March 5, 1929. L. J. WAHL 1,704,025

AGITATOR

Filed May 7, 1926

Fig. 1

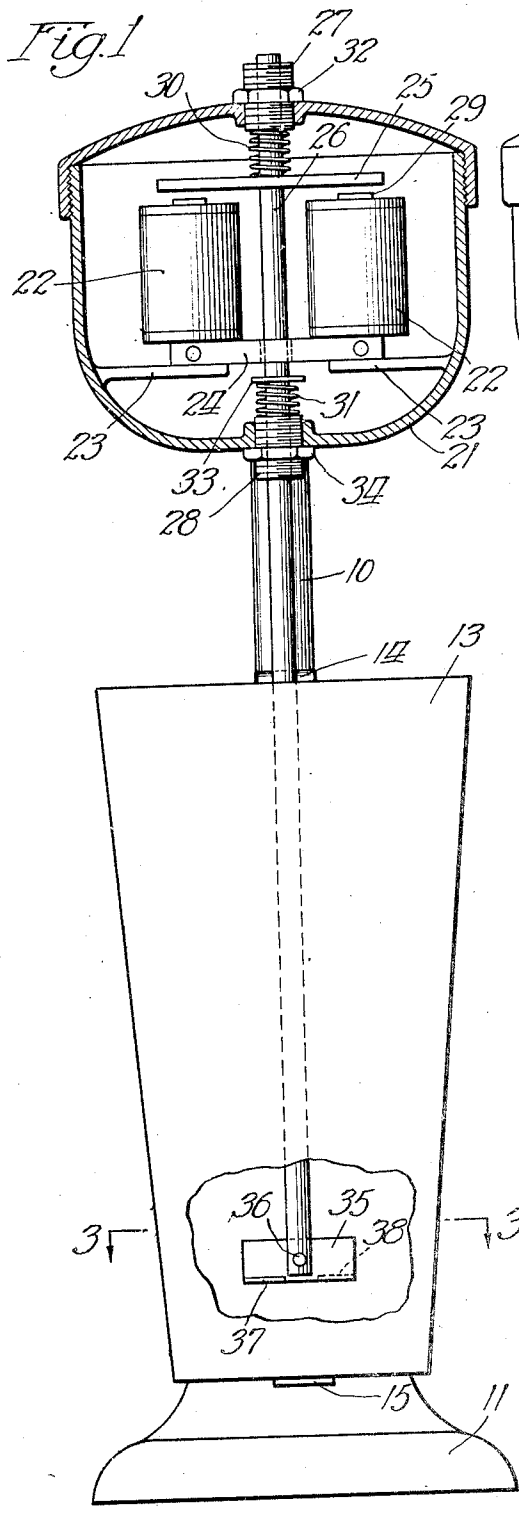


Fig. 2

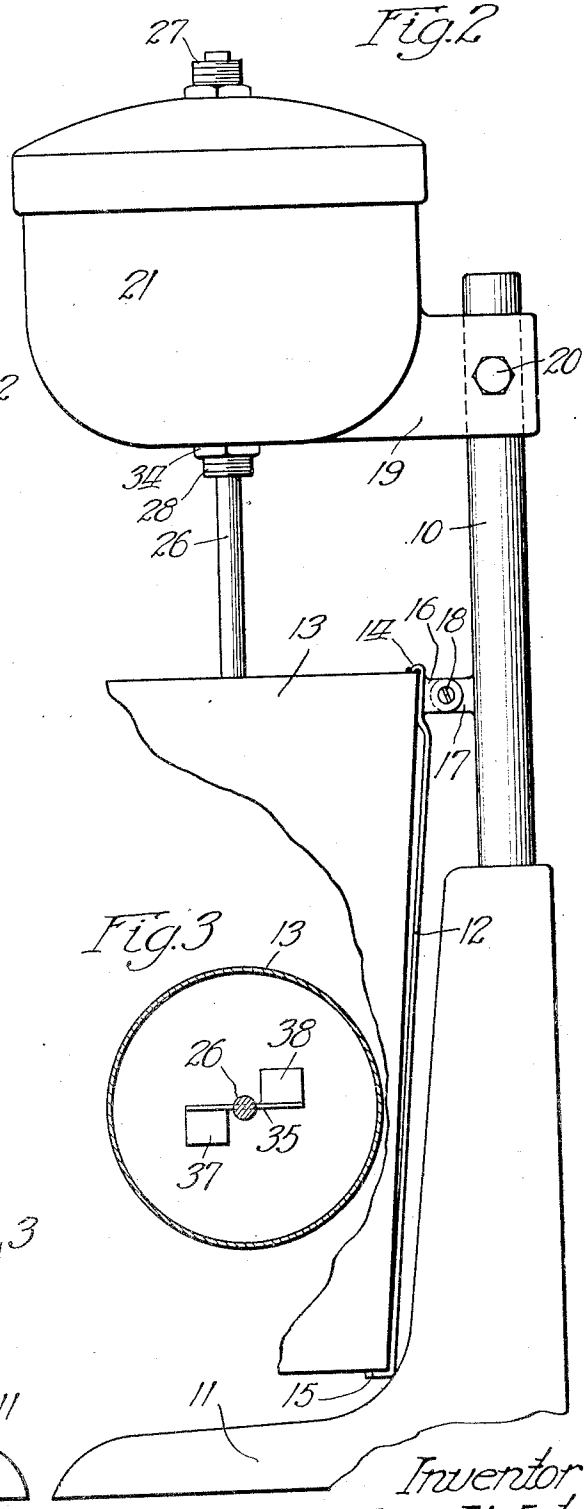


Fig. 3

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UNITED STATES PATENT OFFICE.

LEO J. WAHL, OF STERLING, ILLINOIS, ASSIGNOR TO WAHL CLIPPER CORPORATION, OF STERLING, ILLINOIS, A CORPORATION OF ILLINOIS.

AGITATOR.

Application filed May 7, 1926. Serial No. 107,513.

My invention relates to agitators and has for its object the provision of an improved device to agitate the contents of a receptacle in such a manner as to thoroughly mix the same.

My invention is more particularly designed for use in connection with the mixture of such articles as are utilized in making mixed drinks or mixed articles of a similar manner such for instance as those which are sold at soda fountains and similar places.

In making mixed drinks of this character, it is customary to place various ingredients in a receptacle some of which are in liquid form and thus by the process of agitation to intermix these ingredients so that a homogeneous whole is produced.

In my co-pending application, Serial No. 107,514, filed May 7, 1926, I show another form which this invention may take in which the proper movement of the agitation is unlike that disclosed herein.

My invention concerns itself primarily with the provision of a mechanism in which a vibrating or oscillatory element is utilized in securing the mixture of the ingredients. To this end I utilize an electro-magnet controlling an armature which electro-magnet is supplied with undulatory current thus to secure a to and fro movement of the armature. In the preferred form of the invention I preferably supply alternating current of the commercial frequency of sixty (60) cycles to the electro-magnet thus producing one hundred and twenty (120) to and fro movements of the agitating member per second. I find after considerable experimentation that I am thus enabled to secure the proper mixture of the ingredients by this very much simplified device.

