J. HOWES.

Egg-Beater.

No. 165,585. Patented July 13, 1875.

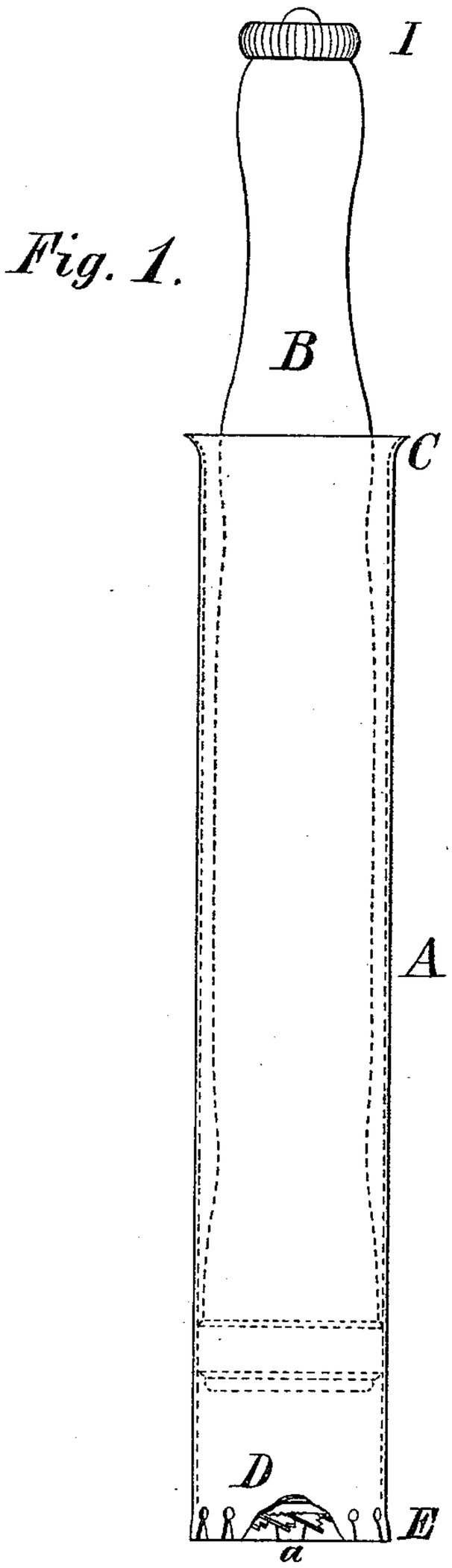

Fig. 1.

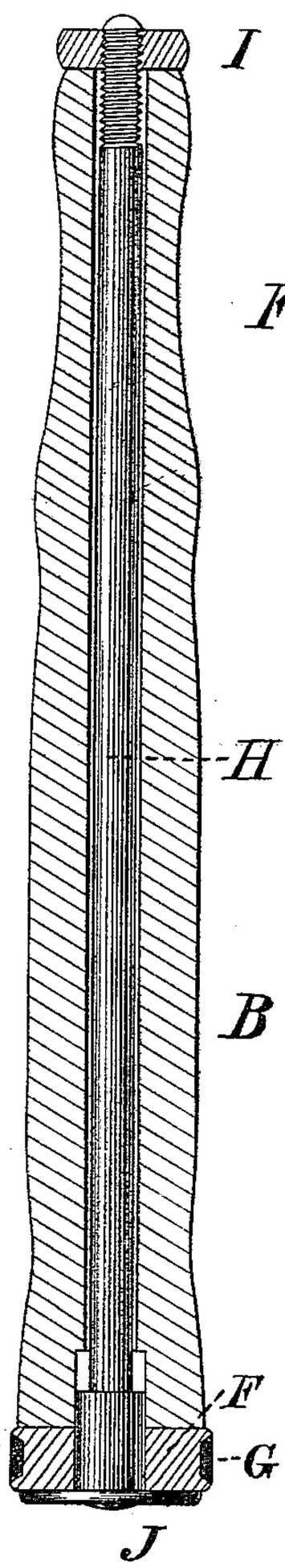

Fig. 2.

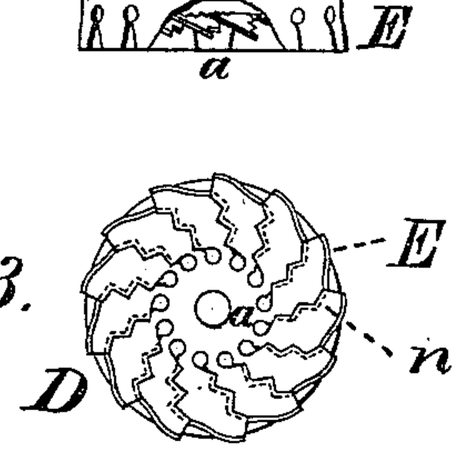

Fig. 3.

