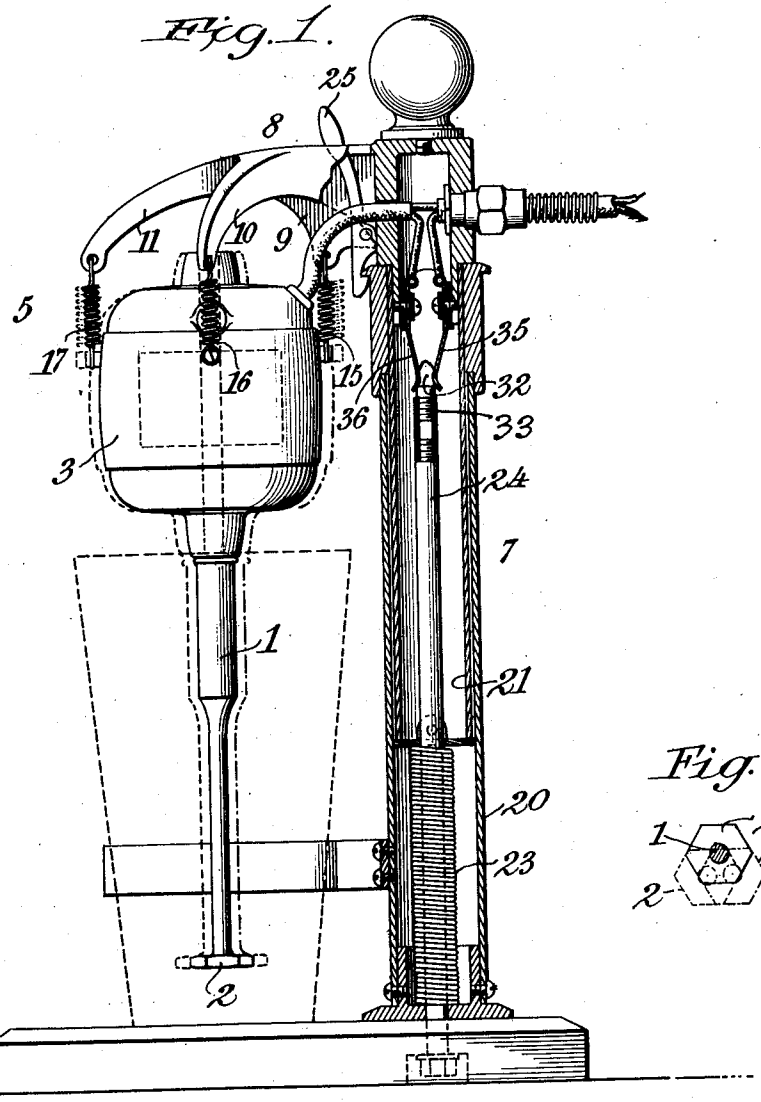
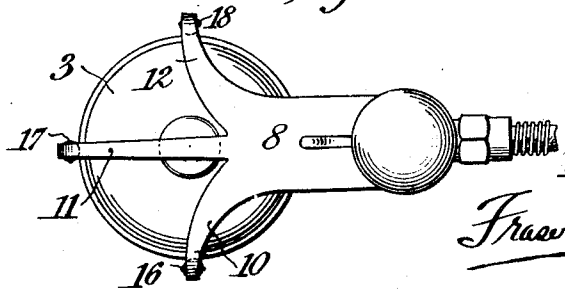


Fig. 3.

Fig. 2.



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DRINK-MIXER.

1,382,683. Specification of Letters Patent. Patented June 28, 1921.

Application filed February 3, 1921. Serial No. 442,106.

To all whom it may concern:

Be it known that I, WILLIAM GENTRY SHELTON, a citizen of the United States of America, residing in the borough of Manhattan, city, county, and State of New York, have invented certan new and useful Improvements in Drink-Mixers, of which the following is a specification.

