

No. 892,856.

PATENTED JULY 7, 1908.

E. W. LADD.
EGG BEATER.

APPLICATION FILED AUG. 19, 1907.

Fig. 1.

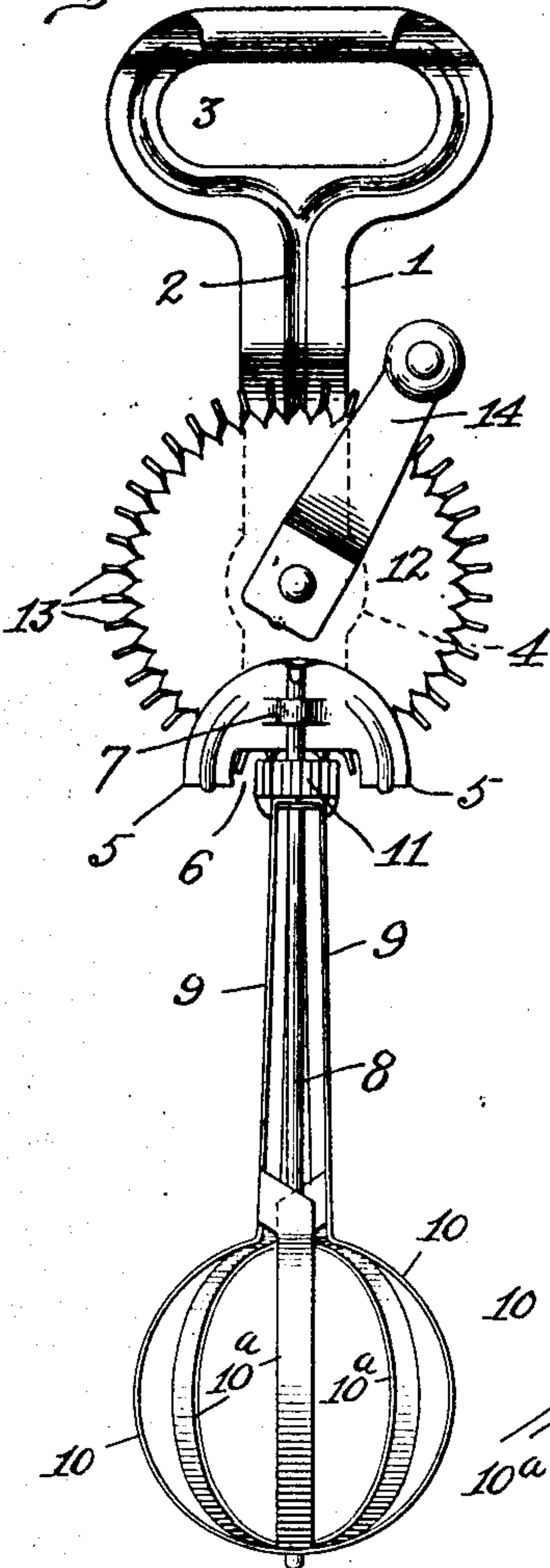


Fig. 2.

