F. A. STAINBROOK.

ELECTRICAL DRINK MIXER.

APPLICATION FILED MAY 9, 1922.

1,420,774. Patented June 27, 1922.

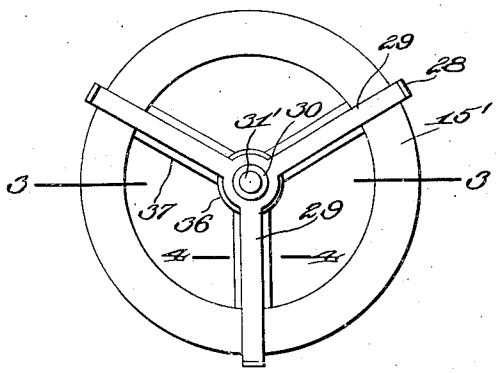


Fig. 2.

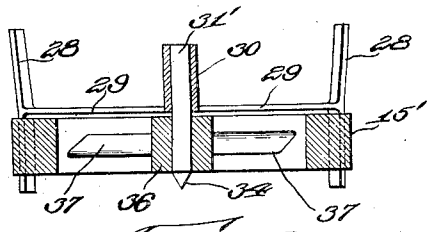


Fig. 3.

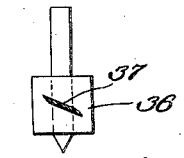
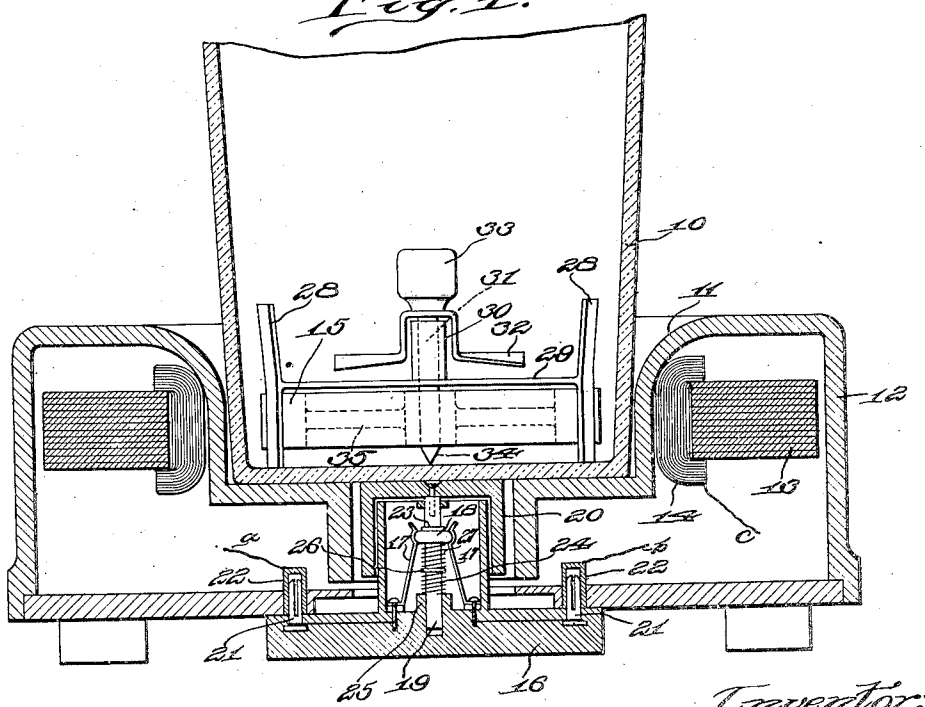


Fig. 4.

Fig. 1.



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UNITED STATES PATENT OFFICE.

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ELECTRICAL DRINK MIXER.

1,420,774. Specification of Letters Patent. Patented June 27, 1922.

Original application filed December 22, 1921, Serial No. 524,150. Divided and this application filed May 9, 1922. Serial No. 559,556.

To all whom it may concern:

Be it known that I, FOREST A. STAINBROOK, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Electrical Drink Mixers, of which the following is a specification.

My invention relates to electrical drink mixers of the alternating-current-motor type wherein there is no mechanical connection between the driving element of the agitator disposed in the liquid receptacle and the outside energizing element.

The object of my invention is to provide an electrical drink mixer having the agitator driving-element mounted for rotation in a removable resilient device arranged to be sprung by the elasticity thereof against the inner sides of the liquid receptacle whereby the agitator and its driving means may readily be removed for cleansing from said receptacle.

Further objects will hereinafter more fully appear from the following detailed description taken in connection with the accompanying drawings.

With the foregoing objects in view my invention comprises a liquid container which may be of glass or other dielectric material and a tripod or the like of spring material having its feet sprung by the elasticity thereof against the inner sides of said receptacle, said tripod carrying a bearing for the rotor, a rotor journalled in said bearing and a stator in co-operative relation with said rotor, said stator preferably being located in a casing having a depression for receiving said container so that when the latter is placed in said depression, the stator and rotor will be arranged in the same plane.

