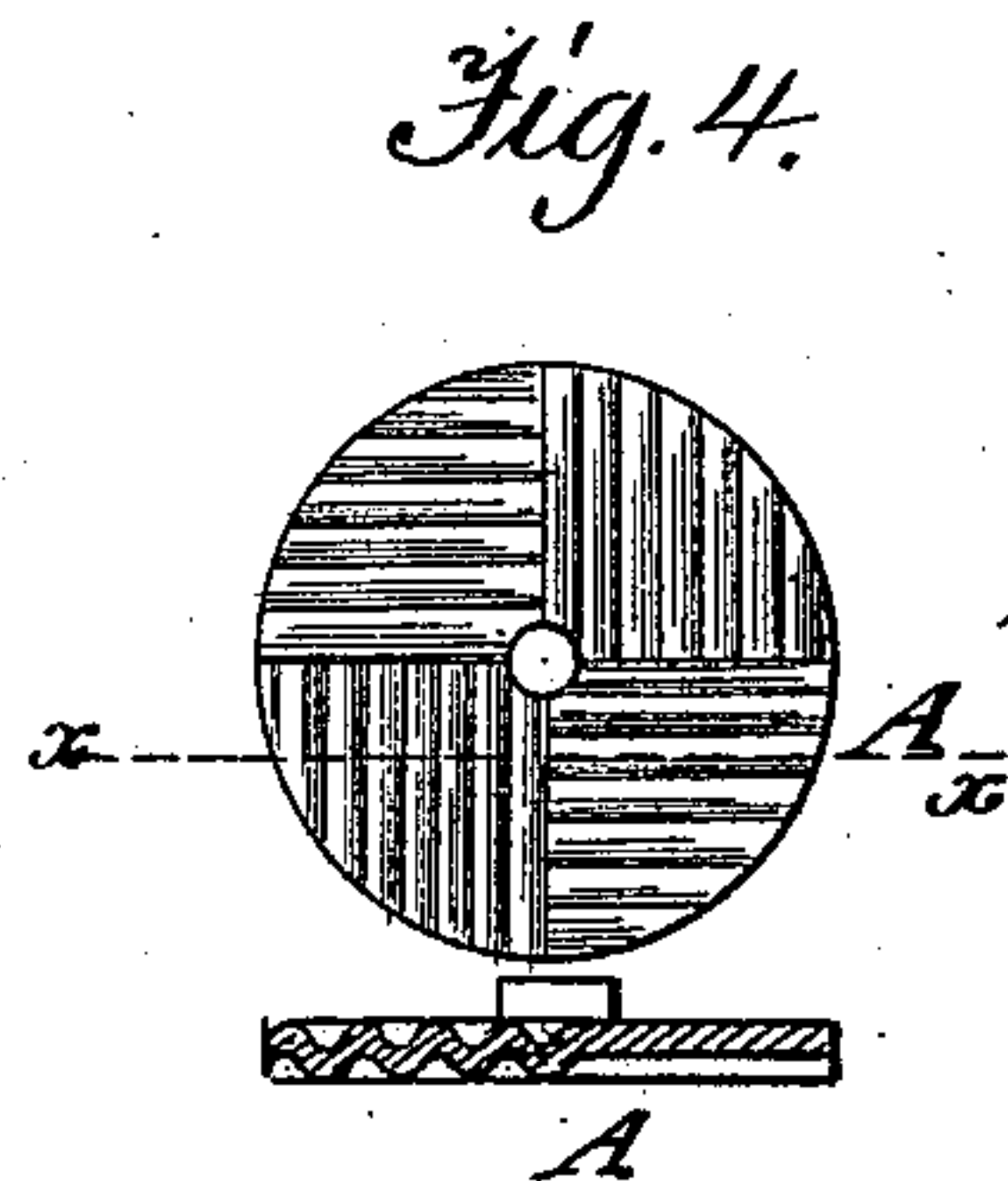