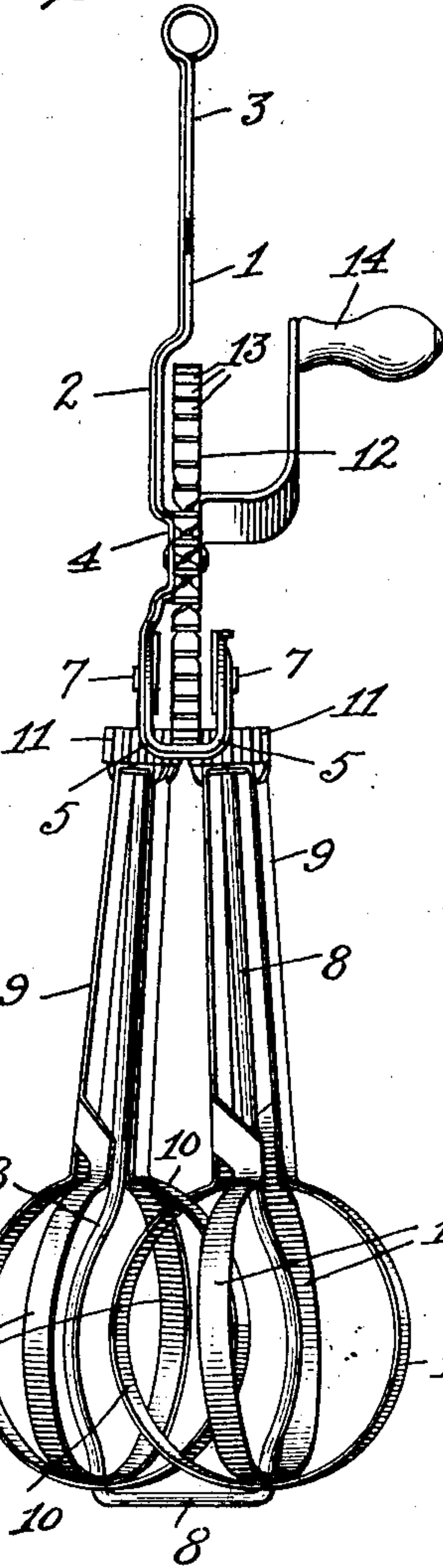


Fig. 3.

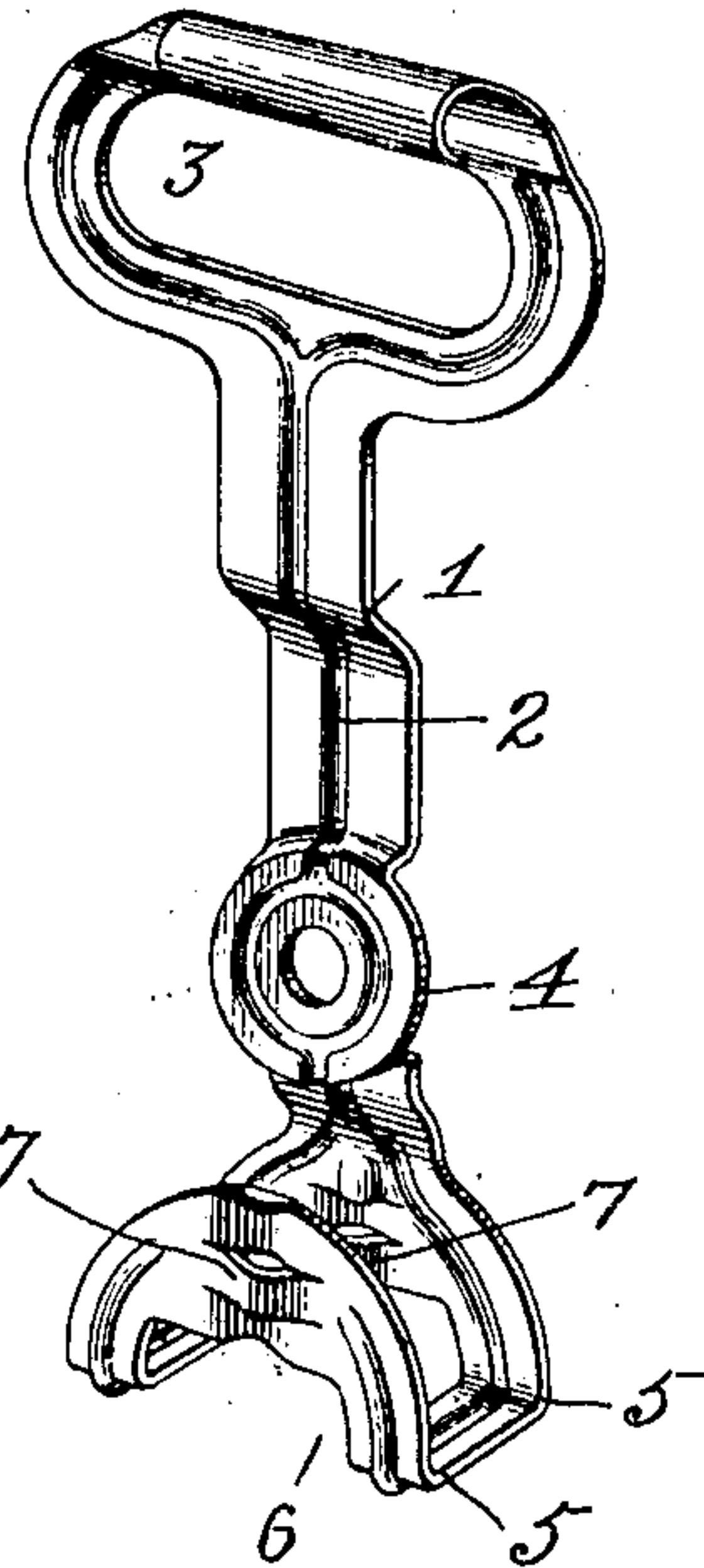


Fig. 4.

