

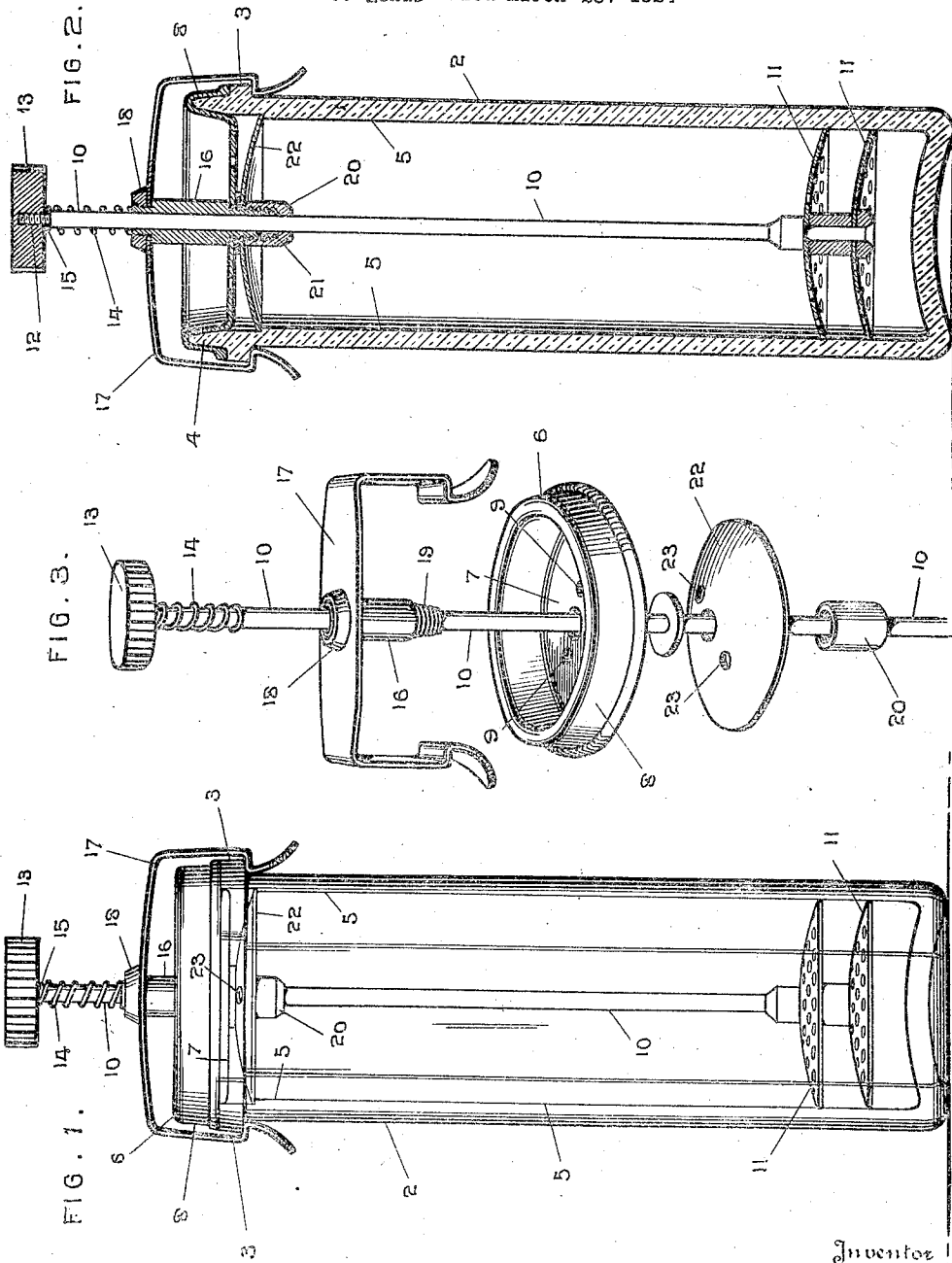
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EGG BEATER AND DRINK MIXER

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EGG BEATER AND DRINK MIXER.

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My invention relates to egg beaters, drink mixers and similar articles for agitating liquids and aerating them, and has for its object to produce an article of this kind that will quickly and thoroughly agitate, aerate and mix any liquid or semi-liquid substance that may be treated thereby.

In the accompanying drawings:

Figure 1 is a side view of an article embodying my invention.

Fig. 2 is a central vertical section of the same.

