

(No Model.)

S. COATS.
THRASHING MACHINE.

No. 283,206

Patented Aug. 14, 1883.

Fig. 1.

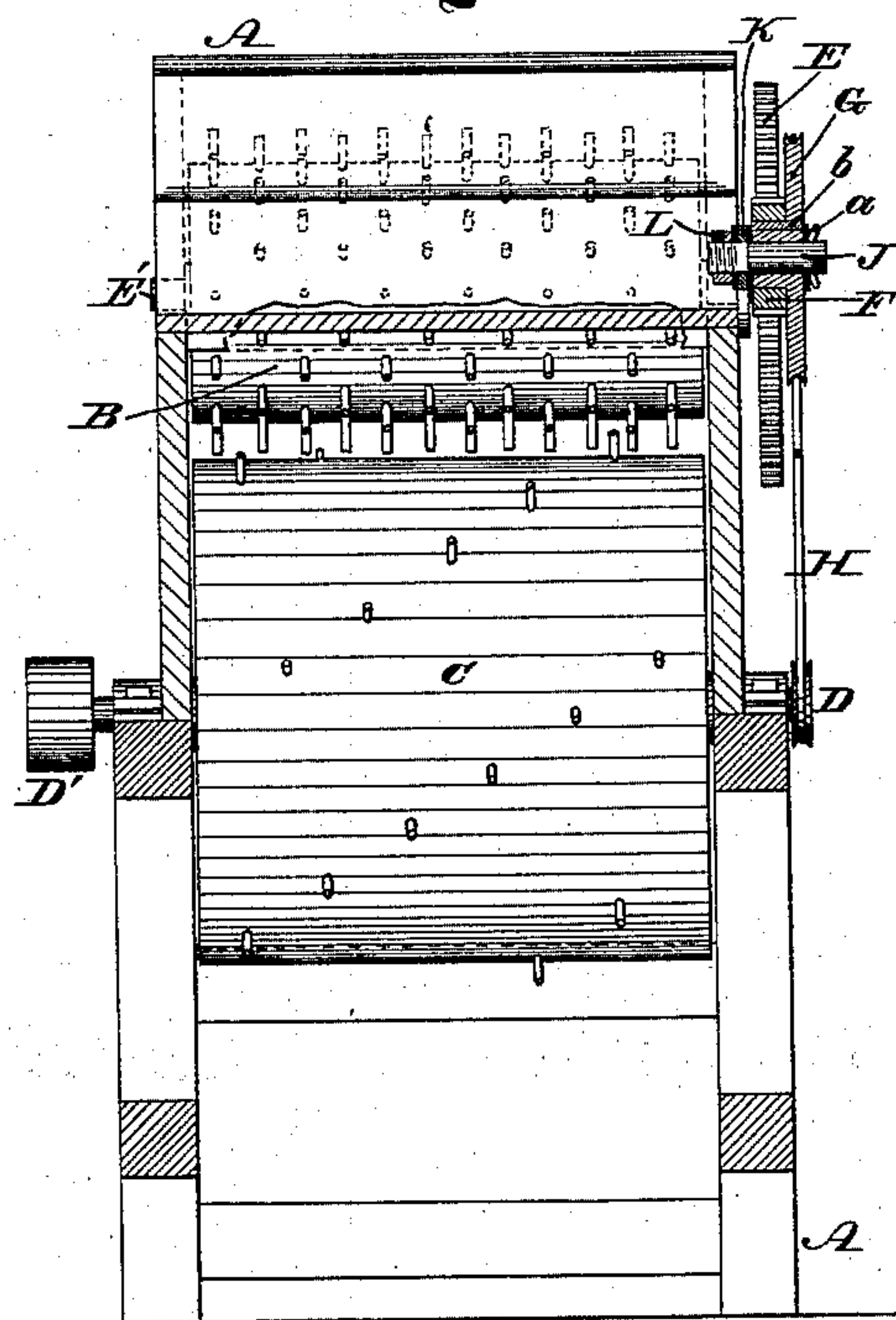


Fig. 3.

