

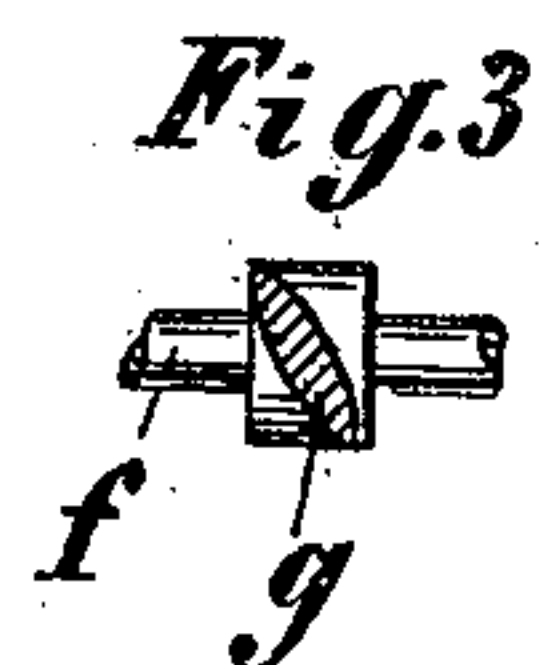
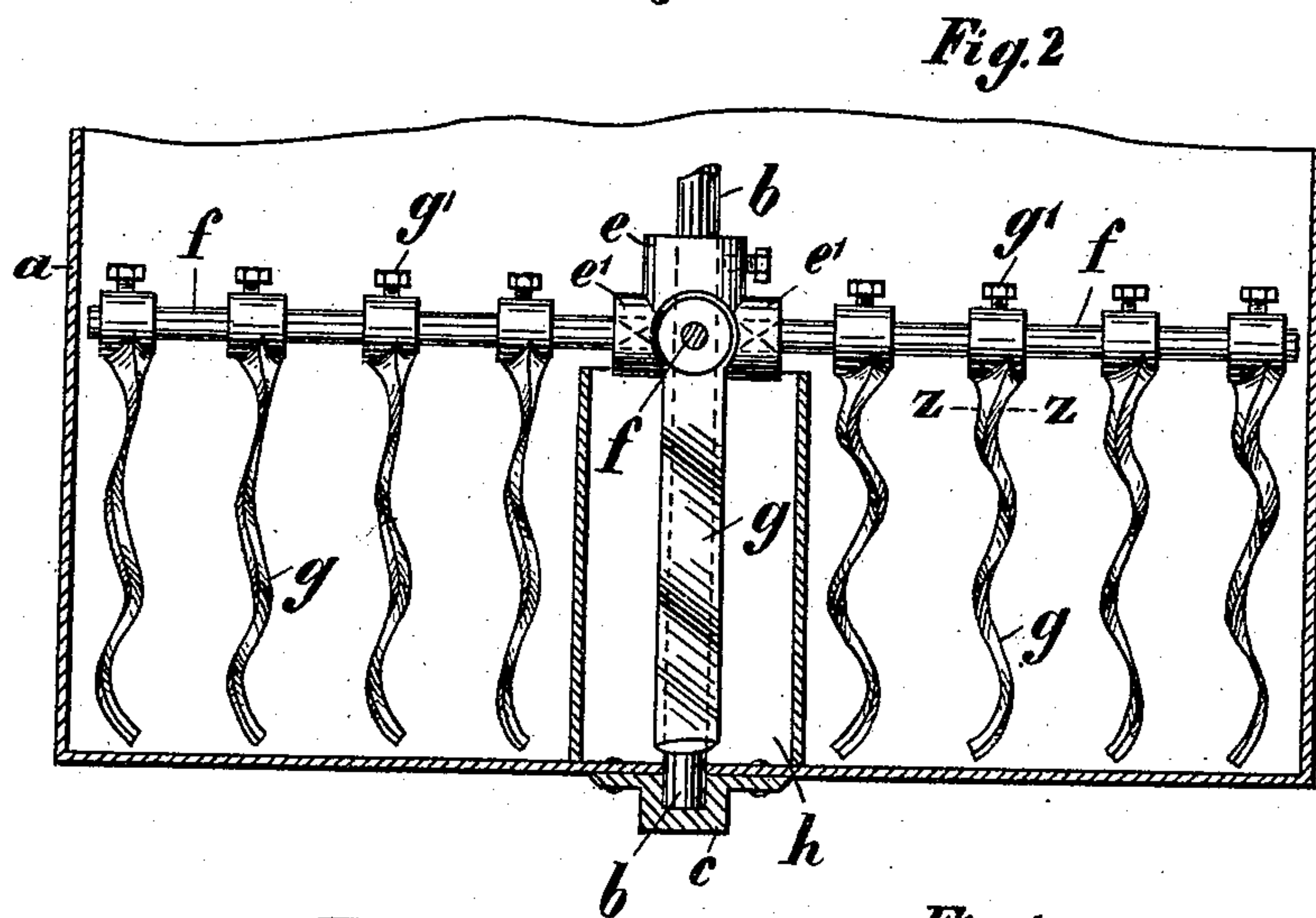