Fig. 3 is a perspective view of the cover and associated parts separated from each other.

Referring to the drawings, 2 designates a vessel that serves as a container for the liquids to be treated. It is preferably formed of glass and is of elongated cylindrical shape. Its upper end is open, and near such end the vessel is formed with an external flange 3, above which extends the cylindrical rim 4 which preferably tapers slightly towards its upper edge. The glass or other material of which the vessel 2 is formed is preferably slightly thickened on the inside as represented at 5 for a purpose which will be described.

6 represents the cover of the vessel 2. It is formed of metal and comprises a horizontal plate 7 at the edge of which is a folded rim 8 that rises above the plane of the plate 7 and forms a groove adapted to fit the rim 4 when the cover is applied. The lower edge of the outer fold of the rim 8 is adapted to rest upon the upper edge of the flange 3 when the cover is properly applied; and the annular groove formed in the rim tapers upwardly and is of such width that when the cover is applied there is a close, and practically air-tight, fit between the rim 4 and the folded flange of the cover.

The horizontal plate of the cover is perforated at 9 to form breathing openings through which atmospheric air freely passes to and from the interior of the vessel 2 during the operation of the article.

10 designate a rod adapted to pass centrally through the cover 6 and carrying dashers or agitating plates 11 at its lower end. These may be of any preferred construction. I prefer to provide two disk-shaped perforated metal plates spaced apart and of such diameter that their edges lie close to the interior wall of the vessel 2, to

serve as the dashers. The upper end of the rod 10 is reduced and screw-threaded as at 12 to receive a head 13 by which the rod is manipulated. A coiled spring 14 encircles the upper end of the rod, to which it is united by causing its upper convolution 15 to be clamped between the head 13 and the shoulder at the lower end of the reduced portion 12 of the rod.

16 indicates an elongated hollow post that surrounds the rod 10 below the spring 14. To the upper end of this hollow post is secured a cross clamp 17 adapted to engage with the flange 3 of the vessel and hold the cover in place. A collar 18, through which passes the dasher rod 10, is secured to the cross clamp 17 and serves as a bearing for the lower convolution of the spring 14 and also as a practical continuation of the post 16 above such clamp. The lower end of the hollow post is reduced in diameter and is externally screw-threaded as at 19, and passes centrally through the plate 7 of the cover. A hollow nut 20 engages with the reduced screw-threaded end 19 of the post 16 and clamps the horizontal plate of the cover between its upper end and the shoulder formed at the upper end of the screw-threaded part 19 of the post, thus securely uniting the cover to the post, but permitting its easy separation therefrom, as indicated in Fig. 3, for cleansing or other purposes. The nut 20 serves as a gland or box to receive a packing 21 that surrounds the dasher rod 10 and prevents any liquid from passing along the rod and out of the vessel 2 through the hollow post 16.

22 indicates an umbrella disk secured to the post 16 just below the plate 7 of the cover. It is centrally perforated to pass over the reduced portion 18 of the collar 16 and is held in place against the underside of the cover by the nut 20. It is of such diameter that its edge bears against the inner wall of the vessel 2 where it is thickened, at 5, thus preventing the liquid which may reach the upper portion of the vessel during the agitating process from escaping. The disk 22 is perforated at 23 to form breathing openings, these being so located as not to be in line with the breathing openings 9 in the cover. Any liquid that may pass through the openings 23 will be thus arrested by the plate 7 of the cover and will fall back upon the top of the umbrella plate 22 and will thence flow back into the body

of the vessel either through the perforations 23, or escape around the peripheral edge of the plate.

The manner of operating the article described will be apparent. Suffice it to say that when it is to be used the cover, dasher and associated parts are entirely removed, and the liquid to be agitated is placed in the vessel 2. The cover is then replaced and clamped in position, the dasher resting near the bottom of the vessel but not in contact therewith, being held at a suitable distance above such bottom by the spring 14. The operator now grasps the handle 13 and rapidly works the dasher rod up and down, the spring 14 preventing the dasher and lower end of the rod 10 from being carried into forcible engagement with the bottom of the vessel which might be cracked or broken should this take place. The passage of the dashers through the body of liquid causes it to be broken up and violently agitated, thus effecting a thorough mixing and aeration thereof, since there is free access of air to the interior of the vessel, through the breathing openings 9 and 23. The liquid being agitated will quickly become a frothy mass of much greater volume than that occupied by the material when first placed within the vessel. Some of the material will then inevitably reach the top of the vessel, but by the arrangements which I have devised leakage thereof is prevented. The engagement of the umbrella disk 22 with the thickened wall of the vessel 2 very effectively prevents the escape of the material around the edges of such disk. The packing 21 within the nut 20 prevents the escape of the liquid centrally and along the reciprocating dasher shaft or rod. The sealing of the cover by the tapering rim 4 entering and fitting closely within the groove formed by the folded rim 8 prevents, without the use of a gasket, the escape of any liquid that may pass above the umbrella plate 22. The non-registering perforations formed respectively in the horizontal plate of the cover and the umbrella disk insure free and ample supply of air to the interior of the body of the vessel, but do not permit the escape of the liquid. If by chance any small amount of liquid should pass the openings 9 it would collect in the cup formed by the up-standing rim 8 at the periphery of the horizontal plate 7 of the cover.