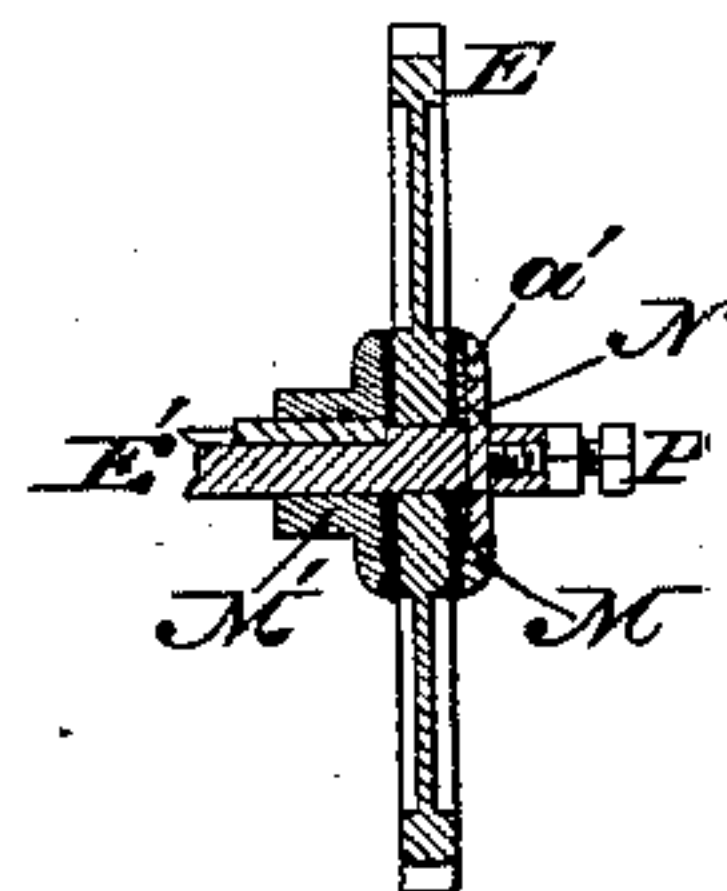
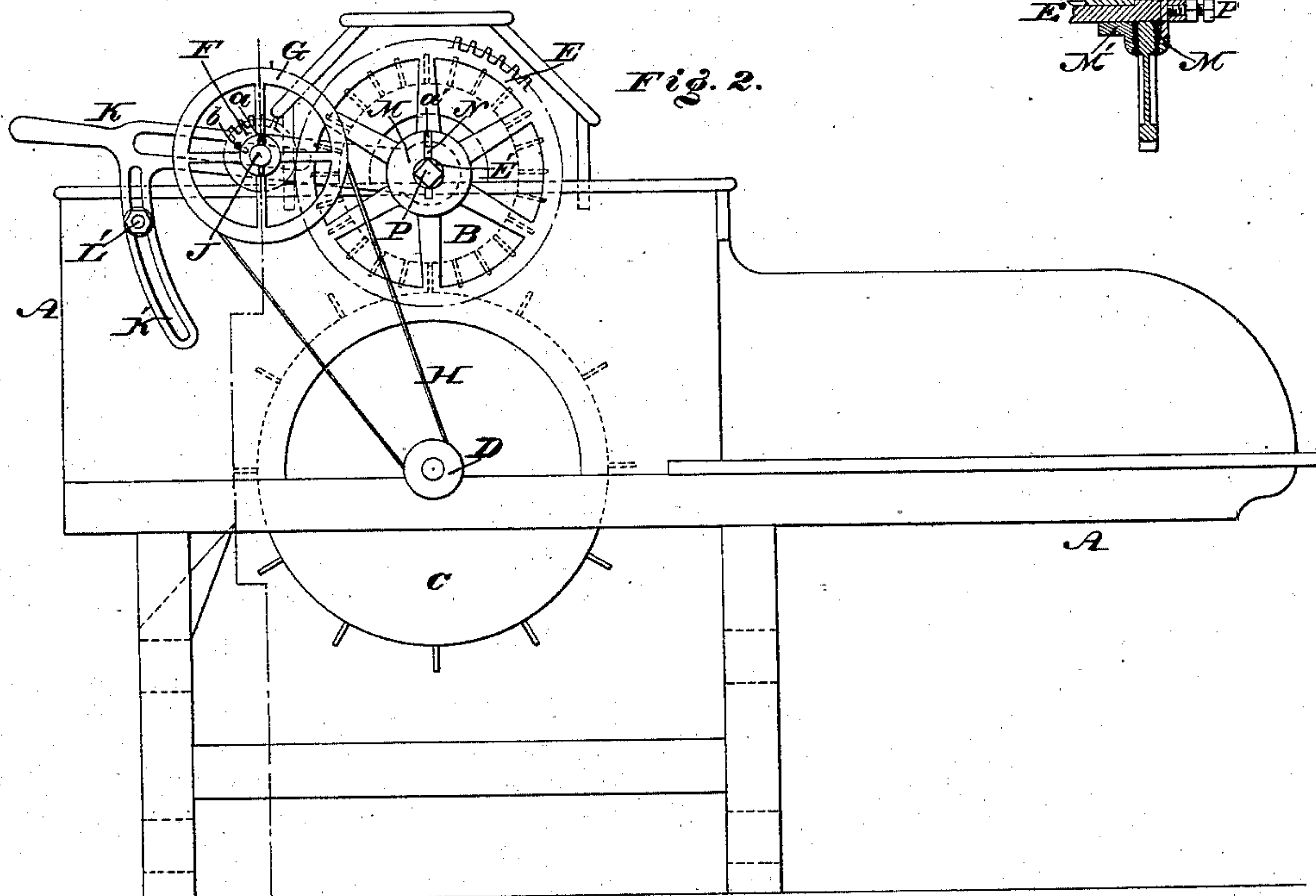


