No. 835,655. PATENTED NOV. 13, 1906.

F. AESCHBACH.

KNEADING AND MIXING MACHINE.

APPLICATION FILED MAY 25, 1906.

Fig. 2.

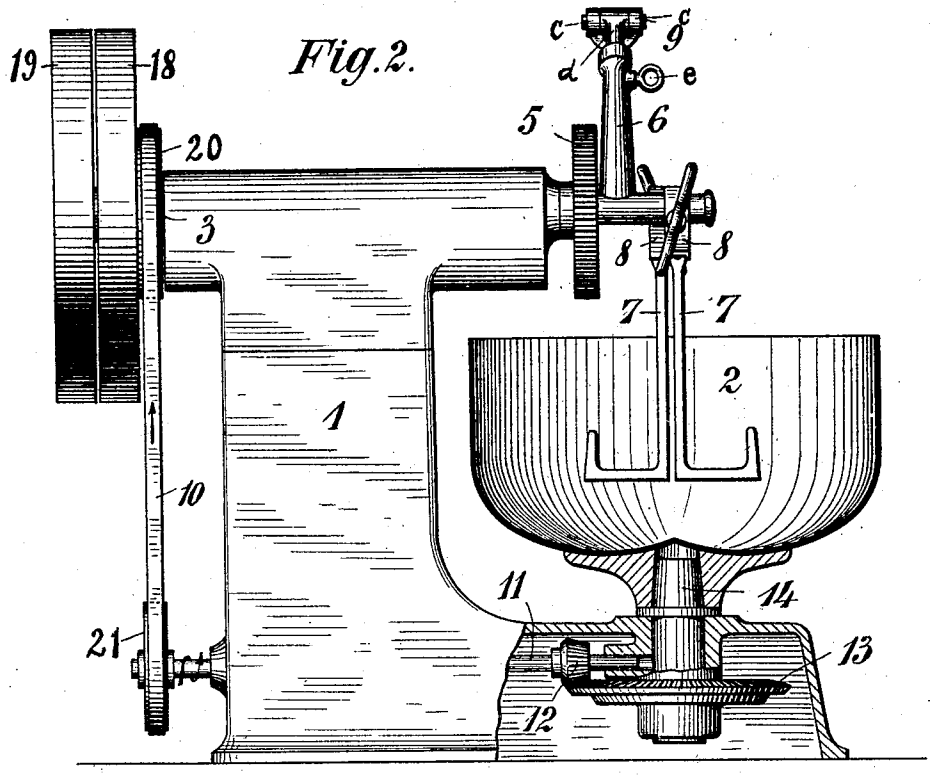


Fig. 1.

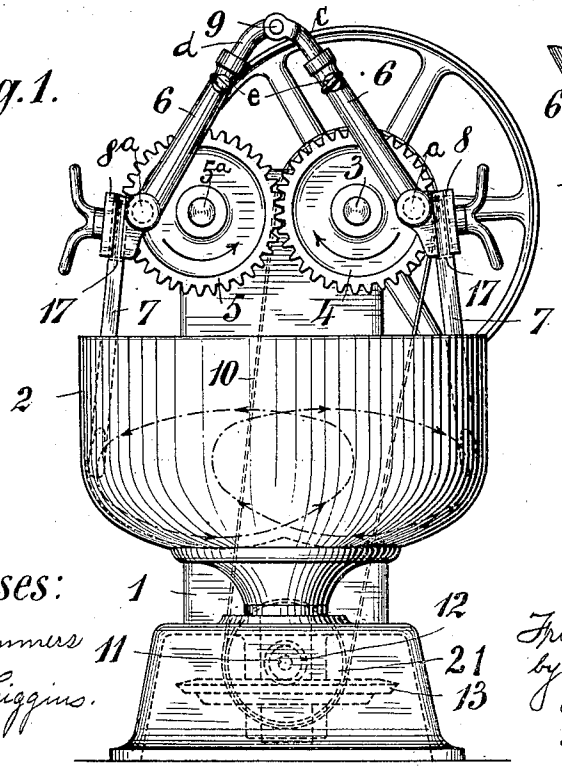


Fig. 3.

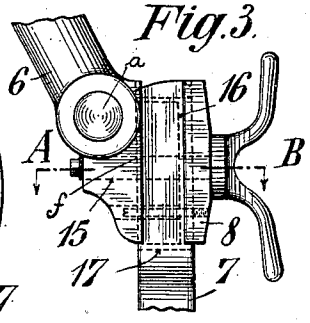
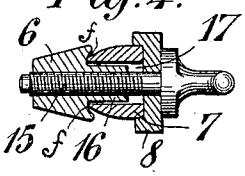


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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KNEADING AND MIXING MACHINE.

No. 835,655. Specification of Letters Patent. Patented Nov. 13, 1906.

Application filed May 25, 1906. Serial No. 318,702.

