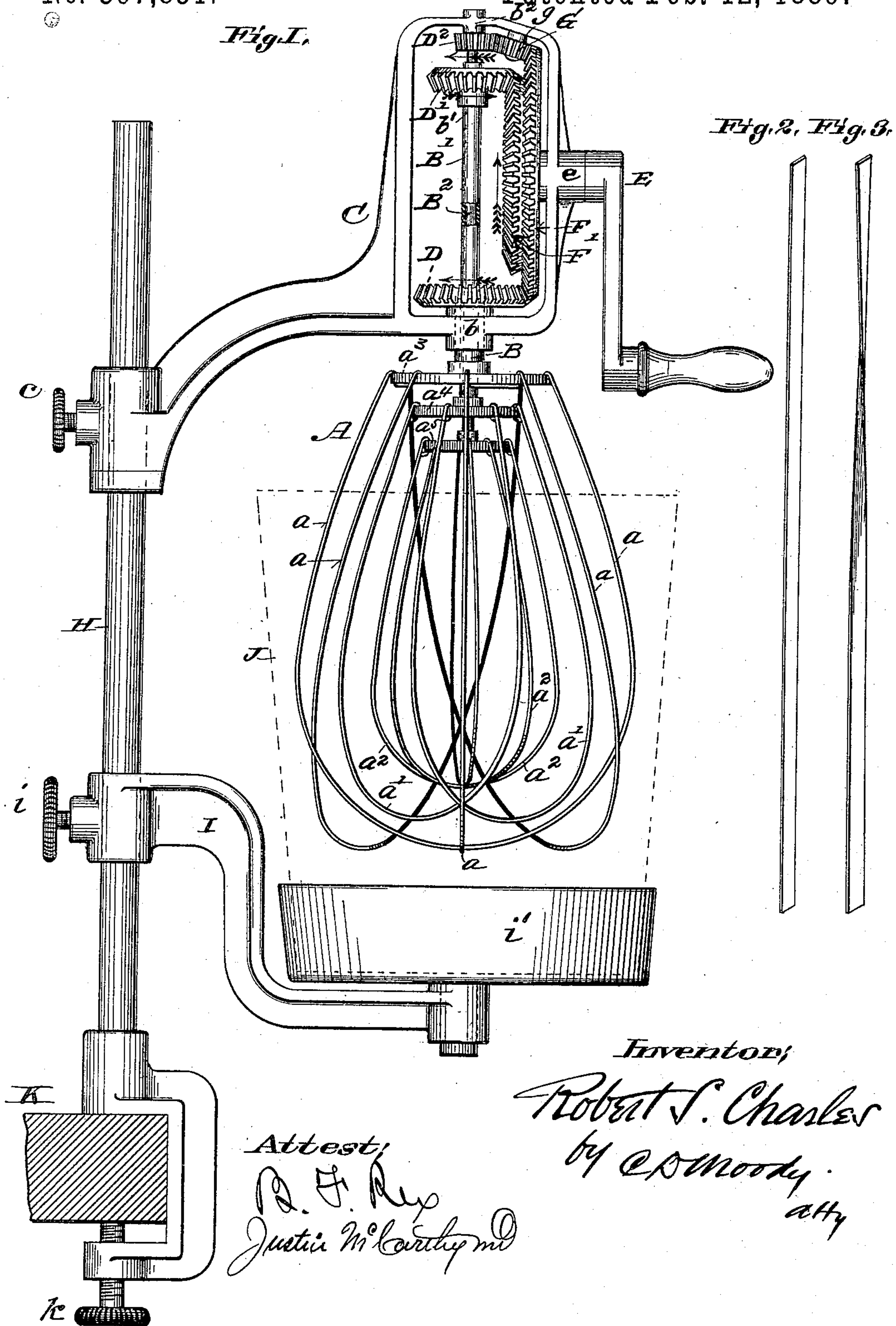


(No Model.)

R. S. CHARLES.  
EGG OR CAKE BEATER.

No. 397,831.

Patented Feb. 12, 1889.





# UNITED STATES PATENT OFFICE.

ROBERT S. CHARLES, OF ST. LOUIS, MISSOURI.

## EGG OR CAKE BEATER.

SPECIFICATION forming part of Letters Patent No. 397,831, dated February 12, 1889.