I have found it very important that there should be a free passage of external air to the interior of the vessel during the agitating operation to secure the desired aerating results, for without these, as would be the case should the cover hermetically seal the vessel 2, I have found it impossible to properly beat and aerate many substances.

My invention can be put to many uses, such as the beating of eggs, cream, and other

substances, the mixing of drinks, in fact the agitation, mixing and aeration of practically any liquid or semi-liquid substances which it may be desired thus to treat.

I have shown the preferred form of my invention, but it will be understood that those skilled in the art in practicing the same are not to be limited to the details herein shown, since these may be changed as circumstances suggest, so long as the principle of my invention is followed, which invention is stated in the following claims.

What I claim is:

1. In a device for agitating and aerating liquids, a containing vessel, an agitator arranged to work therein carried by a central rod, a cover for closing the vessel, a plate located below the cover, a hollow post through which the agitator rod is free to move and over which the cover and plate below the cover freely slip so as to be easily removed for cleansing purposes, and easily separable means for securely uniting to the hollow post both the cover and the plate.

2. The combination stated in claim 1, in which the cover and plate are so constructed that they approach each other closely at their centers, where they surround the hollow post, and separate from each other towards their peripheries, the plate and cover being perforated and the perforations not in line with each other.

3. In a device for agitating and aerating liquids, a containing cylindrical vessel formed with an external flange near its upper open end and a rim extending above the flange, a cover for sealing the open end of the vessel, having a horizontal plate and an upstanding rim folded to form an annular groove into which the rim of the vessel enters and closely fits, a clamp for engaging with the flange of the vessel to hold the cover in place, and agitating means located within the vessel and having an operating rod extending through the cover.

4. In a device for agitating and aerating liquids, an open-ended vessel, a cover for closing and sealing said open end, a hollow post secured to the cover, a rod extending through the post and guided and supported thereby, agitating means within the vessel carried by the said rod, and a clamp carried by the post for securing the cover to the vessel.

5. In a device for agitating and aerating liquids, an open-ended vessel, a cover for closing and sealing said open end, a hollow post extending through the cover and separable therefrom, means for uniting the cover and post, and a clamp carried by the post for uniting the cover to the vessel, and agitating means comprising a rod extending through the said hollow post.

6. In a device for agitating and aerating liquids, an open-ended vessel, a cover for

closing said open end, agitating means comprising a rod extending through the cover and an agitator within the vessel, an elongated post through which the said rod extends, passing through the cover freely separable therefrom and, an umbrella plate below the cover through which the post also extends, and means engaging the post for uniting both the cover and the umbrella plate to the post the cover and umbrella plate being freely separable from the post and from each other upon removal of said uniting means.

7. In a device for agitating and aerating liquids, an open-ended vessel, a cover for closing said open end, agitating means comprising a rod extending through the cover and an agitator within the vessel, an elongated post through which the said rod extends having its lower end reduced and externally screw-threaded, said reduced end being adapted to freely slip through the cover, a curved umbrella plate centrally per-

forated to permit the reduced end of the post to slip through it freely, the central portion of such plate being close to the central part of the cover and its peripheral portion more distant therefrom, a nut adapted to engage with the screw-threaded reduced part of the post and unite the umbrella plate and cover to the post, the nut surrounding the rod of the agitating means and containing a packing about the same.

8. The combination stated in claim 6, having through the cover and the umbrella plate, respectively, non-aligning openings serving as breathing perforations through which atmospheric air freely passes when the agitator is operated.

9. The combination stated in claim 4, including also a spring interposed between the hollow post and the rod and serving to normally hold the rod and agitating means at an intermediate position.

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