I will explain one form which the invention may take more in detail by referring to the accompanying drawing in which;

Fig. 1 is a front view partially in section of a device constructed in accordance with my invention;

Fig. 2 is a similar view, certain parts being shown in a fragmentary way; and

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

My improved device as illustrated in the drawings comprises a standard 10 of any suitable design which may have a base 11 and to which is attached a supporting element shown here in the shape of a bar 12 which may support a receptacle 13. The bar 12 has an inturned upper lip portion 14 and a lower projecting toe portion 15. It will be seen that a receptacle can readily be placed in position upon the bar 12 and held thereby. The bar 12 through the agency of lugs 16 and 17 is suitably mounted upon the standard 10, a screw 18 being shown to hold these lugs together in their adjusted position. The bar 12 carries the lug 16 and the standard 10 carries the lug 17.

The standard 10 also carries a bracket 19 suitably adjusted in position upon the said standard by the set screw 20. This bracket 19 supports a housing 21 within which the operating mechanism is contained. The housing 21 carries an electro-magnet consisting of the coils 22—22 which are held in place upon brackets 23—23, there being a keeper 24 for said electro-magnet. The electro-magnet is provided with an armature 25 suitably mounted upon a rod 26 which rod in its lower portion forms the agitator. The rod 26 to which the armature 25 is fixedly secured is reciprocable in the bearings 27 and 28 so that as the armature 25 is attracted to the pole pieces 29 of the electro-magnet and retracted therefrom, the agitator portion 26 has a reciprocable up and down movement.

