

J. & J. A. BAKER.

MIXING, SIFTING, AND CLEANING MACHINE.

No. 343,789.

Patented June 15, 1886.

Fig. 1.

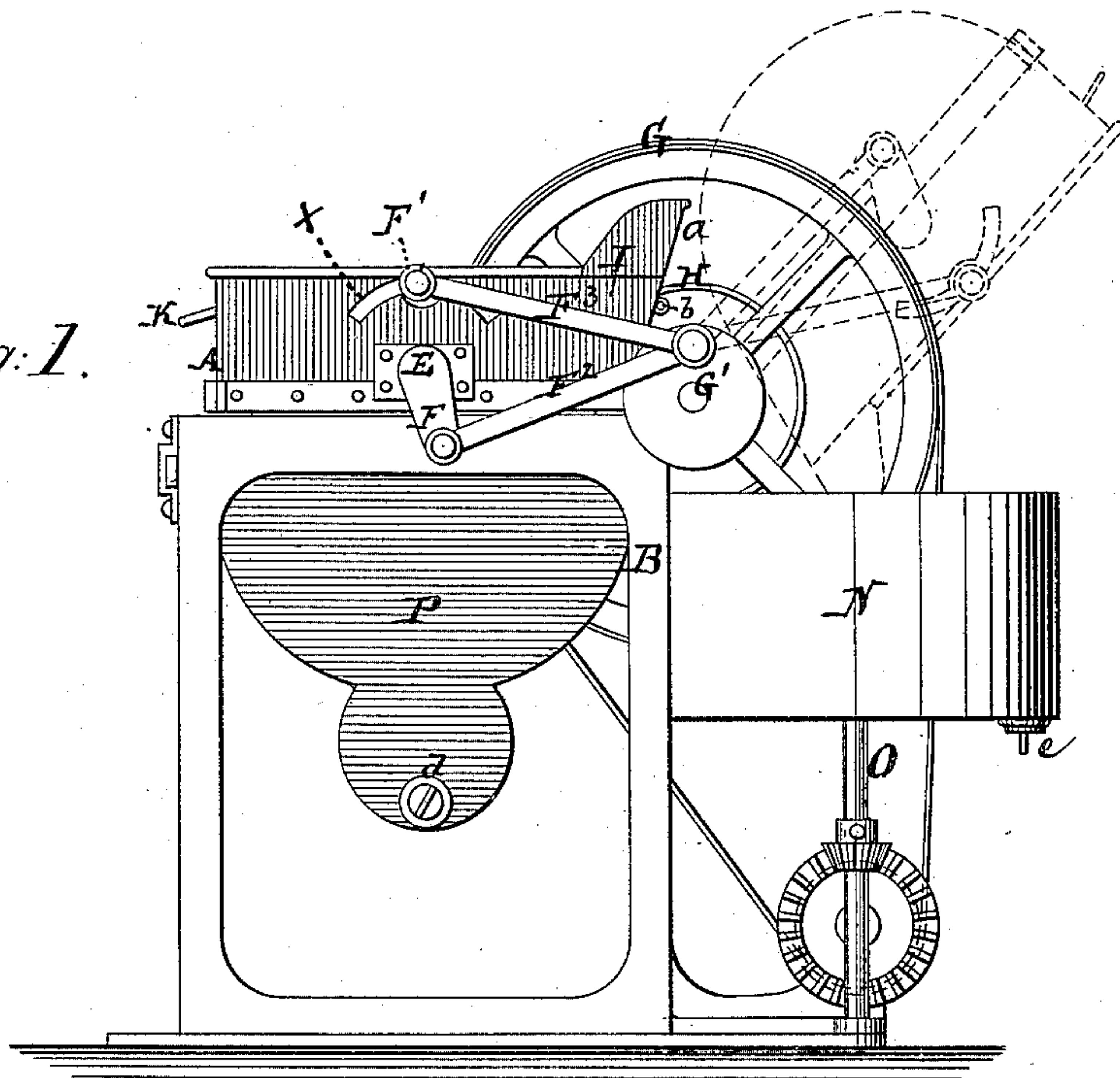
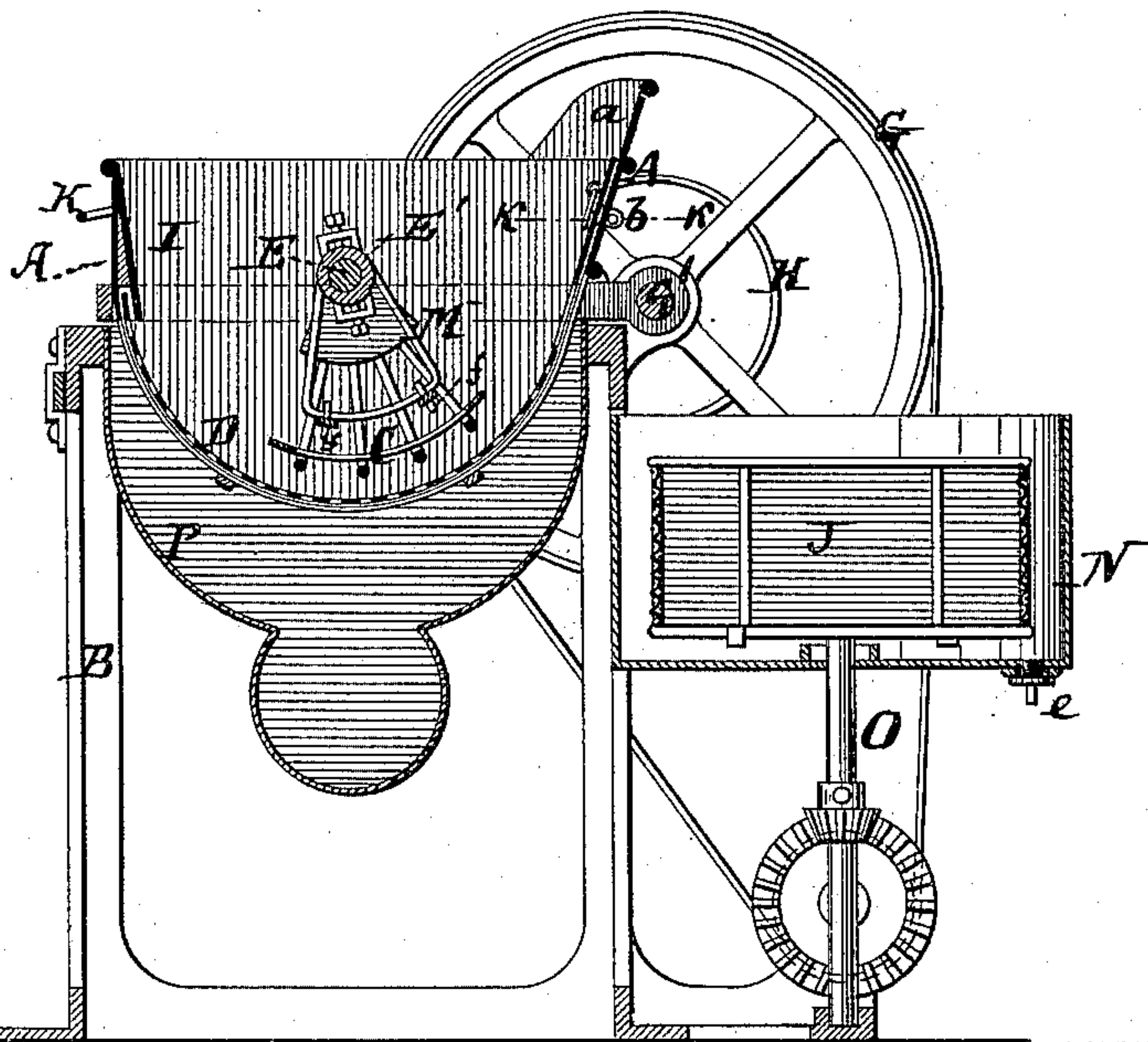