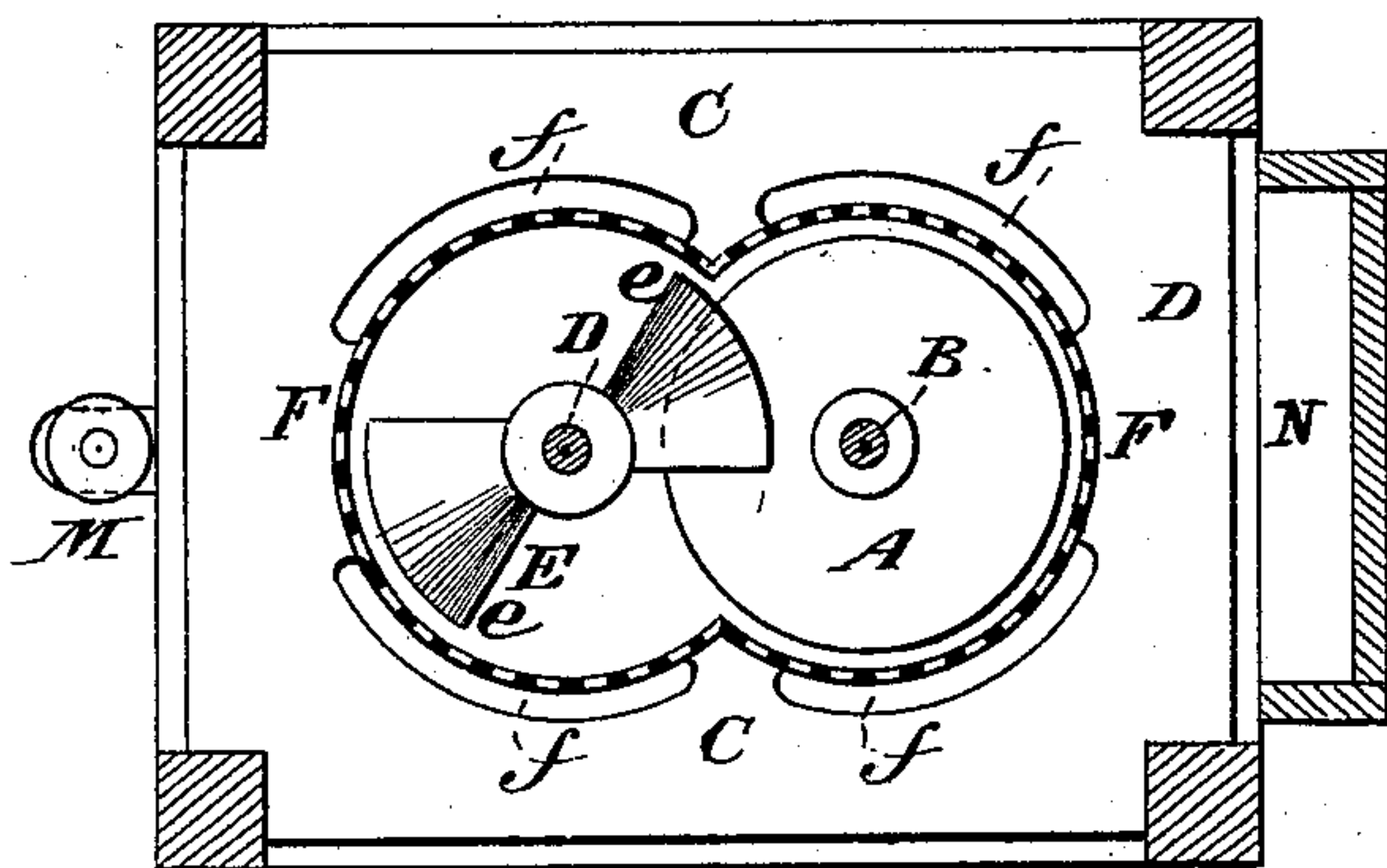