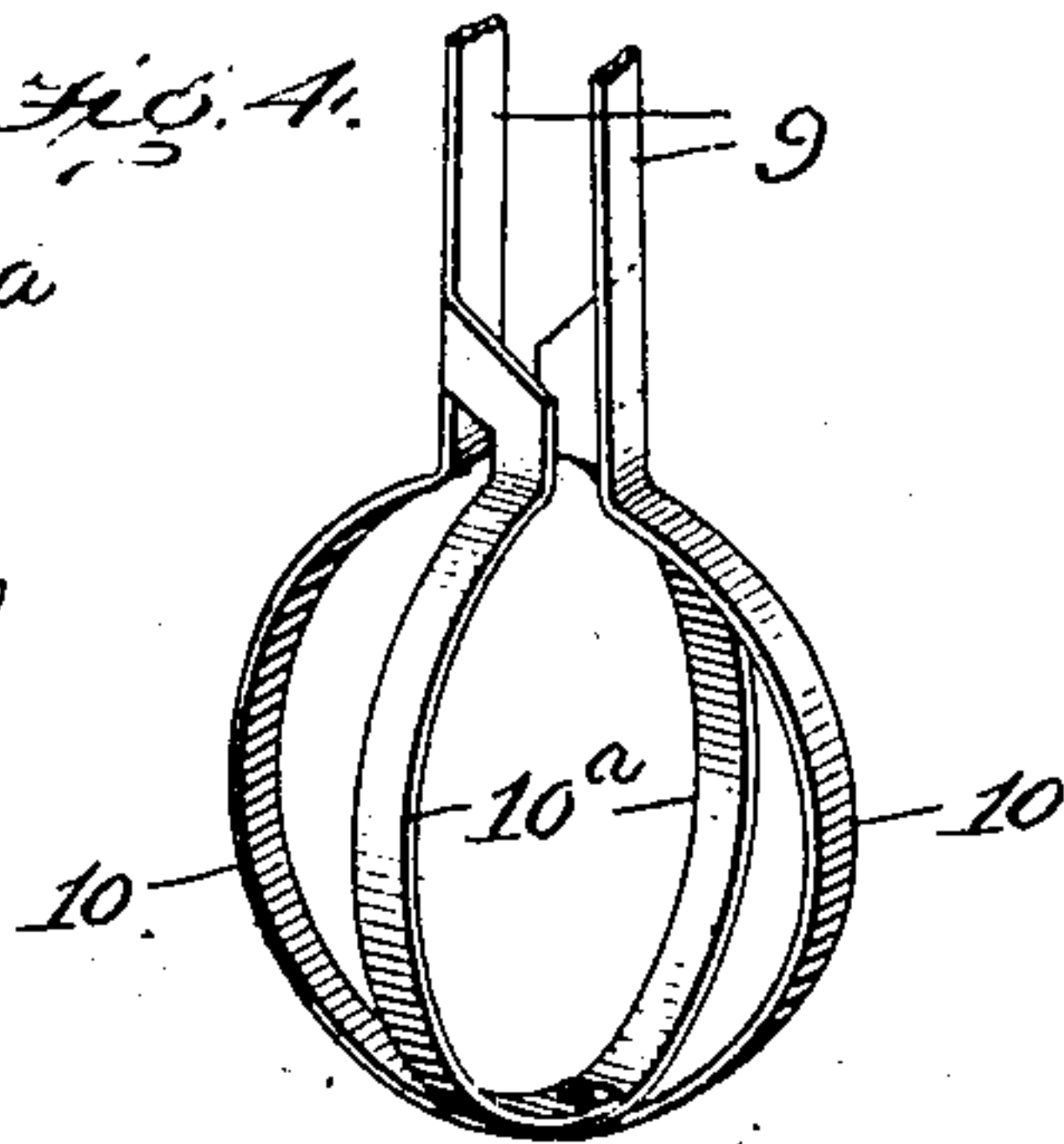


Fig. 5.