Fig. 2.



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Fig. 3.

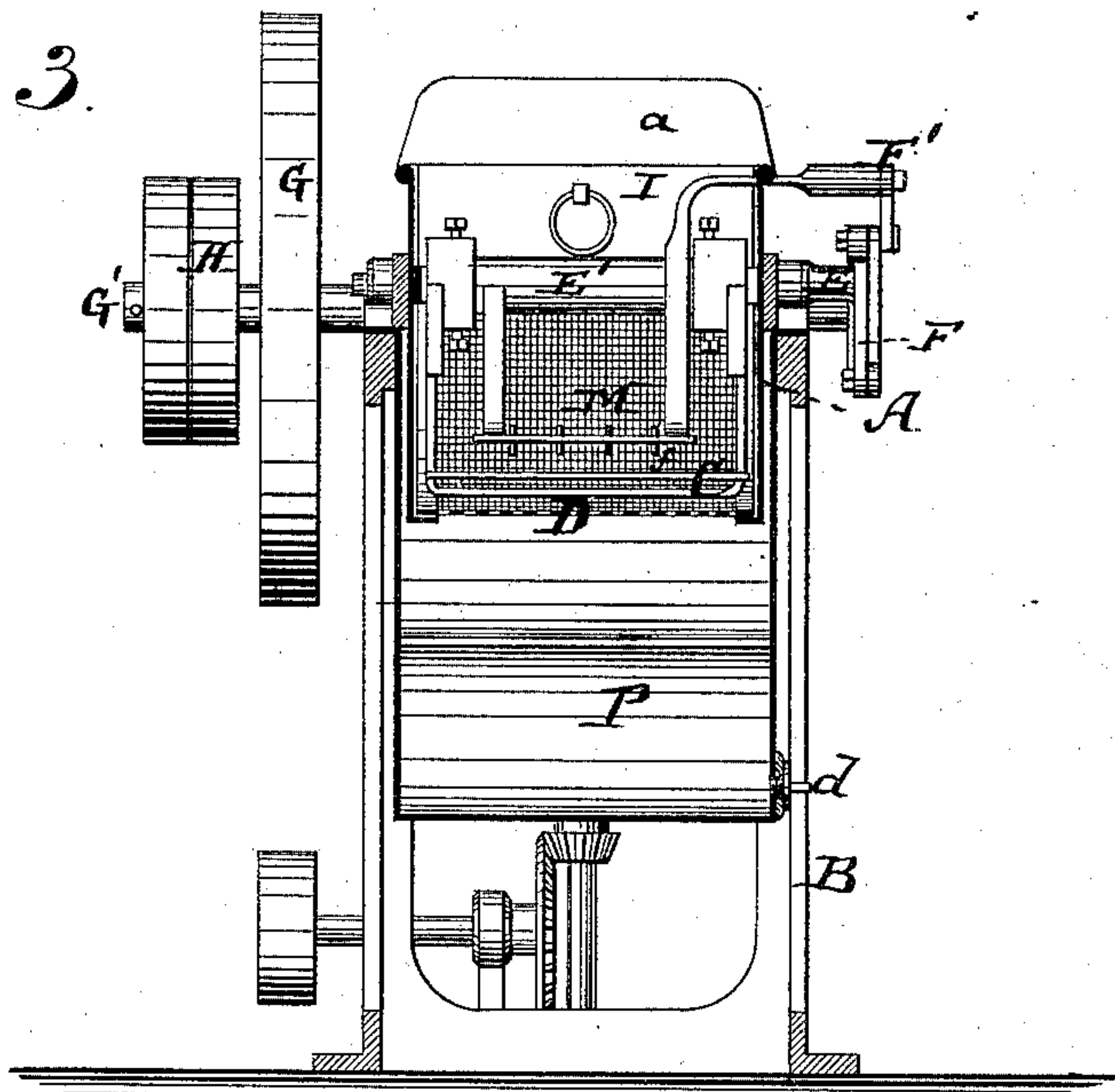


Fig. 4.

