(No Model.)

A. WHITE.

EGG BEATER.

No. 449,187. Patented Mar. 31, 1891.

Fig. 1.

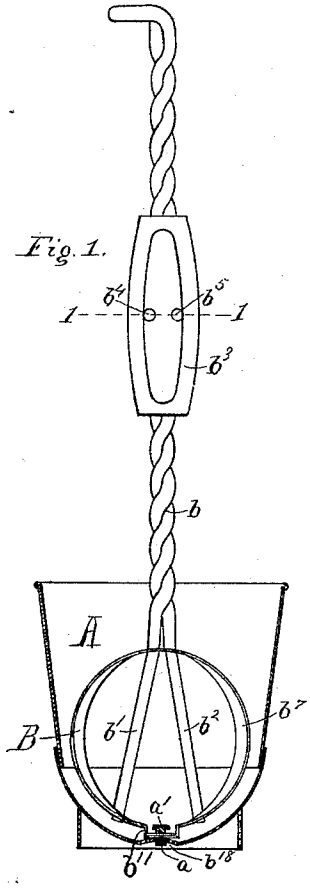


Fig. 2.

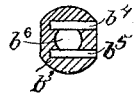


Fig. 4.

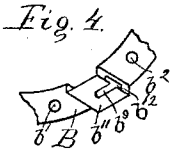


Fig. 3.

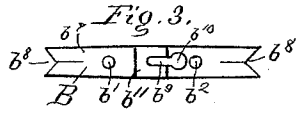


Fig. 5.

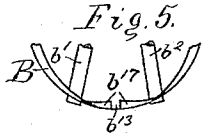


Fig. 7.

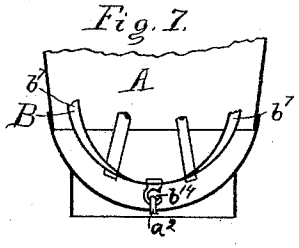
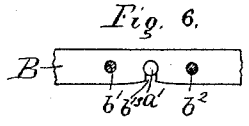


Fig. 6.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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EGG-BEATER.

SPECIFICATION forming part of Letters Patent No. 449,187, dated March 31, 1891.

Application filed March 16, 1889. Serial No. 303,525. (No model.)

To all whom it may concern:

Be it known that I, ALBERT WHITE, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Egg-Beaters, of which the following is a specification.

My invention relates to egg-beaters; and it consists in the devices and combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a front elevation of the egg-beater proper and a vertical central section of the cup or holder in which said beater turns; Fig. 2, a horizontal section on the line 1 1 in Fig. 1; Fig. 3, a plan of a part of the bottom of the beater, showing the grooves in the agitator, the remaining figures showing modifications; Fig. 4, an isometric perspective view of a part of the bottom of the agitator, showing a modified form of the slot which engages the centering and holding stud; Figs. 5 and 6, respectively, a front elevation and a plan of the lower part of the agitator, showing another modified form of said slot, Fig. 6 showing also a plan of the engaging stud; Fig. 7, a front elevation of the lower portion of the agitator and a vertical central section of the holder, showing another means of holding the beater in the holder and of centering said beater and holder with each other.

In all the figures, A represents a holder in which the eggs or other material to be beaten or stirred up are placed, and B represents the beater proper having a shaft b, formed of two wires b' b^2, twisted together for nearly their entire length to form in effect a screw having a long pitch. A nut b^3 is preferably a hollow piece of wood having two wires b^4 b^5 (see Figs. 1 and 2) driven from the outside into or through its central opening b^6 near enough together to prevent the nut from turning on the shaft b without a vertical movement thereon. The beater is revolved by giving to the nut a reciprocating motion, while the shaft b is held in a vertical position by guiding said nut in a vertical path in the usual manner. The agitator b^7 is a hoop of sheet metal secured to the shaft b by the wires b' b^2 below, where they are twisted together, being spread apart and passed through the top and bottom of said hoop, the lower ends of said wires being spread below the hoop or soldered to said hoop, as may be most convenient. The sides of the hoop are provided with vertical grooves b^8; or, in other words, the sides of the hoop are so bent as to have a convex surface internally and a concave surface externally, as clearly shown in Fig. 3, the object of this construction being to draw the material beaten toward the center of the agitator or hoop instead of throwing it outward by centrifugal force, and a further object is to allow the air to pass down in the grooves of the hoop and mix with the material operated upon, and thereby to facilitate the operation of the beater.