The arrangement is also such that the natural period of vibration of the moving parts can be adjusted or altered or that the tension under which they are held when in their neutral position may be altered and this is brought about by means of two springs, respectively the springs 30 and 31. The spring 30 presses against the armature 25 at one of its extremities and presses against the bearing portion 27 at its other extremity. It will be seen that the tension of this spring can be easily adjusted by rotating the bearing portion 27 after which it is secured in its fixed position by the lock nut 32. The spring 31 presses against a cross piece 33 provided upon the bar 26 and also presses against the bearing portion 28. Similar adjustment of this bearing portion 28 adjusts the tension of the spring 31 after which the parts are held in their adjusted position by the lock nut 34.

The agitator bar 26 carries at its lower extremity a fin 35 suitably riveted to said bar

by the rivet 36. This fin has laterally projecting spring vanes 37 and 38, which in the form shown, project in opposite directions. The arrangement of the fin and vanes is such that when they are reciprocated, as herein disclosed, they will rotate the liquid and thoroughly mix the ingredients of the receptacle, but will not splash the contents.

As I have above stated, I have obtained very satisfactory results by the use of the commercial alternating current for energizing the electro-magnet 22. This commercial alternating current is of the sixty (60) cycle type which means that there are one hundred and twenty (120) pulsations per second so that the agitator bar makes one hundred and twenty (120) pulsations per second.

From what has been thus described, the nature of my invention will be readily clear to those skilled in the art and it will also be clear that many modifications may be made without departing from the spirit of my invention as covered by the appended claims.

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

1. In a device of the character described having a support and means associated therewith adapted to carry a receptacle, vertically reciprocable means carried by said support to agitate the contents of said receptacle, electro-magnetic means for actuating said reciprocable means, resilient means normally holding said reciprocable means in a neutral position intermediate the extremes of its reciprocation and means for adjusting the tension under which said reciprocable means is held in its neutral position.

2. In a device of the character described having a standard and a support on said standard adapted to carry a receptacle, vertically reciprocable means carried by said standard to agitate the contents of said receptacle, electro-magnetic means for actuating said reciprocable means, resilient means normally holding said reciprocable means in a neutral position intermediate the extremes of its reciprocation and means for adjusting the tension under which said reciprocable means is held in its neutral position.

3. In a device of the character described having a support and means associated therewith adapted to carry a receptacle, vertically reciprocable means carried by said support to agitate the contents of said receptacle, electro-magnetic means for actuating said reciprocable means, resilient means normally holding said reciprocable means in a neutral position intermediate the extremes of its reciprocation and means for adjusting the tension under which said reciprocable means is held in its neutral position, said reciprocable means having laterally extending vanes.

4. In a device of the character described having a standard and a support on said standard adapted to carry a receptacle, vertically reciprocable means carried by said standard to agitate the contents of said receptacle, said reciprocable means having laterally extending vanes, each of said vanes having a vertically extending portion and a horizontally extending portion.

5. In a device of the character described having a standard and a support on said standard adapted to carry a receptacle, vertically reciprocable means carried by said standard to agitate the contents of said receptacle, and electro-magnetic means for actuating said reciprocable means, said electro-magnetic means including a single armature fixedly secured to said vertically reciprocable means and electro-magnets on opposite sides of said reciprocable means cooperating therewith.

6. In a device of the character described having a support and means associated therewith adapted to carry a receptacle, reciprocable means carried by said support to agitate the contents of said receptacle, said reciprocable means having an up and down motion, said reciprocable means having an agitator comprising a flat strip secured substantially at its center to said reciprocable means and having portions adjacent its opposite ends extending substantially horizontally in opposite directions.

7. A device of the character described comprising a receptacle adapted to contain a liquid, and means for causing a rotational motion of said liquid, said means consisting of a reciprocatory element movable substantially transversely of the plane of rotation of said liquid.

8. A device of the character described comprising a receptacle adapted to contain a liquid, and means for causing a continuous rotational motion of said liquid, said means consisting of a reciprocatory element movable substantially transversely of the plane of rotation of said liquid.

In witness whereof, I hereunto subscribe my name this 19th day of April, A. D. 1926.

LEO J. WAHL.