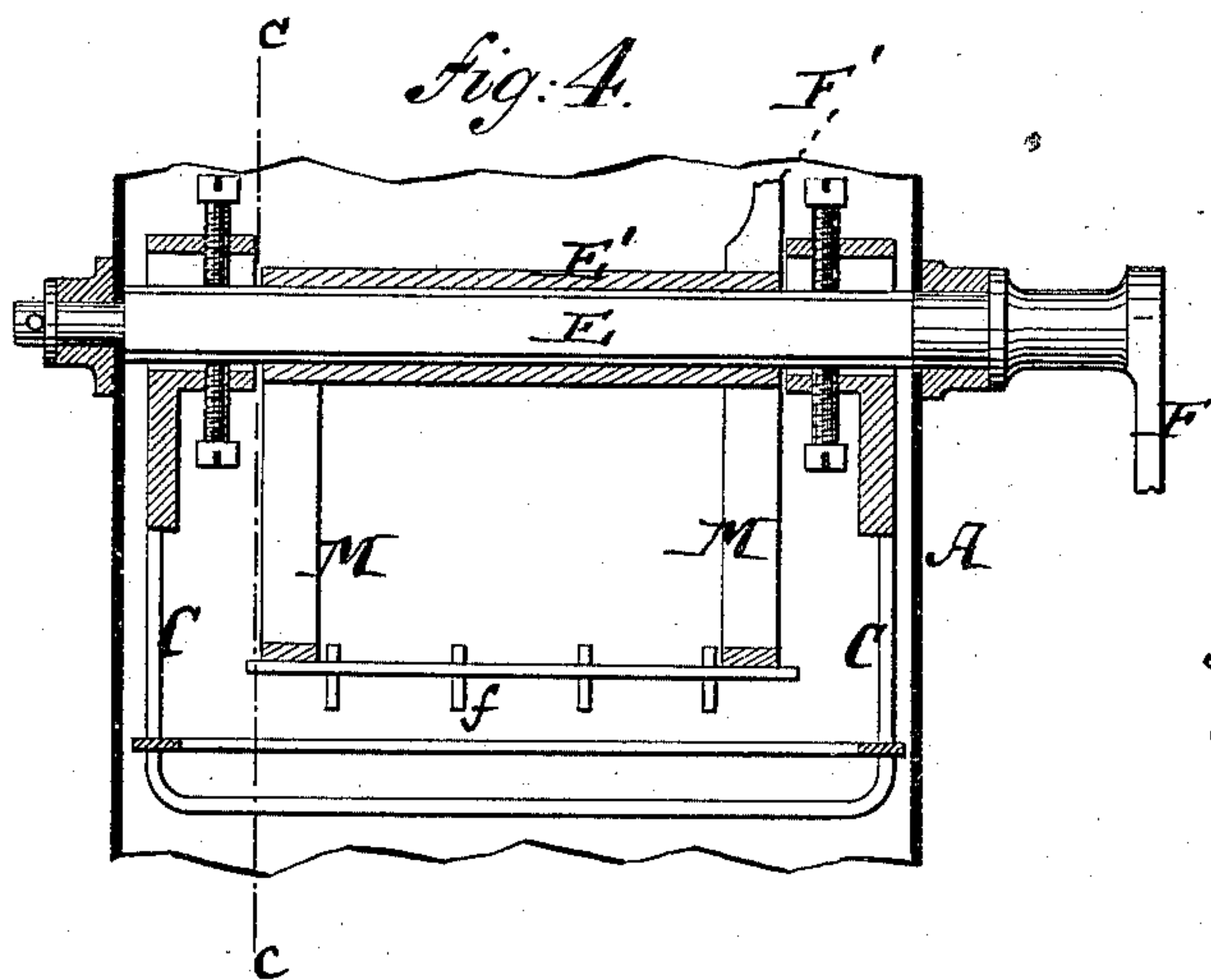


Fig. 5.