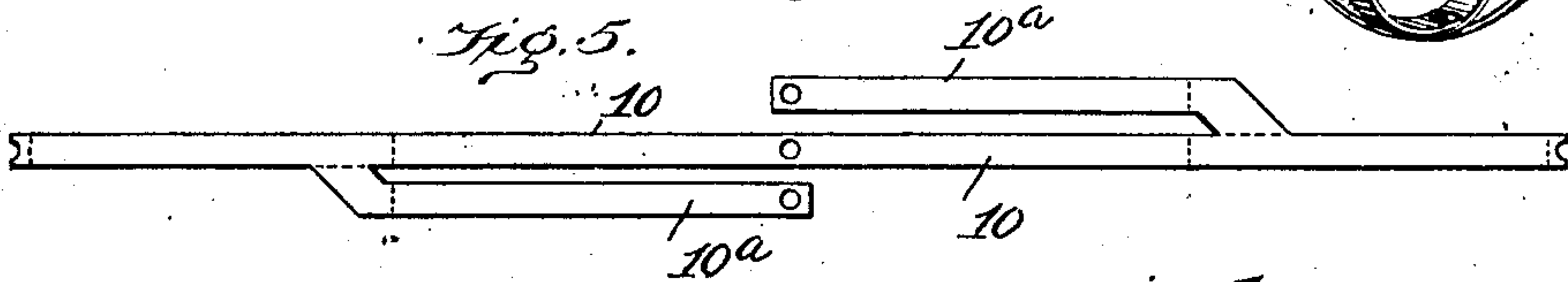
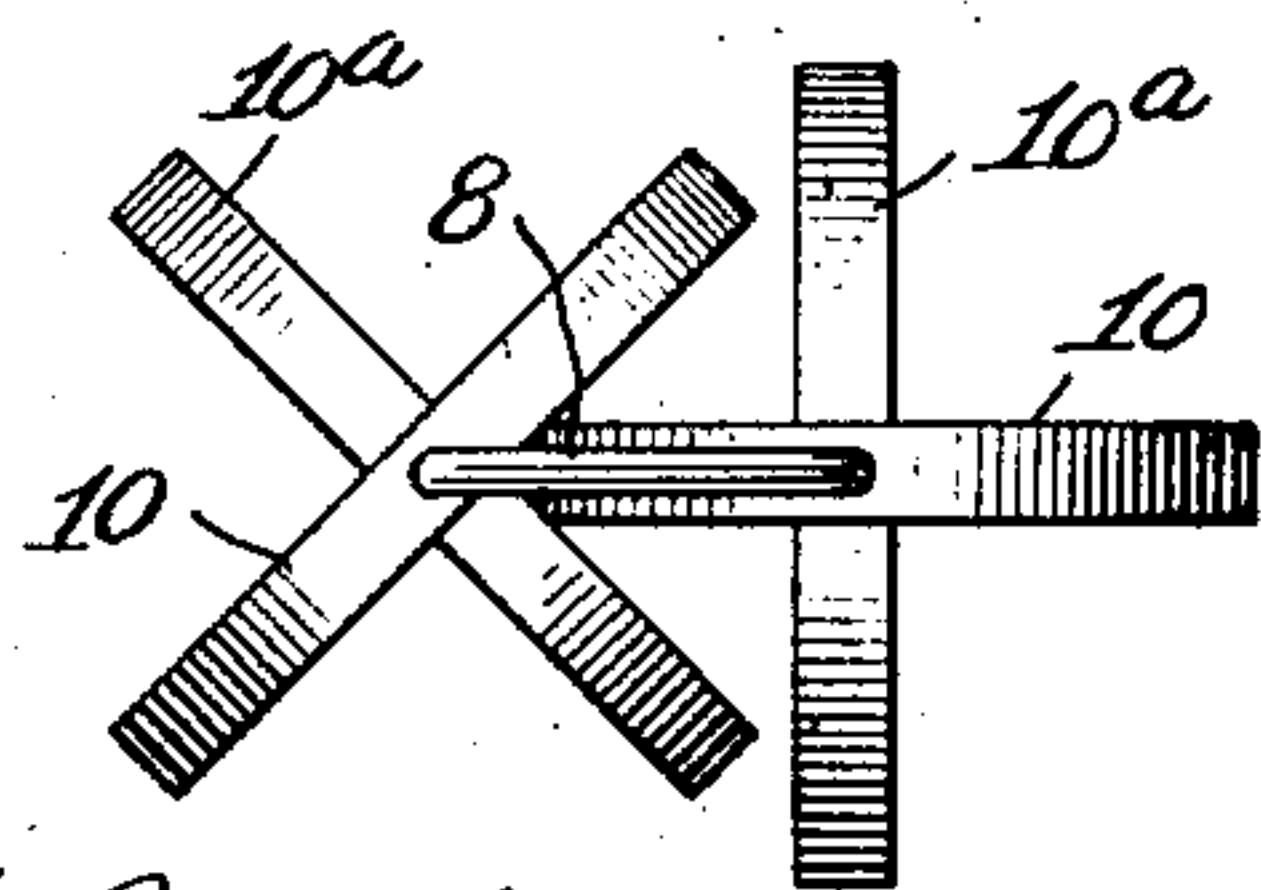