Application filed August 1, 1888. Serial No. 281,662. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT S. CHARLES, of St. Louis, Missouri, have made a new and useful Improvement in Egg and Cake Beaters, of which the following is a full, clear, and exact description.

This invention is an improvement in that class of beaters in which the whip is operated by gearing.

The improvement relates mainly to the construction and operation of the whip, substantially as is hereinafter set forth and claimed, and illustrated in the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation of the improved beater, and Figs. 2 and 3 details showing the form of wire preferably used in carrying out the improvement.

The views are upon different scales, and the same letters applied to the several drawings denote the same parts.

A represents the improved whip. Its first distinctive feature is its being composed of three distinct concentric sets,  $a$   $a'$   $a^2$ , of wire loops, attached, respectively, to the three heads  $a^3$   $a^4$   $a^5$ , two of said sets—namely, the outer,  $a$ , and the inner,  $a^2$ —being adapted to be rotated in one direction, and the intermediate set,  $a'$ , to be rotated in the opposite direction. To this end the said heads are fastened, respectively, to the three concentric shafts  $B$   $B'$   $B^2$ , which are adapted to be rotated in a bracket, C, and are operated by gearing substantially as follows: The outer shaft, B, is journaled at  $b$  in the bracket, and above its bearing the shaft is provided with the bevel-gear D. The intermediate shaft,  $B'$ , is journaled in and extends upward through the shaft B and gear D, and at its upper end,  $b'$ , it is provided with the bevel-gear  $D'$ , and the inner shaft,  $B^2$ , is journaled in and extends upward through the shaft  $B'$ , and above that shaft is provided with the bevel-gear  $D^2$ , and above the gear  $D^2$  the shaft  $B^2$  is journaled at  $b^2$  in the bracket.

E represents a crank-shaft journaled at  $e$  in the bracket C, and having fastened to it the two bevel-gears F and  $F'$ . The gear F at its lower end engages with and drives the bevel-gear D, and at its upper end it engages with and drives a bevel-gear, G, which at  $g$

is journaled in the bracket C, and which serves to transmit the motion of the gear F to the bevel-gear  $D^2$ . The gear  $F'$  at its upper end engages with and drives the bevel-gear  $D'$ . By this means, when the crank-shaft E is rotated, the three sets of loops or whips and their respective shafts are driven in opposite directions, the inner and outer sets being driven in one direction and the intermediate set being driven in the opposite direction, and by reason of the whips being driven in different directions, as described, the material to be beaten is very thoroughly and rapidly operated upon.

The effectiveness of the device is further increased by employing a flat wire—such as shown in Fig. 2—in the place of the ordinary round wire commonly used in egg-beaters, and which, for convenience in drawing, is shown in Fig. 1—that is, I prefer to form the loops of all the whips of the flat wire of Fig. 2; and to still further increase the efficiency of the beater the loops of the outermost whip have the wire twisted, as shown in Fig. 3. This twist cannot well be illustrated in Fig. 1.

The bracket C, carrying the whips and gear, as described, can be attached to any suitable frame or support. I prefer it to be used in combination with a standard, H, which is upheld, say, by clamping it, as indicated, and by means of the screw  $k$ , to a support, K. The bracket can be adjusted vertically upon the standard and fixed at any point thereon by means of the set-screw  $c$ .

I represents an arm capable of being adjusted vertically upon the standard, and by means of the set-screw  $i$  held at any elevation thereon. The arm carries a holder,  $i'$ , for the vessel, (indicated in broken lines J, Fig. 1,) which contains the eggs or other substance being whipped. After the operation is completed, by loosening the screw  $i$  the arm, with the vessel, can be readily lowered to clear the whip, which is a more convenient mode of disengaging the whip than if the last-mentioned part has to be lifted out of the vessel.

I claim—

In an egg and cake beater, the combination, with the bracket, of a crank-shaft journaled therein provided with two bevel-gears

of different diameters, a bevel-gear or idler,  
and three concentric shafts also journaled in  
said bracket, each shaft being provided with  
a bevel-gear at one end and a head at the  
5 other end, and each head having attached  
thereto wire loops forming a whip composed  
of three distinct sets of loops, the bevel-gears  
upon the crank-shaft and the bevel-gear jour-

naled in the bracket meshing with the bevel-  
gears upon the concentric shafts, substan- 10  
tially as described.

ROBERT S. CHARLES.

Witnesses:

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C. C. LOGAN.