This invention relates to stirrers, commonly designated "drink-mixers", and aims to provide improvements therein.

The invention provides a "drink-mixer" which is of simple and durable construction, well adapted to give good service under the more or less rough and ready usage which such devices undergo in the hands of attendants at soda fountains, bars, etc.

The invention further provides a device wherein the mixing may be thoroughly and more quickly done than by the use of drink-mixers heretofore commonly in use.

The invention further provides novel features of combination, and sub-combination, hereinafter more fully described, for effecting, in an improved manner, the functions of a drink-mixer.

An embodiment of the invention is illustrated in the accompanying drawing, wherein:

Figure 1 is an elevation (partly in section) of said embodiment.

Fig. 2 is a top plan view of the construction shown in Fig. 1.

Fig. 3 is a diagrammatical view, illustrating the movement of the stirrer, during mixing.

Referring to said drawings, numeral 1 designates a stirrer of any suitable type, usually long and slender, so as to project into a glass, and with a knob 2 at its lower end, as shown. The stirrer is driven by suitable means 3, and preferably at high speed, preferably by an electric motor, on the rotor of which the stirrer is preferably directly mounted and driven.

5 designates the suspension for the stirrer. The suspension is such as to permit some yielding of the stirrer off of its axis, whereby shocks and vibrations of the stirrer in rotation are absorbed in the suspension, thereby relieving the bearings of the stirrer and associated part, and whereby the stirrer, in whole or in part, during rotation, moves off of its axis of rotation, and revolves or moves in a circle around its axis in the still position, and thereby effects a more rapid mixing of the substances to be mixed. The axis of the stirrer, in its orbit, may generate a cylinder or a cone (see Fig. 3 and the dotted lines Fig. 1).

When the stirrer is mounted directly on the rotor of an electric motor, as is preferably the case, the suspension of the stirrer is preferably through the motor casing.

The suspension 5 may conveniently comprise a pillar or standard 7, having an overhanging arm 8, preferably with four right-angle branches 9, 10, 11, 12, and, between the four branches and the motor casing, (or other part carrying the stirrer) there are arranged four flexible links or connections 15, 16, 17, 18, which may be in the form of coiled springs. Stiff coiled springs have been found to give good results.

A suspension having more links than two, such as a four-point suspension, has been found to have an advantage, as the movement, especially the revolution of the stirrer, is found to take place steadily, and also is found to admit of a movement of the stirrer, whereby the axis thereof generates a cylinder. Any other form of suspension, however, admitting of a steady revolution, during rotation of the stirrer, or its mixing end, could be used instead of that just described.

Conveniently, the pillar or standard 7 is made of two telescoping tubular parts, 20, 21, extensible to withdraw the stirrer from a glass and collapsible to bring the stirrer into a glass. The two telescoping parts 20, 21, are conveniently normally pressed to extended position by means of a coil-spring 23, guided on a rod 24 within the said tubular parts, and a latch or catch 25 is conveniently provided for holding the parts 20, 21, in collapsed position, with the stirrer lowered in position for mixing.

Means 30 are also preferably provided for automatically making an electric circuit to energize the motor when the telescoping parts 20, 21 are collapsed. This means 30 conveniently comprises a conducting piece 32, connected, by an insulating nipple or part 33, to an end of the rod 24. One of the telescoping parts 20, 21—the part 21 in the embodiment shown—carries two terminals

35, 36, connected to the ends of a break in a leading wire connected to the motor, and the circuit to the motor is adapted to be completed between the two terminals 35, 36 through the conducting-piece 32.

Operation.

When the stirrer 1 is rotated in a liquid, or a liquid and solid, or semi-solid, there is a reaction which causes the stirrer to veer off of its axis, where the suspension is flexible, according to the present idea, and the cumulative effect of these reactions is to cause the axis of the stirrer to revolve in a circle, so that its axis generates a cylinder or cone. The flexibility of the suspension admits of the motor or other part carrying the stirrer to yield, and also absorbs the vibratory forces and relieves the bearings of the stirrer or motor from excessive shock or strain. The revolution of the stirrer, or its free end, during rotation, causes the stirrer to move around to different parts of the materials to be mixed, and, hence, produces a mixing in a much shorter time than if the stirrer did not revolve.