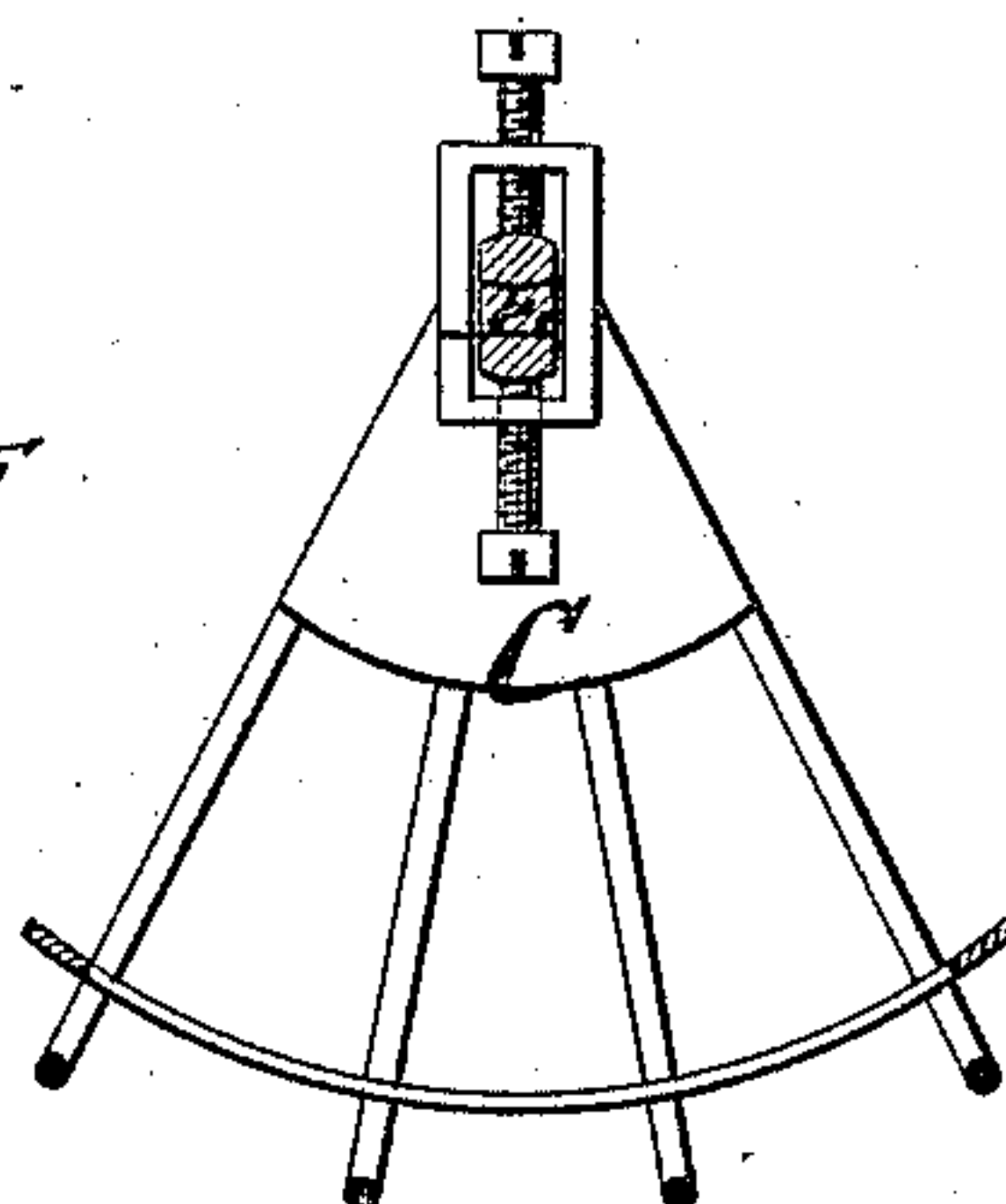
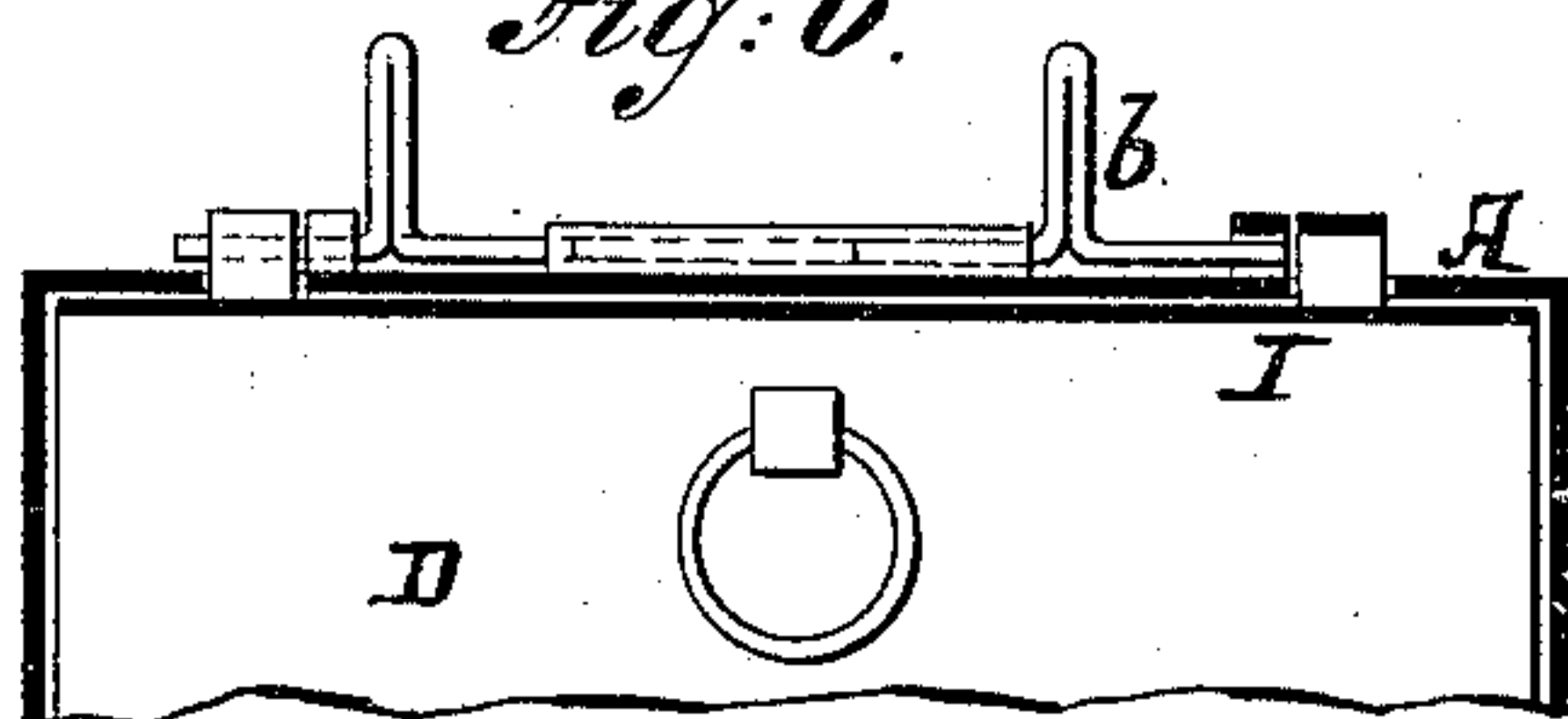