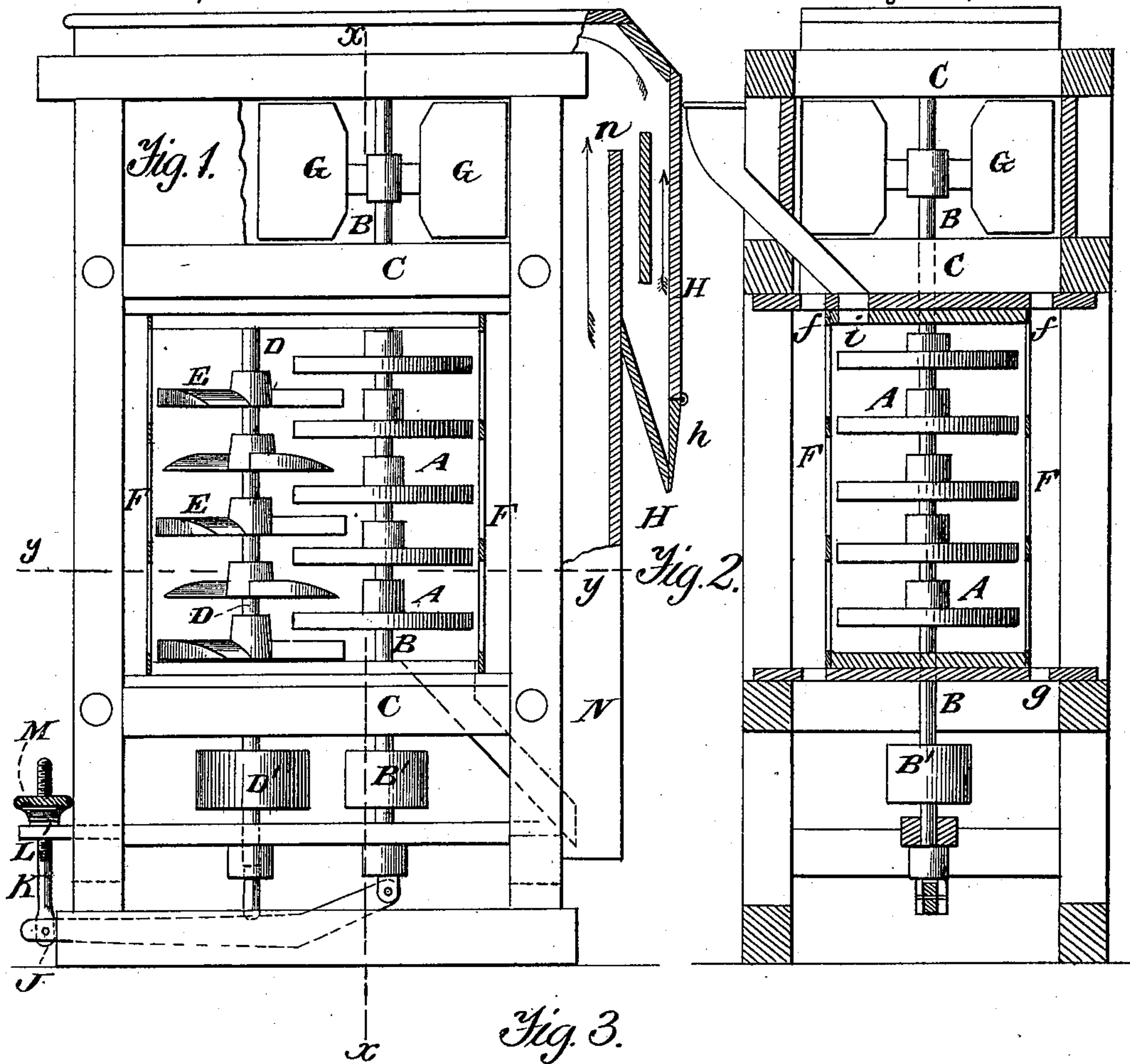


