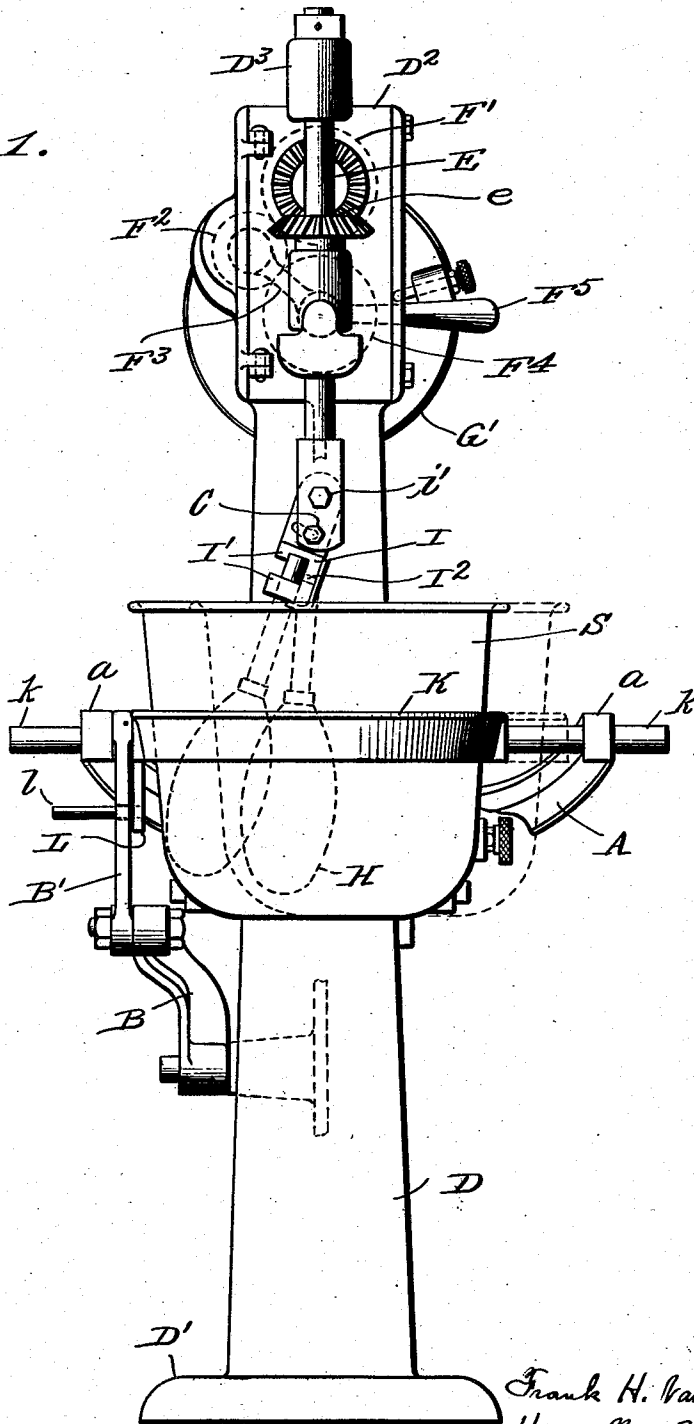


F. H. VAN HOUTEN & H. M. BACHMAN.
BEATING AND MIXING MACHINE.
APPLICATION FILED DEC. 23, 1908.

942,116.

Patented Dec. 7, 1909.
2 SHEETS—SHEET 1.

Fig. 1.



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Fig. 2.