To all whom it may concern:

Be it known that I, FRIEDRICH AESCHBACH, a citizen of the Republic of Switzerland, residing at Aarau, Switzerland, have invented a new and useful Improved Kneading and Mixing Machine, of which the following is a specification.

The object of the present invention is a kneading and mixing machine provided with a pair of kneading-arms whose lower ends project into a kneading-trough and have a circular or elliptical movement in a vertical plane. The arms are articulated or connected together, and I thus avoid the necessity for any special vertical guiding parts for the arms.

Referring to the drawings, in which like parts are similarly designated, Figure 1 is a front view of the machine. Fig. 2 is a side view, partly in section. Fig. 3 is a detail drawn to a larger scale. Fig. 4 is a section on line A B, Fig. 3.

A suitable frame 1 has in its upper part a horizontal driving-shaft 3, on one end of which is mounted the usual fast and loose pulleys 18 and 19, respectively, for driving the machine from a suitable line-shaft. On this end of the shaft 3 is also mounted a belt-pulley 20, and the other end of the shaft projecting from frame 1 carries a gear-wheel 4, that meshes with a similar gear-wheel 5, mounted on stub-shaft 5^a in the frame. On the wheels 4 and 5 are crank-pins *a* and *b*, respectively, on which are mounted the kneading-arms. These kneading-arms consist each of an upper part 6, mounted near its lower end on one of the crank-pins, and of a removable lower end 7, connected thereto.

The upper ends 6 of the kneading-arms are connected by a hinge or similar articulation 9, whose members *c d* telescope into the upper hollow ends of the parts 6 and are held in the desired relation to said parts 6 by thumb-screws or other suitable securing means *e*. This arrangement permits the lengthening or shortening of the distance between the hinge-point at 9 and the crank-pins to alter the path described by the lower parts 7 of the mixing-arms between a circle and an ellipse to the greatest ellipticity within the range of the machine, and, if desired, the distance between the hinge-point and one crank may be different from that between the hinge-point and the other crank, in which case the paths of the ends of parts 7 will differ in ellipticity. Such adjustment permits the use of troughs of different diameter or size.

The lower ends of the parts 6 near the crank-pins are each formed with a projection 16, narrower than the main portion of this part, that fits into a slot 17 in the upper end of the removable part 7. At the base of 16 the part 6 is slightly grooved, as shown at *f*, into which the sides of slot 17 enter in order to hold said parts 7 rigidly in position. Taking over the slotted end of 7 is a channel-shaped clamping member 8, through which and the slot 17 and end of part 6 passes a hand-screw 15, the head of which forces 8 against the upper slotted end of 7 and holds it rigidly connected to 6, as shown in Figs. 3 and 4. Belt 10 connects belt-pulleys 20 and 21, the latter being secured to a shaft 11, mounted in the lower part of frame 1. Said shaft 11 carries a bevel-pinion 12, driving a bevel-wheel 13 on the vertical shaft or spindle 14, on the upper end of which is mounted the mixing or kneading trough or pan 2. The fast belt-pulley 18 drives a shaft 3 with the belt-pulley 20 and gear-wheel 4 mounted thereon, the latter in turn driving the like gear-wheel 5, whereby both crank-pins *a* travel in circles. The kneading-arms 6 7, mounted thereon, also have a like motion at the crank-pins, but by reason of their being connected by a hinged joint at their upper ends simultaneously swing about the crank-pins as centers, so that their lower parts 7 describe vertical elliptical courses, thus effectually kneading the dough. At the same time belt-pulley 20 drives shaft 11 and the parts operated therefrom to rotate the trough or vessel 2.

I claim—

1. In a kneading-machine, the combination with a pair of cranks; of a pair of kneading-arms mounted intermediate their ends on said cranks and hinged together at their upper ends, whereby the lower ends of the arms are moved in elliptical paths.

2. In a kneading-machine, the combination with a pair of cranks; of a pair of kneading-arms mounted intermediate their ends on said cranks, means connecting the upper ends of the arms and means to alter the ellipticity of the path of the lower ends of the arms.

3. In a kneading-machine, the combination with a pair of cranks; of a pair of kneading-arms mounted intermediate their ends on

said cranks, means to hinge the upper ends of the arms together and means to alter the length of the arms between the hinge and cranks, substantially as described.

4. In a kneading-machine, the combination with a pair of cranks; of a pair of kneading-arms mounted intermediate their ends on said cranks, and a hinge connecting the upper ends of said arms, the two hinge parts being adjustably connected to the arms, substantially as described.

5. In a kneading-machine, the combination with a driving-shaft and a gear-wheel mounted thereon; of a like gear-wheel driven from the former one, a crank-pin on each gear-wheel, a kneading-arm mounted on each crank-pin, a hinge connecting the upper ends of said arms, the members of said hinge telescoping in the upper ends of the arms, means to detachably connect the lower parts 7 of said arms to the upper parts thereof, a trough or vessel into which the lower parts of the arms project and means driven from the driving-shaft to rotate said trough or vessel, substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH AESCHBACH.

Witnesses:
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