





# UNITED STATES PATENT OFFICE.

FREDERICK J. LAROCK, OF BURNSIDE, CONNECTICUT, ASSIGNOR TO HIMSELF, AND  
EDWARD M. FRANCIS, OF HARTFORD, CONNECTICUT.

## EGG-BEATER.

944,621.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, FREDERICK J. LAROCK, a citizen of the United States, and resident of Burnside, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Egg-Beaters, of which the following is a full, clear, and exact specification.

This invention relates to egg-beaters, and more especially to that class thereof in which a rotary beater is revolved around a central axis which is substantially in alinement with the center line of the vessel in conjunction with which the device is used, and it has for one of its objects the provision of a machine adapted for use in restaurants, hotels, etc., and for handling large quantities of material.

My invention has, furthermore, for its object, the provision of such a machine which comprises a plurality of beaters which are rotated in opposite directions and at the same time are revolved bodily in the same direction.

My invention has, furthermore, for its object, the improved construction of the mechanism whereby the beaters are rotated on their axes as will be hereinafter described and the means of their attainment be particularly pointed out in the claims.

Referring to the drawings, in which similar characters denote similar parts, Figure 1 is a top view of my improved egg-beating machine, and Fig. 2 is a vertical cross section on line 2, 2 of Fig. 1.

In its preferred form, the machine comprises a receptacle 10 having an indented bottom 11 so as to leave an annular channel or groove 12 within which the beaters are revolved around the axial center line of the receptacle.

Secured to the top of the receptacle 10, is a support 13 for the beater-operating mechanism, and, in the preferred form there shown, this support is made in the form of a spider having branches 13', the ends of which are hook-shaped to catch over the rim-flange 10' of the receptacle 10. The main arm 13 carries at its outer end a latch 14 pivoted at 15 to said arm and having a pin 16' adapted to engage the under side of a catch 17 secured to the receptacle so that in this manner the support is firmly clamped to the receptacle.

The mechanism, whereby the beaters are

revolved about the central axis of the receptacle, comprises a carrier 20 formed substantially in the shape of an inclosed casing for receiving the mechanism for rotating the beaters on their own axis. This carrier is provided with a centrally disposed shaft 21 which constitutes the driving element and may be operated by a handle 22 as shown. This shaft 21 is journaled in a hub 23 on the support 13, which latter also has a hub 23' projecting into the casing and carries at that point one of the members of the beater-rotating mechanism whereby, as above stated, said beaters will be moved in opposite directions. This member consists substantially of a double gear, the upper gear 24 being of comparatively large size as compared with the lower gear-ring 25, both of said gears being held stationary by virtue of a key 26 connected with the hub 27 of the gears as well as with the hub 23 of the support, so that in this manner both gears are held absolutely stationary. The carrier 20 carries the beaters which in the present instance are two in number and which are rotated on the carrier in opposite directions, as follows: Mounted for rotation in the carrier, is a sleeve 30 which carries at its upper end a pinion 31 engaged by an intermediate pinion 32 which in turn is in mesh with the stationary gear-ring 25, above referred to. The sleeve 30 carries at its lower end a disk 33 to which the beater-blades 34 are attached, said beater-blades being drawn together at their lower ends and united by a thimble 35 (see Fig. 2). Passing through the thimble 35 and also through the sleeve 30 is a spindle 36 which constitutes the driving medium for the other set of beater-blades herein denoted by 37 and attached at their lower ends to a collar 38 which is rigidly secured to the spindle 36 so as to rotate therewith. The upper ends of the beater-blades 37 are secured to a disk 39 which is in free running contact with the sleeve 30 so that, therefore, it will be seen that the rotation of the spindle 36 will result in driving the outer beater-blades 37 at the lower ends thereof; while, on the other hand, the inner beater 34 will be driven through the disks 33 by virtue of the connection thereof with the sleeve 30. The spindle 36 has secured thereto a pinion 40 which is in direct mesh with the large stationary gear 24 so that when the handle 22 is turned in the direction



of arrow *a*, the carrier 20 will be revolved, thus revolving the axis of the spindle 36 around the central axis of the shaft 21 and therefore rotating the spindle 36 with the  
 5 outer beaters 37 in the direction of arrow *b* in Fig. 1. Likewise, it will be understood that by virtue of the intermediate pinion 32, the pinion 31 and sleeve 30, together with the inner beater-blades 34, will be rotated  
 10 around the axis of the spindle 36 but in a direction opposite to the movement of the latter. In brief, it may be stated that the two sets of beater-blades are not only rotated in opposite directions on the same axis, but  
 15 that, furthermore, the rotative speed of said beaters respectively, will be different by virtue of the different sizes of the stationary driving gears 24 and 25.

Many changes may be made in the particular construction of the assemblage of the several elements of the device without departing from the spirit of the invention, especially as far as the particular form of driving mechanism for the beater-sets, respectively, is concerned.

I claim:—

1. The combination with a support, a carrier, and means for moving the carrier, of a beater spindle, means for rotating said spindle by the movement of the carrier, a beater  
 30 connected with the lower end of said spindle for corotation therewith, a sleeve rotatable in the carrier, another beater connected for rotation with said sleeve, means for rotating  
 35 said sleeve, and means for rotatably supporting the upper end of the second beater on the spindle of the first beater.

2. The combination with a carrier, and means for rotating said carrier, of a beater-spindle journaled in said carrier eccentric-  
 40 ally of the rotation axis thereof, a beater rigidly secured to the lower end of said spindle, means for freely guiding the upper end of said beater on said spindle, and means for rotating said beater by the movement of the  
 45 carrier.

3. The combination with a stationary support having a centrally disposed hub, a pair of stationary gears of different diameters concentrically secured to said hub, a shaft mounted for rotation in said hub, a carrier secured  
 50 to said shaft, a pair of beaters both having the same axis of rotation and journaled in said carrier, a pinion secured to one beater and in direct engagement with one of said gears,  
 55 a second pinion on the other beater, an intermediate pinion interposed between the second pinion and the second gear and in engagement with both of these elements, and means for rotating said carrier.

4. The combination with a stationary support a carrier rotatable thereon, and a pair of beaters both having the same axis of rotation and journaled on the carrier, means  
 60 for rotating said carrier, a pair of stationary gears of different diameters on the support, and pinions on the beaters and engaging said gears for rotating said beaters in opposite directions by the rotation of said carrier, and  
 65 at different speeds relatively to each other.

FREDERICK J. LAROCK.

Witnesses:

M. E. O'NEILL,  
 CHAS. F. SCHMELZ.