Fig. 2.



WITNESSES:

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SAMUEL COATS, OF UPPER MERION, PENNSYLVANIA.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 233,206, dated August 14, 1883.

Application filed May 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL COATS, a citizen of the United States, residing in Upper Merion, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Improvement in Thrashing-Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is an end view, partly sectional, of a thrashing-machine embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a view of a detached portion.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to thrashing-machines adapted to thrash different kinds of grain; and it consists in the peculiar construction and combination of parts, as hereinafter more particularly set forth and claimed.

Referring to the drawings, A represents the frame or casing of the machine, and B C two rollers or cylinders mounted thereon, one above the other, the upper cylinder being designated the "concave," and rotating at a less rate of speed than the lower cylinder, each cylinder being properly spiked or studded. To the shaft of the lower cylinder is secured a band wheel or pulley, D, and power-wheel D', and to the shaft of the upper cylinder is secured a spur-wheel, E, which meshes with a pinion, F, to which is attached a band-wheel, G, the belt or band H whereof also passes around the pulley D. The wheel G is formed with a hub on which the pinion F is removably fitted, and said wheel G is removably mounted on a shaft, J, which is passed through a pivoted arm, K, and secured thereto by a suitable nut, L, or other means. The arm K is slotted in the direction of its length, and mounted on the shaft of the upper cylinder, B, so that its motions are described from said shaft as a center. A slotted segment or slide, K', is secured to or formed with said arm K, and employed, in connection with a screw, L', for holding the arm in adjusted position. In the present case I retain the band-wheel G in position by means of a pin, a, which is passed through an opening in the shaft, at the outer end thereof, and employ a feather, key, or spline, b, for securing the removable pinion F.

It will be seen that when power is applied to

the machine the lower cylinder is rotated, and, by means of the pulley D, band or belt H, band-wheel G, pinion F, and spur-wheel E, the upper cylinder is rotated. The grain is fed to the cylinder, and the operation of thrashing is accomplished in a superior manner. The lower cylinder first receives power, and is rotated at a greater rate of speed than the upper cylinder, and thus the grain is thoroughly subjected to the action of the two cylinders.