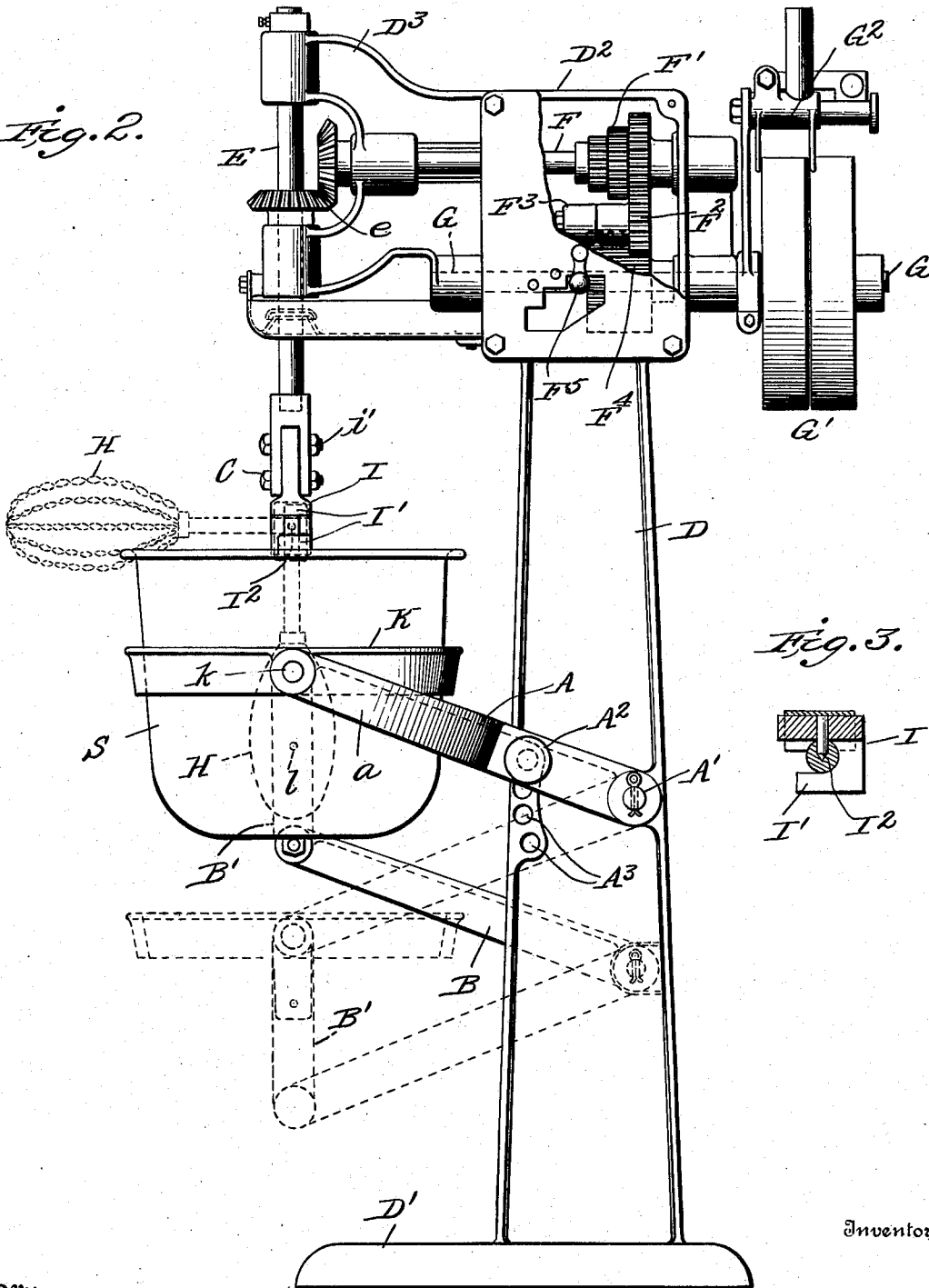
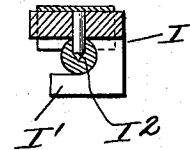


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BEATING AND MIXING MACHINE.

942,116.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, FRANK H. VAN HOUTEN and HARRY M. BACHMAN, of Fishkill-on-the-Hudson, New York, have invented certain new and useful Improvements in Beating and Mixing Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to machines primarily adapted for mixing and beating eggs, cream, sponges for cakes, dough, etc., the objects of the invention being to provide a simple and convenient machine having a more universal capacity than machines as heretofore constructed, and adapted to simulate, in a measure, hand beating and mixing operations.

The invention consists in certain novel details of construction and combinations and arrangements of parts all as will be hereinafter described and pointed out particularly in the appended claims.

In the accompanying drawings: Figure 1 is a front elevation of a beating machine embodying the present improvements. Fig. 2 is a side elevation of the same with a portion of the head casing broken away to show the change speed gearing. Fig. 3 is a transverse section through the chuck or beater holding head.

The machine illustrated in the accompanying drawing and which is a preferred embodiment of the invention of the present application, has the working parts and bowl supported on a vertical standard D which may be in the form of a casting having a base or foot D' and a head D². The head D² forms a housing or casing for the change speed gearing to be hereinafter described and supports an overhanging arm D³, in which a vertically arranged shaft E is journaled. The shaft E derives its motion through bevel gears *e* from a second shaft F, preferably having a cone of gears F' thereon and any one of which is adapted to be engaged by an intermediate pinion F² journaled on a carrier F³ pivotally mounted on a countershaft G. The countershaft G carries a long gear wheel F⁴ with which the pinion F² is constantly in mesh, and means

are provided, such as the handle F⁵ projecting through an opening in the casing, for shifting the intermediate gear F² into position to mesh with any one of the gear wheels F'. Motion is imparted to the countershaft through fast and loose pulleys G', and for convenience a belt shifter G² is provided for starting and stopping the machine.

The vertically arranged shaft E is adapted to carry the beater or mixing implement, such, for instance, as the whip H, and in order that a variety of movements may be imparted to the beater the chuck or head I on which the same is mounted is pivotally connected with the lower end of the shaft at *i* and is adapted to be moved from a central to an eccentric position, as shown, for instance, in Fig. 1, and to be securely clamped by a bolt C in whatever position it may be adjusted.