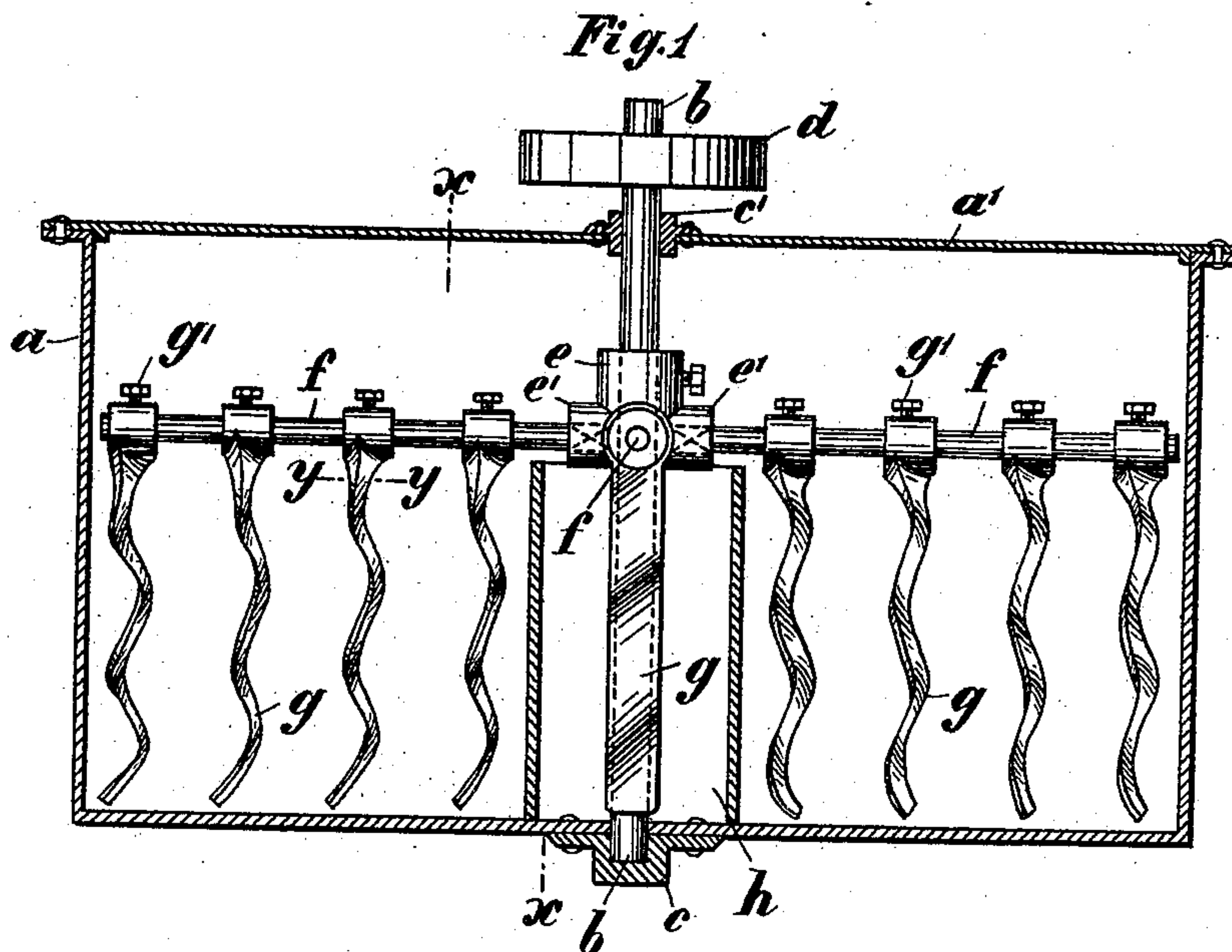
No. 619,018.