For certain kinds of grain it is desirable to change the speed of the upper cylinder. For this purpose the pinion F is removed and a similar wheel of different diameter substituted therefor and fitted on the hub of the wheel G. The shaft J is then adjusted so as to set the substituted pinion relatively to the wheel E, and said shaft is then tightened in position on the arm K. Owing to the shifting of the shaft J during the adjustment of the pinion F, and the consequent shifting of the band-wheel G, which is connected with said shaft, the band or belt H requires to be slackened or tightened. For this purpose the screw L' is loosened and the arm K raised or lowered the required extent, after which said screw is tightened and the machine may then be operated, it being seen that the several parts have preserved their relative operative positions, although the speed of the upper roller is changed.

For grain that is easy to thrash a large pinion may be used, thus giving the machine more power by the relief.

For thrashing rye I may employ, in lieu of the pulley D, a wheel similar to the band-wheel G, and the straw will be left straight and unbroken. Furthermore, the band-wheel G may be a spur or friction wheel meshing with a similar wheel employed in lieu of the pulley D.

In order to prevent injurious action to the concave by the introduction of foreign matter thereto, whereby the concave becomes wedged or held, I adapt the wheel E to slip, or provide a friction-joint therefor, for which purpose said wheel is fitted loosely on the shaft E' of the concave or cylinder B, and held thereto by means of heads or washers M M', applied to the shaft on opposite sides of the wheel, the head M' being keyed or otherwise secured to said shaft and the head M loosely fitted to the shaft, having on its outside radial slots a',

which receive a key, N, the latter being passed through an opening in the shaft and held in position against the head by means of a screw, P, which in the present case engages with a threaded opening in the end of the shaft and tightens against said key. Pieces or washers of leather or other suitable material are secured to the inner faces of the heads M M', or loosely interposed between the heads and wheel and held tightly against the latter, the effect of which is to connect the wheel E and shaft E', so that the power may be imparted to the concave or cylinder B from said wheel. When, however, the concave is obstructed, the wheel is permitted to slip, whereby the concave is not injured, and its teeth are prevented from being broken or drawn out. When the concave is relieved of the obstruction, the wheel E immediately, owing to the friction-joint, causes the rotation of the shaft, and consequently of the concave.

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

1. In a thrashing-machine, two reversely-rotating cylinders, the upper cylinder being arranged to rotate more slowly than the lower one, in combination with a gear-wheel on the shaft of one of said cylinders, a pinion meshing with said gear-wheel, a movable support for the shaft of said pinion, and a belt by which a band-wheel on the latter shaft is geared with a pulley on the shaft of the lower cylinder, substantially as set forth.

2. An upper rotating cylinder and lower reversely-rotating cylinder, in combination with a spur-wheel turning with the upper cylinder, a pinion and belt-wheel removably fitted together and turning on an independent shaft, and

gearing whereby said belt wheel or pulley is operated, substantially as set forth.

3. An upper rotating cylinder, in combination with a spur-wheel, a pinion meshing with said wheel, an operating-wheel provided with a hub to which said pinion is removably fitted, a lower rotating cylinder, and gearing whereby said operating-wheel is rotated, substantially as set forth.

4. In a thrashing-machine, a rotating cylinder and gearing whereby the same is driven, in combination with wheel E, meshing with said gearing, the heads or washers M M', which bear against said wheel, and the key N and screw P, which hold said heads against said wheel, but allow the said wheel to turn when resistance becomes excessive, substantially as set forth.

5. In a thrashing-machine, the movable slotted arm K and means for holding it at different angles, in combination with a train of gearing and a pinion carried by said arm and movable along the slot thereof in order to facilitate the substitution of a wheel of one diameter for that of another.

6. The longitudinally-slotted movable arm K, in combination with an upper thrashing-cylinder, detachable gear-wheel carried by said arm, a slotted slide, K', secured to said arm, a screw, L, for clamping said slide to hold said arm, a driving-belt passing over a pulley forming part of said gearing, and means whereby it is tightened or loosened thereon, substantially as set forth.

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Witnesses:

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