This application is a division of my application Ser. No. 524,150, filed December 22, 1921.

In the drawings which accompany and form a part of this specification,—

Figure 1 is a vertical section of an electrical drink mixer embodying my invention;

Fig. 2 is a plan view of a modification in which the rotor is so constructed as to perform the function of an agitator;

Fig. 3 is a section taken on the line 3—3 of Fig. 2;

Fig. 4 is a section taken on the line 4—4 of Fig. 2.

In the particular drawings selected for more fully disclosing my invention 10 represents a liquid container or mixing vessel which may be of glass or other dielectric material, said vessel being placed in the centrally disposed depression 11 in the top of the casing 12 which contains the stator 13 having windings 14 of an alternating-current motor, for example, a rotary-field motor having a rotor consisting of a solid ring 15 which carries no closed circuits.

Removably attached to the bottom of the casing 12 is a base of insulating material 16 on which are mounted the spring clips 17, 17, arranged to receive and grip the circuit closer 18 slidably mounted on the stem 19 to the upper end of which is attached the cap 20. The said spring clips are electrically connected to the plugs 21, 21, which fit into the sockets 22, 22, secured to the base of the casing, and to said sockets are connected the leads *a*, *b*, which are connected respectively to the windings of the stator and to a suitable source of alternating current. The lead *c* connects the stator windings with said source of alternating current. the leads *b*, *c*, passing out of the casing 12 through an opening (not shown) to the terminals of said source of current.

When the receptacle 10 is placed in the depression 11 of the casing, the stem 19 will be forced downwardly and will carry the circuit closer 18 with it, the collar 23 fixedly secured to said stem, communicating the motion of the latter to said circuit closer, and as soon as the receptacle is removed from said depression, the spring 24 arranged between the boss 25 and the collar 26 fixed to the stem will move the latter upwardly, thereby compressing the spring 27 arranged between said collar 26 and the circuit closer. As soon as the compression of the spring 27 is sufficient to overcome the grip of the clips 17 on the circuit closer, the latter is shot rapidly upwardly, carrying the stem with it, and thereby breaking the circuit of the stator without arcing. No claim is made herein to the non-arcing switch as the same forms the subject matter of my application Ser. No. 559,554, filed simultaneously herewith.

Arranged within the mixing vessel and resting on the bottom thereof is a tripod of spring material having its feet 28 sprung by the elasticity thereof against the inner sides of said vessel so as to form a firm supporting member for the rotor 15.

In the present instance the radial arms 29 of the tripod carry a centrally arranged bearing 30 for the shaft 31 of the rotor, the latter carrying the agitator 32, secured thereto by the cap 33 threaded to the end of said shaft.

Preferably the feet of the tripod extend upwardly as well as downwardly from the radial arms 29 thereof, and the lower end of the shaft 31 is provided with a point 34 which rests on the bottom of the vessel, although it will be obvious that other arrangements may be employed for positioning the rotor in the vessel and for affording a suitable bearing for the same on the bottom thereof.

As shown in Fig. 1 the rotor consists of a solid ring connected by the spokes 35 to the central hub rigidly attached to the shaft 31, although, as will be apparent, said rotor may be a solid metal disc.

In Figs. 2, 3, and 4, I show a modification wherein the rotor 15′ consists of a ring connected to the central hub 36 by the arms 37 which, as indicated in Fig. 4, are inclined to the horizontal and therefore perform the function of an agitator. In this case the shaft 31′ will preferably terminate at the upper end of the bearing 30.

Having thus described illustrative embodiments of my invention without however limiting the same thereto, what I claim and desire to secure by Letters Patent is:—

1. An electrical drink mixer comprising in combination a liquid container, a rotor, a removable resilient means in the bottom of said container for rotatably mounting said rotor therein, and a stator in co-operative relation with said rotor.

2. An electrical drink mixer comprising in combination a liquid container, a tripod of spring material having its feet sprung by the elasticity thereof against the inner sides of said receptacle, a rotor, a bearing for said rotor carried by said tripod, and a stator in co-operative relation with said rotor.

3. An electrical drink mixer comprising in combination a liquid container, a rotor, a bearing for said rotor, radial arms carrying said bearing, resilient members secured to said arms, respectively, and arranged to be sprung by their elasticity against the inner sides of said receptacle, and a stator in co-operative position with said rotor.

4. An electrical drink mixer comprising in combination a liquid container, a rotor rotatably mounted therein, said rotor consisting of a ring of magnetic material, a hub, and arms connecting said hub and ring, said arms being inclined to the axis of said ring, and a stator in co-operative relation with said rotor.

In testimony whereof, I have hereunto subscribed my name this 8th day of May, 1922.

FOREST ARTHUR STAINBROOK.