Where the device embodies the telescoping standard and the automatic electric switch, the stirrer is inserted in a glass, and the rotation thereof simultaneously begun, by simply pressing on the top of the standard, the parts 20, 21 collapsing under the resistance of the spring 23, and the part 32, on the rod 24, making contact between the terminals 35, 36, in the leading-in wire to the motor. The catch or latch 25 holds the parts in collapsed position during the stirring or mixing operation. To remove the glass and stop the motor, it is simply necessary to trip the catch 25, whereupon the spring 23 extends the telescoping parts 20, and breaks the circuit to the motor.

The inventive idea is capable of receiving other embodiment than that herein specifically illustrated and described.

What is claimed is:

1. A drink-mixer, comprising an elongated stirrer, and a relatively free suspension for said stirrer, adapted to easily yield under the reactions to the rotation of said stirrer in a liquid mixture, in such manner and that the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

2. A drink-mixer, comprising an elongated stirrer, and a more-than-two-point suspension for said stirrer, adapted to yield in such manner and degree under the reactions to the rotation of said stirrer in a liquid mixture, and that the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

3. A drink-mixer, comprising an elongated stirrer, and a more-than-two-point elastic suspension for said stirrer, adapted to yield in such manner and degree under the reactions to rotation of said stirrer in a liquid mixture, and that the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

4. A drink-mixer, comprising an elongated stirrer, and a four-point suspension for said stirrer, adapted to yield in such manner and degree under the reactions to rotation of said stirrer in a liquid mixture, and that the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

5. A drink-mixer, comprising an elongated stirrer, and a four-point elastic suspension for said stirrer, adapted to yield in such manner and degree under the reactions to rotation of said stirrer in a liquid mixture, and that the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

6. A drink-mixer, comprising an elongated stirrer, and a four-point suspension for said stirrer, adapted to yield in such manner and degree under the reactions to rotation of said stirrer in a liquid mixture, and that the axis of said rotary stirrer may revolve and thereby generate the surface of a cone or cylinder, said four points being at the corners of a square.

7. A drink-mixer, comprising a motor, an elongated stirrer mounted on said motor, and a suspension for said motor, adapted to yield in such manner and degree under the reactions to rotation of said stirrer in a liquid mixture, that the wear and tear on the motor is lessened, and the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

8. A drink-mixer, comprising a motor, an elongated stirrer mounted on said motor, and a more-than-two-point suspension for said motor, adapted to yield in such manner and degree under the reactions to rotation of said stirrer, in a liquid mixture, that the wear and tear on the motor is lessened, and the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

9. A drink-mixer, comprising a motor, an elongated stirrer mounted on said motor, and a four-point suspension for said motor, adapted to yield in such manner and degree under the reactions to rotation of said stirrer in a liquid mixture, that the wear and tear on the motor is lessened, and the axis of said rotary stirrer may revolve, and thereby generate the surface of a cone or cylinder.

10. A drink-mixer, comprising an electric motor, a support for said motor, and a switch, said support comprising telescoping parts, a rod, and said switch comprising a pair of terminals, on one of said telescoping parts, and a conducting head on the end of

said rod adapted to make a circuit through said terminals in a determined position of said telescoping parts.

11. A drink mixer, comprising an electric motor, a support for said motor, and a switch, said support comprising telescoping parts, a spring reacting between said telescoping parts, a rod acting as a guide for said spring, and said switch comprising a pair of terminals, on one of said telescoping parts, and a conducting head on the end of said rod adapted to make a circuit through said terminals in a determined position of said telescoping parts.

In witness whereof, I have hereunto signed my name.

WILLIAM GENTRY SHELTON.