The interior of the bottom of the holder A is nearly a hemisphere, and the beater is centered in said holder by means of a stud a, having a head a' secured to the center of the bottom of said holder, as shown in Fig. 1, and the lower part of the agitator is slotted, preferably, as shown in Fig. 3 at b^9, said slot reaching from the lowest part of the agitator sidewise and terminating in a round hole or enlargement b^{10} of said slot, said enlargement being of sufficient diameter to admit the head a' of the stud a. The lower part of the agitator or hoop b^7 is offset downward at b^{11}, as shown in Figs. 1 and 3; but this is not absolutely necessary, although believed to be desirable. When the offset b^{11} is used, the enlargement b^{10} of the slot is in a part of the hoop not offset, as shown in Fig. 3, so that when the slot b^9 is over the head of the stud a and the beater is lifted by the raising of the nut b^3, said head of said stud falls into the offset and is prevented by the vertical ends of the offset from becoming disengaged accidentally or without tipping the beater laterally.

In Fig. 4 the enlargement b^{12} of the slot b^9 is a straight transverse connected slot in the vertical part of said offset.

In Figs. 5 and 6 the slot b^{13} is made at right angles to the plane of the hoop, and the corners b^{17} at the open end of said slot are turned up to prevent said hoop from being disengaged from the stud by accident.

In Fig. 7 the centering-stud a^2 is provided with a hole or loop to receive a hook b^{14}, which swivels in the lower part of the egg-beater,

said hook serving the purpose of preventing the holder being raised when the nut b^3 is raised.

In the forms of beater represented in Figs. 1 and 3 the beater is disengaged from the holder by tipping its upper end in the direction of the enlargement b^{10} of the engaging slot, while in that represented in Figs. 5 and 6 the upper end of the beater is tipped in the direction of the open end of the slot, in each case the lower end of the beater being at the same time moved in the opposite direction from the upper end. The center of the bottom of the holder is rounded upward at b^{18} in all cases where the agitator rests directly upon said bottom, as shown in Fig. 1, to lessen friction.

The construction above described enables the holder to be held by one hand while the nut is operated by the other; or if the holder and its contents are of sufficient weight the holder may rest upon a table or other support and the beater be operated by one hand grasping the nut.

I claim as my invention—

1. The combination of the holder provided with a stud on the inside of the bottom thereof, said stud having an enlarged head, and the beater provided with a slot or hole to engage said stud below said head, as and for the purpose specified.

2. The combination of the holder provided with a stud having an enlarged head, and the beater having an agitator provided with a slot extending from the middle of the bottom of the same laterally outward, said slot having at its outer end an enlargement of sufficient diameter to admit the head of said stud, as and for the purpose specified.

3. The combination of the holder provided with a stud having an enlarged head, and the beater having an agitator provided with a downward offset and with a slot extending from the middle of the bottom of said agitator laterally outward, said slot being partly in the offset portion of said agitator and having at its outer end beyond said offset an enlargement of sufficient diameter to admit the head of said stud, as and for the purpose specified.

4. The beater provided with an agitator consisting of a hoop arranged in a vertical plane and having sides convex on their inner faces and concave on their outer faces to draw the material beaten toward the center of said agitator and to allow the air to pass down in the concavities of said sides and to mix with said material, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 6th day of March, A. D. 1889.

ALBERT WHITE.

Witnesses:
ALBERT M. MOORE,
SAM H. LIBBY.