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH BAKER AND JOSEPH ALLEN BAKER, OF LONDON, ENGLAND.

MIXING, SIFTING, AND CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 343,789, dated June 15, 1886.

Application filed December 8, 1885. Serial No. 185,094. (No model.) Patented in England July 1, 1879, No. 2,648.

To all whom it may concern:

Be it known that we, JOSEPH BAKER and JOSEPH ALLEN BAKER, of 58 City Road, London, England, have invented Improvements in Mixing, Sifting, and Cleaning Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a vertical cross section of same through the center of the sieve. Fig. 4 is an enlarged central cross-section through the agitators. Fig. 5 is a section on the line *c c*, Fig. 4. Fig. 6 is a detail horizontal section on the line *k k*, Fig. 2.

The object of our present invention is the more perfect mixing, sifting, and cleaning of various substances, such as drugs, flour, sugar, colors, fruits, tea, &c.

The machine consists, mainly, in a body or trough with a rounded bottom, and of suitable size, form, and materials. The bottom is formed of a sieve of any suitable material, and removable, so that sieves of different meshes may be substituted at pleasure. Horizontally along the center of the body runs a shaft carrying two sets of agitators, the one smaller than the other, the one fixed to the shaft and the other fixed to a tube which is free to turn on the shaft. These agitators, when working, describe part of a circle only, and are so constructed that the smaller of the two pass through the larger, the projections of one being aligned with spaces between projections of the other. Their motions are in opposite directions, and each is worked by a crank-and-rod connection, with a driving-shaft. For some purposes it is necessary to work with one agitator only in the trough or body—as, for instance, when it is used for sifting only. At the top of the body or trough we place a hopper. Underneath the body is a receiver to catch the siftings; or, if preferred, the body can be arranged so as to fit over an ordinary baker's trough.