(No Model.)

J. YATES.
GRAIN SCOURER.

No. 363,938.

Patented May 31, 1887.



Witnesses.
A. Ruppert.
W. V. Burris

Inventor.
Joseph Yates,
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att'y.

UNITED STATES PATENT OFFICE.

JOSEPH YATES, OF MINNEAPOLIS, MINNESOTA.

GRAIN-SCOURER.

SPECIFICATION forming part of Letters Patent No. 363,938, dated May 31, 1887.

Application filed June 25, 1886. Serial No. 206,197. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH YATES, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Grain Scourers; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The invention will first be described in connection with the drawings, and then pointed out in the claim.

Figure 1 of the drawings is a rear elevation broken away to show the suction-fan, air-flue, and pocket; Fig. 2, a vertical part section on line *x x* of Fig. 1; Fig. 3, a horizontal cross-section on line *y y* of Fig. 1, and Fig. 4 a detail plan view and cross-section of a scouring-disk.

In the drawings, A represents serrated or corrugated circular disks arranged at intervals on a vertical shaft, B. I preferably roughen both sides of the disks, so as to increase their friction, and thus facilitate the scouring of the grain-surfaces.

E E are radial blades beveled gradually from the rear to the front on their upper sides and arranged on a vertical shaft, D, to intervene or extend between and alternate with the disks A.

The shafts B D are journaled in cross pieces C of the frame.

F is a jacket reticulated and arranged about the scouring devices within the usual shell or incasement, and preferably made of steel.

G is a superposed suction-fan, which draws an upward current of air through the openings *f g* along the outside of the perforated jacket and discharges it at one side of the incasement.

The shaft B has a pulley, B', of less diameter than the pulley D' on shaft D, so that the blades may revolve at less speed than the disks.

J is an obtuse-angled lever resting with the vertex of its angle upon a base or bed of the scourer or upon a floor and with its arms in a

vertical plane, so as to turn upon said vertex and raise one arm while the other is depressed. Upon the end of the short arm I pivot the lower end of shaft B, and at about the same distance from said vertex or fulcrum on the long arm I pivot the lower end of shaft D, so that one is depressed as the other is raised, thus bringing the blades and disks closer together or carrying them farther apart. This construction enables the operator to bring the disks and blades closer together or farther apart.

K is a screw attached to the outer end of lever J and passing up through the beam L, which forms a guide and support for the shafts B D. On the threaded upper end of screw K is an adjusting screw-nut, M, by which the lever J may be raised or lowered at the outer end in order to regulate the distance apart of the blades and disks.

N is an air-flue, into which the discharge-spout empties its grain, which is open at the bottom and connects with the upper side of the fan, which thereby produces an updraft through the discharging grain after it has been scoured. At *n* the flue deflects, so as to pass over the top of pocket H, so that the air will strike the opposite wall or casing, and the impurities of any magnitude will be precipitated into the said pocket.

h is a flap-door of the pocket, which is hinged to close by gravity and the suction of the fan. Through this whatever may accumulate in the pocket may be removed.

In practice the scourer is kept full, or nearly so, so that the grain will be laterally supported by the perforated jacket and surround the disks and blades. The blades turn less rapidly than the disks and force the grain up and down against their roughened faces. The grains, being thus caused to rub against one another and against the roughened disks, are very rapidly and very thoroughly scoured before they are discharged. The differential motion of the blades and disks contributes in no small degree to this result. The feed is regulated by a slide or valve in the spout or the usual hopper, while the discharge-spout is preferably valved so that the operator may control the rapidity of the flow of grain through the scourer, and thus determine the degree of

scouring to which each lot of grain shall be subjected.

What I claim as new, and desire to protect by Letters Patent, is—

- 5 In a grain-scourer, the combination of the parallel shafts B D, the radial blades E, beveled from their ends to sharp edges in front, the disks A, interlapping with said blades, and

mechanism for giving said shafts a differential motion, as described.

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

JOSEPH YATES.

Witnesses:

HUGO KNOFF,
WM. DERWENT.