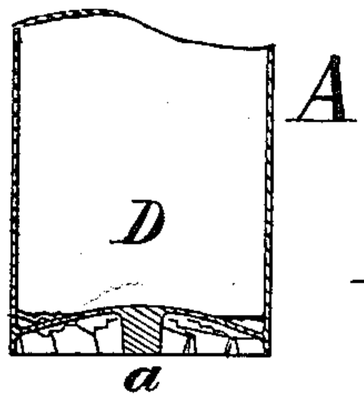

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN HOWES, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN EGG-BEATERS.

Specification forming part of Letters Patent No. **165,585**, dated July 13, 1875; application filed May 10, 1875.

To all whom it may concern:

Be it known that I, JOHN HOWES, of the city and county of Worcester, State of Massachusetts, have invented certain Improvements in Egg Beaters and Mixers, of which the following is a specification:

My invention is designed to be used for beating eggs, mixing batters and other fluid or semi-fluid mixtures, and relates to that class of egg beaters or mixers in which a tube or cylinder and piston are used, the motion of the piston alternately drawing in and forcing out the materials through openings in or near the end of the tube. Its nature consists in the several improvements in form and construction described below.

In the various attempts to use this class of mixers, particularly in a small or medium sized dish, the discharge being delivered radially outward or downward in either case, the velocity necessary to work effectively causes the streams to strike the vessel, and be turned upward and be thrown out, unless great care is used.

My invention differs in this particular, as by making the openings in an oblique form the discharge is always tangential, and it strikes the vessel, so as to cause a circular or rotary motion of the materials, and the danger of overflow is avoided.

The accompanying drawings show an egg beater and mixer embodying my invention.

Figure 1 is a side view. Fig. 2 is a longitudinal section of the piston and its component parts. Fig. 3 is a view of the bottom of Fig. 1. Fig. 4 is a cross-section of the same.

The same letters indicate the same parts wherever they occur.

A is the cylinder or tube, made with its open end C flared in a curve, as shown, both for the purpose of giving it stiffness, and to give free access and form a guide to the piston B, and not scrape it in operation. The other end of A is fitted with a head, D, having apertures with waved or zigzag edges, as shown at *n*, Fig. 3. This head D is joined to the tube A a short distance from the end, and beyond this the tube is cut into sections, as at E, each of which is slightly bent or twisted to form oblique openings, through which the fluid passes, and is discharged in a line tangent to the surface of the tube A, and is drawn in in a similar manner. The middle of the head D is supported by a block, *a*, Fig. 4.

The openings in D are made by twisting or bending the sections after they are cut with the zigzag cuts, thus making oblique apertures, giving a tangential discharge, though the outer ones in A control it most effectually.

The piston B is made with one end in convenient form to be grasped by the hand and operated, and with its body a little smaller than the inside of the tube A, and nearly straight, for the purpose of working smoothly on C, and keeping the packing F G nearly square with the tube, to work smoothly in it, while a short space near the packing is turned smaller, to make room for any leakage that may occur. The packing F is held in place against the end of B by the disk J, which has a rod, H, passing through B, with a nut, I, whereby the packing may be compressed.

The packing F is of an elastic material, as rubber, and covered with a fibrous stuffing, G, which will work smoothly in the tube A, as cotton-wicking or similar substance, the action of the pressure of disk J being to force the middle or body of F out more than the edges, thus pressing out G to make a tight fit and take the wear, for which the nut I forms a convenient means of adjustment.

When the mixer is put into a vessel for use, the tube A is held with one hand and the piston B operated by the other, and, if slightly tipped, is guided by the curved flare C without the need of a cap or cover; and the end E rests on the bottom, and the middle of D is supported, and the materials are drawn in and forced out both ways against or across the edges of the apertures, the zigzag ones assisting the sharp ones in cutting and tearing glutinous or gummy semi-fluids, making it operate quickly and effectively on eggs, batters, and other mixtures.

What I claim as new, and desire to secure by Letters Patent, is—

1. An egg beater or mixer provided with the oblique openings E *n*, giving a tangential discharge, in combination with tube A and piston B.

2. An egg beater or mixer consisting of the tube A, piston B, and head D, having a series of zigzag openings, as described.

3. An egg beater or mixer having a centrally-supported head, D, in combination with tube A and piston B, as set forth.

4. An egg beater or mixer consisting of the tube A and piston B, having an elastic packing, compressible by the rod and nut I without being removed from the tube A.

JOHN HOWES.

Witnesses:

DANL. DUNN,

ED. START.