We sometimes make the receiver in form of a tank, so that by partly filling it with water the fruit or other substance to be cleaned may be washed while undergoing the agitating operation; or a continual flow of water may be carried through the tank.

The body of the machine is generally pivoted or hinged upon or around the driving-shaft, and by means of a cord and pulley or other suitable appliance can be canted over, so as to tip the impurities or parts left in the body into a suitable receptacle, (which may be attached to the frame of the machine.) This can be done without stopping the machine, so that the moving agitators make an effectual clearance. For some purposes—as, for instance, in cleaning currants—the usual process is reversed, the good part remaining in the body, and the impurities going through the mesh of the sieve. In this case the good part would be tipped into the receptacle, instead of the bad. With sugar and tea, the coarse part remains in the body, and the fine goes through the mesh.

The machine may be driven by hand or power, and may be fixed upon legs or other supports, or may be mounted on rollers or casters, when found more convenient. Covers are provided, where necessary, to prevent escape of dust, &c.

In the accompanying drawings, A is the body; B, the frame-work; C and M, the agitators; D, the round or semi-cylindrical sieve forming the bottom of the body, and E and E' the shafts which carry and work the agitators. The shaft E' is tubular, and surrounds the shaft E. It carries the agitator M, while the shaft E carries the agitator C.

F and F' are the cranks on shafts E and E', respectively, and F² and F³ the rods which give motion to the agitators by connecting said cranks with a crank or fly wheel on the driving-shaft G'.

G is the crank or fly wheel, and G' the shaft which carries it.

H is the pulley on the shaft G', for driving it.

I is the hopper, pivoted, together with the body A, to the driving-shaft G'. This hopper may be made in one piece with the body A.

K is the handle for tilting the body, or it may be done by a cord or chain carried over the necessary pulley or pulleys. The spout *a* of the body A will, when the same is tilted, as shown by dotted lines, discharge the contents of the body into a revolving screen, J, which is hung in a receiving-vessel, N. The shaft O, which carries the screen J, can be revolved by a suitable gear or belt connection with the driving-shaft G'. The sieve D is contained in

a vessel, P, above the bottom of which it is suspended by a bolt or catch, *b*. Fig. 6 shows this to be a sliding bolt on the outside of body A, and passed through eyes that extend outward from the sieve D, through slots in the body A. The lower part of the vessel F has an outlet, *d*, closed by a valve. A similar outlet, *e*, is in the lower part of the vessel N. The crank F' projects upward from the tubular shaft E', and then outward, as in Fig. 3, while the crank F projects downward from the shaft E, as also shown in Fig. 3. By this means the shafts are oscillated in opposite directions. The outer horizontal part of the crank F' extends through a curved slot, *x*, Fig. 1, in the wall of the body A, the slot serving to permit the horizontal part of said crank to move under the influence of the rod F³. As the agitator C projects from the shaft E, it is necessary that the crank F' on the tubular shaft E' be made L-shaped, so as to carry its outer horizontal part either over the top of the body A or through the slot *x* in the wall of same.

The articles to be sifted or dressed are placed in the hopper I, falling thence upon the sieve D, through which the good part falls into the vessel P, the bad part remaining in the body A, or vice versa, to be subsequently tilted into the screen J, wherein they are further agitated. The agitators may be kept working while the

body is tilted, thus completely clearing it out. The agitators work in opposite directions, and may carry teeth *f*, to assist in the agitation.

We claim—

1. The combination of the body A, having round bottom D, with the agitators C and M, working simultaneously, and in opposite directions, one within the other, and mechanism for oscillating the same, substantially as and for the purpose set forth.

2. The combination of the body A with agitators C M, shaft E and shaft or tube E', cranks F F', rods F² F³, and driving-shaft G', substantially as and for the purposes set forth and shown.

3. The combination of the frame B, driving-shaft G', sieve D, shaft E, shaft or tube E', and mechanism, as described, for moving said shafts, with the agitators C M and pivoted body A, as set forth.

In witness whereof we, the said JOSEPH BAKER and JOSEPH ALLEN BAKER, have hereunto set our hands this 23d day of October, A. D. 1885.

JOSEPH BAKER.

JOSEPH ALLEN BAKER.

Witnesses:

ARTHUR W. McLELLAN,
SYDNEY CLARKE HOOK.