Patented Feb. 7, 1899.

C. FICKELSCHEER.
MIXING MACHINE.

(Application filed Mar. 17, 1897.)

(No Model.)



Witnesses
H. L. Deyner.
Paul Y. Goller.

Inventor
Carl Fickelscheer
By Edgar Tate & Co
Attorneys.

UNITED STATES PATENT OFFICE.

CARL FICKELSCHEER, OF CASSEL, GERMANY.

MIXING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 619,018, dated February 7, 1899.

Application filed March 17, 1897. Serial No. 628,033. (No model.)

To all whom it may concern:

Be it known that I, CARL FICKELSCHEER, manufacturer, of 6 Töpfermarkt, Cassel, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Mixing-Machines, of which the following is a specification.

This invention relates to a mixing-machine for cocoa, tea, coffee, succedaneum matter, clay, or other dry or moist material in which the materials to be mixed are moved to and fro upward and downward by a peculiar arrangement of the stirrers, so that with a comparatively small number of stirrers an intimate mixture of the materials can be effected.

The accompanying sheet of drawings illustrates a mixing-machine constructed in accordance with the invention, Figure 1 being a sectional elevation, Fig. 2 a sectional elevation taken on the line xx of Fig. 1, Fig. 3 a sectional view taken on line yy of Fig. 1, and Fig. 4 a sectional view taken on the line zz of Fig. 2.

The cylindrical mixing vessel a has in its center a vertical shaft b , surrounded by a protecting-casing h and turning in a footstep-bearing c in the bottom of the vessel and in a neck-bearing c' in the cover a' . The said shaft may be driven by a belt-pulley d or by any other suitable means. Inside the vessel a are fixed at right angles to one another in the sockets e' of a boss e , secured to the shaft b , four arms f , which carry the stirrers g . These stirrers are fixed by set-screws g' at certain distances from the shaft b . They are formed with oblique corrugations so placed that those on the stirrers of one arm are inclined in a direction opposite to those of the stirrers on the preceding and succeeding arms, as shown in Figs. 1 and 2. Every stirrer therefore acts in a direction opposite to that of the preceding one, so that the material to be mixed is moved to and fro, upward by one stirrer and downward by the next following stirrer.

The peculiar form of the stirrers is produced by first forming them into spirals and then bending or curving them laterally, so as to produce the oblique corrugations above referred to, and this feature constitutes the chief element of my invention, and by means

of the spiral and wavy form of the stirrers the mass of material is thrown into four different directions—inwardly, outwardly, upwardly, and downwardly—without the use of arms fixed and rotated in opposite directions, and the result is an intimate mixing of the material with a minimum amount of force and power and in the shortest possible time. By this arrangement it is possible with a comparatively small number of stirrers to effect an intimate mixture of the material and to reduce the power required to drive the machine as compared with mixing-machines at present in use. The section of the stirrers may be elliptic, with sharp edges, as shown in Figs. 3 and 4; but it may be of any other suitable form.

The number of arms f may be varied according to circumstances.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A mixing-machine, comprising a casing, a vertical shaft mounted therein, radial arms connected with said shaft, and vertically-arranged stirrers connected with said arms, said stirrers being spiral in form and provided with lateral corrugations or undulations, whereby the material to be mixed is moved upwardly and downwardly and inwardly and outwardly, substantially as shown and described.

2. A mixing-machine, comprising a casing, a vertical shaft mounted therein, radial arms connected with said shaft, and vertically-arranged stirrers connected with said arms, said stirrers being spiral in form and provided with lateral corrugations or undulations, whereby the material to be mixed is moved upwardly and downwardly and inwardly and outwardly, the lateral corrugations or undulations on one of said stirrers being arranged alternately with reference to those on the adjacent stirrer, substantially as shown and described.

3. A mixing-machine, comprising a cylindrical casing, a vertical shaft mounted therein, and means for operating the same, said shaft being also provided with radial arms, and stirrers connected with said arms, said stirrers being arranged vertically, and being

spiral in form and provided with lateral undulations, substantially as shown and described.

4. A mixing-machine, comprising a cylindrical casing, a vertical shaft mounted therein, and means for operating the same, said shaft being also provided with radial arms, stirrers connected with said arms, said stirrers being arranged vertically, and being spiral in form and provided with lateral undulations, the lateral undulations on said stirrers being arranged alternately, substantially as shown and described.

5. A mixing-machine, comprising a cylindrical casing, a vertical shaft mounted therein, and means for operating the same, said shaft being also provided with radial arms, stirrers connected with said arms, said stirrers being arranged vertically, and being spiral in form and provided with lateral undulations, the lateral undulations on said

stirrers being arranged alternately, and said stirrers being provided with an edge at their opposite sides, substantially as shown and described.

6. A mixing-machine, comprising a cylindrical casing, a vertical shaft mounted therein, a supplemental casing inclosing said shaft, and radial arms connected with said shaft above said supplemental casing, said radial arms being provided with vertically-arranged stirrers which are spiral in form and provided with lateral undulations, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CARL FICKELSCHEER. [L. S.]

Witnesses:

HERMANN BRAUN,
AUGUST THEW.