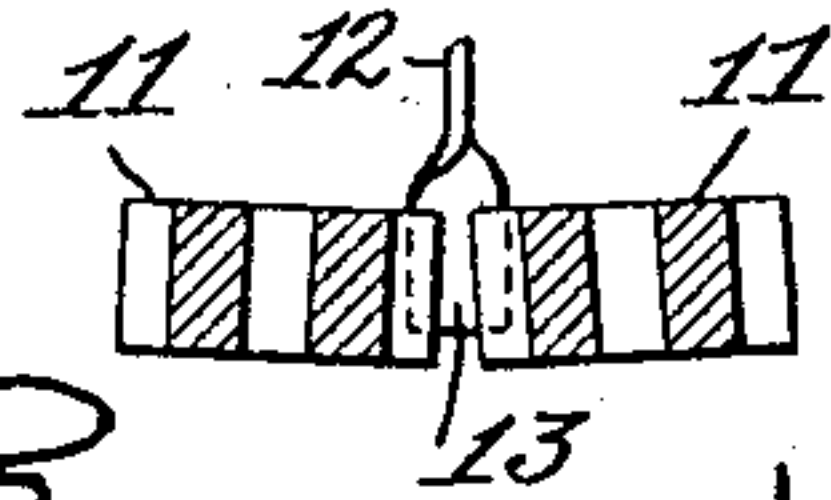
Fig. 6.



Witnesses

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Fig. 7.



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UNITED STATES PATENT OFFICE.

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EGG-BEATER.

No. 892,856.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed August 19, 1907. Serial No. 389,195.

To all whom it may concern:

Be it known that I, EARNEST W. LADD, a citizen of United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Egg-Beaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to mixers, kneaders and beaters, but has particular reference to rotary egg-beaters of the multiple blade type, such as exemplified by that form known to the trade as the "Dover."

It has for its object various improvements upon the Dover among which may be noted simplicity and economy of construction, lightness, durability and a greater general efficiency than ever before attained by beaters of the Dover or any other type.

As a further object and novel feature of construction the present invention discloses for the first time a double set of rotary beater-members each having more than two interlacing beater-blades, and each positively driven in opposite directions.

As a further object the invention contemplates the formation of each set of said beater-members from a unitary strip of sheet metal, and so forming the blades thereof as to produce the most advantageous and sanitary results.

The present invention also has for an object the production of a sheet metal or stamped supporting frame, and a main drive or actuating wheel made in like manner, for imparting rotary motion to the beater-members aforesaid by agency of ordinary pinions affixed to said beater-members, and driven by the teeth of said actuating wheel interposed between them.

As a still further object the invention provides for quickly and economically assembling the component parts of the structure, including the driving wheel, which, when assembled, is constantly in mesh with both of its driven pinions between which latter it is guided in its rotary action without the necessity of an accurate pivotal connection upon the supporting frame.

The invention consists in the construction, novel combination and arrangement of parts, hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims following.

In the drawings which form part of this application and whereon like numerals of reference designate corresponding parts in the several views: Figure 1 represents in front elevation the complete invention in position for use. Fig. 2 the same in side elevation. Fig. 3 is a detached view in perspective of the handle and depending shank hereinafter termed the supporting frame. Fig. 4 represents in perspective one set of beater-blades. Fig. 5 is a plan view of a unitary blank from which each set of blades is formed. Fig. 6 is an inverted plan view of two co-acting sets of beater-blades, and, Fig. 7 is a fragmentary view of the main driving wheel showing one tooth in elevation, and in section two gears in position to be driven thereby.

Reference being had to the drawings and numerals thereon, 1 indicates the main supporting frame of my invention by preference stamped from sheet steel and configured by suitably arranged reinforcing ribs 2 for purposes of lightness, strength and economy of manufacture. The frame 1 is provided with a handle 3 of any suitable form or configuration; also an intermediate boss 4 affording a support for the main drive wheel as will later appear, while the opposite or lowermost end of said frame is folded upon itself at 5, 5 as most clearly shown by Figs. 2 and 3. The said double or folded portions of frame 1 are cut away or recessed as shown at 6, and are broken by oppositely and outwardly disposed loops 7, 7 which latter receive and securely retain the upper ends of a frame-extension or loop 8 for purposes that will later appear. Upon each vertical member of said frame-extension 8 are axially and rotatably mounted beater-members 9, 9, shown in the present illustrations as counterparts one of the other and by preference made of sheet metal from a unitary blank such as illustrated by Fig. 5. These members 9 each have beater-blades 10 and 10^a disposed in a plurality of planes about the axis 8 upon which they rotate. The present illustrations most clearly show (Fig. 4), a quadruple arrangement of such blades, there being two main blades 10 and two collateral blades 10^a the latter branching from the former, and the several blades arranged in opposite pairs 10—10; 10^a—10^a, and adapted to interlace without interfering when oppositely rotated.

