

H. P. ROBERTS.
BEATING AND MIXING DEVICE.
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1,046,648.

Patented Dec. 10, 1912.

Fig. 2.

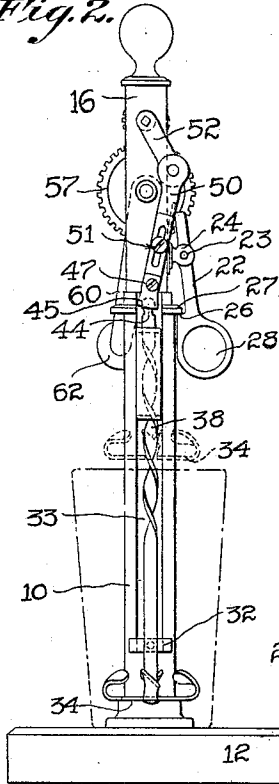


Fig. 1.

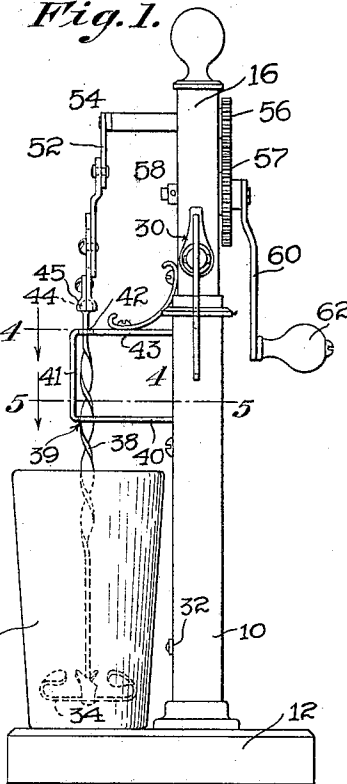


Fig. 3.

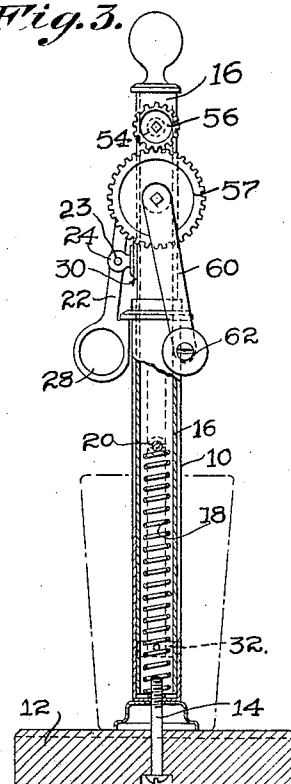


Fig. 4.

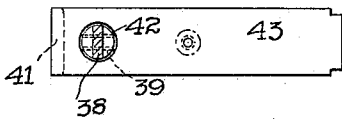


Fig. 6.

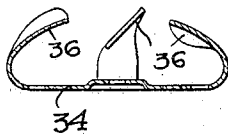


Fig. 5.

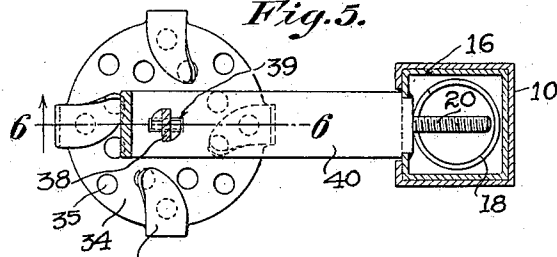
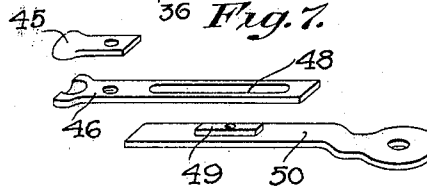


Fig. 7.



Witnesses:

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UNITED STATES PATENT OFFICE.

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BEATING AND MIXING DEVICE.

1,046,648.

Specification of Letters Patent.

Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, HENRY P. ROBERTS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Beating and Mixing Devices, of which the following is a specification.

This invention relates to an improvement in beating and mixing devices.

10 The object of the invention is to provide a device which shall quickly and effectively beat up and mix, beverages, eggs, and the like, so as to produce a smooth, well blended mixture, in which all the ingredients are
15 finely divided and thoroughly mixed, and the whole mass lightened and aerated.

The device is primarily intended for use in places where beverages are dispensed, although some of its features are adapted
20 for general use in beating and mixing liquids, and the like.

With the above object in view, the invention consists in the beating and mixing device hereinafter described and particularly
25 defined in the claims, the advantages of which will be obvious to those skilled in the art from the following detailed description.

The invention will be clearly understood from an inspection of the accompanying
30 drawing, in which—

Figure 1 is a side elevation of an illustrative embodiment of the invention; Fig. 2 is a front elevation of the same; Fig. 3 is a rear elevation with parts broken away
35 to show the interior of the standard and plunger; Fig. 4 is a horizontal section on an enlarged scale, taken on the line 4—4 in Fig. 1, showing the upper arm of the stationary guide frame for the reciprocatory stem; Fig. 5 is a horizontal section taken on the line 5—5 in Fig. 1; Fig. 6 is a vertical section through the dasher taken on the line 6—6 in Fig. 5; and Fig. 7 is a perspective detail view of the connecting rod
45 and ball socket for the stem of the dasher.

As illustrated in the drawing, the present embodiment of the invention comprises a hollow standard 10, preferably rectangular in cross-section, mounted upon a base 12, or
50 other suitable support, by means of a screw 14, or in any other approved manner. A telescoping support or plunger 16 fits the interior of the standard 10, the latter acting

as a guide therefor. This plunger is hollow and contains a coiled spring 18 which presses
55 at its lower end against the bottom of the standard 10, and at its upper end engages a screw 20 which projects into the interior of the plunger. This spring tends normally to raise the plunger so that a glass or other con-
60 tainer 21 may be placed in position or removed from the device, the dasher being then raised to the dotted line position shown in Fig. 2.