As a convenient means for mounting the whip or beater in the chuck or head I, the latter is provided with oppositely extending hook-shaped arms I' having a sufficient space between them for the admission of the stem of the whip or beater when turned horizontally, as shown by the dotted lines in Fig. 2, and the ends of the hook-shaped arms are so arranged that when the beater or whip is turned down to the position shown in Fig. 1 transverse movement of the end of the beater stem is prevented.

To prevent longitudinal movement, a central pin I² is provided on which the stem of the beater will pivot in turning from its horizontal to its vertical position, and whereby both rotary and longitudinal movement of the said beater with relation to the chuck or head is prevented.

With the arrangement described, the beater or whip may be set to rotate on its own axis or to describe a circle about the axis on which it rotates, and the diameter of the circle may be varied by changing the eccentricity or angle at which the beater projects from its axis of rotation.

The bowl or receptacle S in which the materials to be beaten or whipped are located is adapted to be supported in a ring or annular carrier K, having oppositely projecting trunnions *k* journaled in the forwardly projecting arms *a* of a supporting frame A pivotally mounted on the standard at A', and having means such as the sliding

pin A² adapted to engage apertures A³ in the standard for locking the supporting ring at the desired level, as indicated by the dotted lines in Fig. 2.

- 5 In the preferred arrangement, the ring or support K is of less diameter than the distance between the ends of its supporting arms *a* and the trunnions *k* are of sufficient length to permit of the ring and the receptacle which it supports being moved from a central to an eccentric position with respect to the axis of rotation of the beater. As a result of this arrangement it becomes possible, as shown in Fig. 1, to beat or whip the material against one side of the receptacle, in which respect the machine simulates closely a hand operation of beating or whipping.

While the receptacle might be allowed to swing in its trunnion bearings, it is preferred to provide a means whereby it will be maintained in its correct horizontal position at any point of vertical adjustment, and for this purpose a parallel arm B is pivotally mounted on the standard D and at its end connected by a link B' with one of the trunnions *k* or with one of the arms *a*. A downwardly extending bracket or projection L on the ring carries a pin *l* working through an aperture in the link B', and said pin is made of sufficient length to permit of the lateral movement of the ring without becoming separated from the link, thus not only will the ring be held in its correct horizontal position, but it is left entirely free for lateral movement in a horizontal plane.

Having thus described the invention, what we claim as new and desire to secure by Letters-Patent, is:

- 40 1. In a creaming and beating machine, the combination with the standard, the receptacle support mounted on said standard, of a vertical shaft mounted in fixed bearings with means for rotating the same, a beater holder mounted on the lower end of the shaft, and oppositely projecting arms on said holder separated by a space in which the beater may be inserted transversely of the holder and behind which arms the beater may be turned into vertical position, substantially as described.

2. In a creaming and beating machine, the combination with the vertical standard, the receptacle support adjustably mounted on said standard and the overhanging arm, of the vertical shaft journaled in said arm, means for rotating said shaft, a beater holder pivotally mounted on the lower end

of the shaft to swing transversely, a clamp for securing said holder in its adjusted position, and oppositely projecting arms on said holder separated by a space in which the beater may be inserted transversely of the holder, and behind which arms the beater may be turned into vertical position, substantially as described.

3. In a creaming and beating machine, the combination with the standard, vertically arranged beater shaft, and means for rotating said shaft, of a receptacle support embodying a ring in which the receptacle is mounted, said ring having oppositely projecting trunnions and a vertically adjustable frame in which said trunnions are loosely mounted to move longitudinally, whereby the receptacle may be moved into an eccentric position with respect to the axis of the shaft.

4. In a creaming and beating machine, the combination with the standard and vertically arranged beater shaft with means for rotating the same, of the receptacle support embodying a ring having oppositely extending trunnions, a frame pivotally mounted on the standard and having bearing in which said trunnions are movable longitudinally to adjust the receptacle transversely, a downwardly extending link connected with said ring, a parallel pivoted arm for holding said ring in its horizontal position when adjusted vertically and means for holding the ring in its vertical position of adjustment.

5. In a creaming and beating machine, the combination with the vertical standard having the head and overhanging arm, the vertical shaft journaled in said arm, the horizontal shaft journaled in the head, and change gearing interposed between said shafts, of the receptacle support embodying a ring having oppositely extending trunnions, a frame in which said trunnions are mounted and movable longitudinally for the transverse adjustment of the receptacle, said frame being pivotally mounted on the standard, means for holding said frame in its adjusted position, an arm parallel with said frame, and a connection between said arm and ring whereby the ring is maintained in its horizontal position regardless of its position of vertical adjustment.

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