The uppermost ends of each of the unitary

beater-members 9—9 are surmounted and secured together by ordinary pinions 11, 11 which do not actually mesh but the teeth of which are in close proximity. These pinions forming part of the beater-members 9—9 are rotatably centered upon the frame-extension 8, 8, one of said members upon each standard of said extension.

Journalled upon boss 4 of the supporting frame 1 is the main driving wheel 12 by preference formed from a disk or blank of sheet metal the outer edge whereof is slit radially at frequent and suitable intervals, the intervening portions of said cut edge being bent or twisted at an angle to the plane of the wheel to form teeth 13 as shown by Figs. 1 and 2. This drive wheel 12 is so positioned that its teeth 13 are interposed between and intermesh with the teeth of both pinions 11, 11 to drive them and their respective beater-members 9, 9 in opposite directions. And, as a means of conveniently turning or actuating wheel 12 an ordinary handle 14 is provided, also by preference formed of sheet metal rigidly attached to the wheel, and so bent as to readily clear all parts of the structure in the course of its rotation as shown by Fig. 2.

This being a description of my invention its use and operation are self evident; it may be noted, however, that the relative arrangement and balance of the driving and driven wheels is such as to insure the greatest freedom and certainty of action with the least possible wear upon the moving parts, and without the necessity of accurate adjustment. The pinions 11, 11 in addition to their ordinary functions serve to guide and steady the wheel 12 throughout its rotary action, and while the efficiency of the beater-members 9 is increased in proportion as additional blades 10 and 10^a are employed, the space required for operating said blades is not increased to any appreciable extent owing to their interlacing or interweaving action hereinbefore described.

Having thus shown and described my invention in its preferred form it should be understood that various changes in the construction, combination and arrangement of parts may be made without in the least departing from the spirit of my invention which will now be set forth in the following claims:

1. In an egg-beater, the combination with a suitable frame, of unitary cooperating

beater-members each comprising main and collateral blades disposed in a plurality of planes about the axis of their respective beater-member, and means for simultaneously rotating said beater-members.

2. In an egg-beater, the combination with a suitable frame, of unitary cooperating beater-members each comprising main and collateral interlacing blades, and means for positively rotating said beater-members in opposite directions.

3. In an egg-beater, the combination with a suitable frame, of unitary cooperating beater-members each comprising main and collateral blades arranged in pairs, pinions upon said beater-members, and a drive wheel meshing with both of said pinions to rotate them in opposite directions.

4. In an egg-beater, the combination with a suitable supporting frame, of cooperating beater-members each comprising main and collateral blades, pinions upon said beater-members, and a drive wheel having radial teeth interposed between said pinions to rotate them in opposite directions.

5. In an egg-beater, the combination with a sheet metal frame folded upon itself, of beater-members rotatably mounted upon said folded portions of the frame, pinions upon said beater-members, and a drive wheel meshing with both of said pinions at a point within the folded portions aforesaid.

6. In an egg-beater, the combination with a suitable supporting frame and frame-extension depending therefrom, of beater-members rotatably mounted upon said frame-extension, pinions upon said beater-members, and a sheet metal drive wheel meshing with both of said pinions to rotate them in opposite directions.

7. In an egg-beater, the combination with a supporting frame, of a frame-extension, cooperating beater-members each comprising main and collateral blades axially and rotatably mounted upon said frame-extension, driven pinions upon said beater-members, a drive wheel interposed between and intermeshing with both of said pinions, and a handle for rotating said drive wheel.

In testimony whereof I affix my signature, in presence of two subscribing witnesses.

EARNEST W. LADD.

Witnesses:

HUGH M. STERLING,
WM. E. DYRE.

Recd. 332.937. Dec. 22, 1895 (107-37)

Br. Pat. # 17,051 of 1899

Copies, 589, 795, Rep. 7, 1897

Examination, 105, 655, July 26, 1890

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