The plunger 16 is held in its lowered po-
65 sition by a catch 22 pivoted at 23 in ears 24, which project laterally from the plunger. The catch 22 is provided with a lip 26 which engages the underside of a ledge or project-
70 ing flange 27 on the exterior of the standard 10. The catch 22 is provided with a finger hold, preferably in the form of a loop or eye 28, by means of which the latch may be manually operated to release the lip 26 from
75 the flange 27, whereupon the plunger will be automatically raised by the spring 18. A spring 30 is provided, which engages the upper end of the catch 22, and tends normally to hold the lip 26 in engaging position
80 with relation to the ledge 27.

The upward movement of the plunger 16 under the influence of the spring 18, when the catch 22 has been released, is limited by the stop 32 secured to the plunger 16 and projecting through an elongated slot 33 pro-
85 vided in the front side of the standard 10. This stop moves along the front face of the standard 10 and is adapted to engage the ledge or projecting flange 27 in its upward movement.

During the beating and mixing operation the parts are in the position shown in the drawing. A foraminous dasher 34, preferably of sheet metal, is provided with a series of apertures 35, and a plurality of
95 blades 36, curved upward from the periphery of the dasher and extending upwardly and inwardly toward the axis, said blades being inclined and curved in the form of propeller blades, so that when the dasher is
100 reciprocated and rotated the blades operate to cut, beat, and mix the contents of the receptacle in which it is operated, and to thoroughly aerate and agitate the contents without spattering or spilling the same.

The dasher 34 is secured to the lower end

of a spiral stem 38, which is preferably substantially rectangular in cross-section, and is adapted to pass freely through a controlling aperture 39 formed in the lower arm 40 of a U-shaped guide frame 41, secured to the plunger 16. The aperture 39 is also rectangular, and the reciprocation of the stem 38 therethrough causes the latter to oscillate. The stem 38 also passes through a circular guiding aperture 42 in the upper arm 43 of the guide frame 41, whereby said stem is steadied. The upper end of the stem 38 is provided with a spherical knob or ball 44 of a ball-and-socket connection.

The ball 44 is held in a spherical socket, preferably formed by two plates 45, 46, which are secured together by a screw 47. The plate 46 is provided with an elongated slot 48, which is adapted to receive a lug 49 on a bar 50. A screw 51 clamps the plate 46 and the bar 50 together, the two constituting an adjustable connecting rod, whereby the upper and lower limits of the dasher 34 may be regulated. It will be understood however that the connecting rod may be made of a single piece of metal and the socket formed thereon, if desired.

The bar 50 is pivotally connected at its upper end to a crank arm 52 on a shaft 54, suitably journaled in the upper end of the plunger 16. A pinion 56 is fast on the shaft 54 and meshes with a gear 57, which is fast on a shaft 58 also journaled in the plunger 16. An operating crank 60 is fast on the shaft 58 and is provided with an operating handle 62, by means of which the mechanism is operated. By turning the crank 60, the gear 57 rotates the pinion 56, whereby the crank 52 is rotated to raise and lower the connecting rod attached thereto. Thus the spiral stem 38 is reciprocated and oscillated, and with it the dasher 34. The dasher is thus given a rapid combined oscillatory and reciprocatory motion, whereby the propeller blades cut, beat and commingle the contents of the receptacle 21, and these contents are also repeatedly forced through the apertures 35 and around the periphery of the dasher. When the beating and mixing operation is completed, the lip 26 of the catch 22 is released from the ledge 27, whereupon the spring 18 automatically raises the plunger 16 and thereby withdraws the dasher from the receptacle, so that the latter may be quickly removed and replaced by another. When a new receptacle is placed on the base 12 under the dasher, the plunger 16 is pushed down until the lip 26 engages the ledge 27, the spring 30 automatically pushing the catch 22 into engaging position. The device

is then ready for the beating and mixing operation.

While I have illustrated and described a preferred embodiment of the invention, I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction shown and described, but

What I claim is:—

1. A device of the character described, comprising a standard, a plunger slidable within said standard, a spring for raising said plunger, a catch for holding the plunger in lowered position, a guide on said plunger, a spiral stem adapted to be reciprocated through said guide, a dasher on the lower end of said stem, a shaft journaled in said plunger, means for rotating said shaft, and connections between said shaft and said stem, whereby when the former is rotated the latter is reciprocated.

2. A device of the character described, comprising a standard, a plunger slidable within said standard, a spring for raising said plunger, a catch for holding the plunger in lowered position, a guide on said plunger, a spiral stem adapted to be reciprocated through said guide, a dasher on the lower end of said stem, a shaft journaled in said plunger, means for rotating said shaft, a crank on said shaft, a connecting rod pivotally connected at one end to said crank, and a ball-and-socket connection between the lower end of said connecting rod and the upper end of said stem.

3. A device of the character described, comprising a standard, a plunger slidable within said standard, a spring for raising said plunger, a catch for holding the plunger in lowered position, a guide on said plunger provided with an aperture, a spiral stem fitting said aperture and adapted to be reciprocated through said guide, a foraminous dasher on the lower end of said stem having cutting and beating blades, a shaft journaled in said plunger, a pinion on said shaft, a crank on said shaft, a connecting rod connected to said crank and to the upper end of said stem, a gear meshing with said pinion, and means for rotating said gear.

In testimony whereof I have affixed my signature, in presence of two witnesses.

HENRY P. ROBERTS.

Witnesses:

CHAS. F. HOWE,

GEORGE CLARENDON HODGES.