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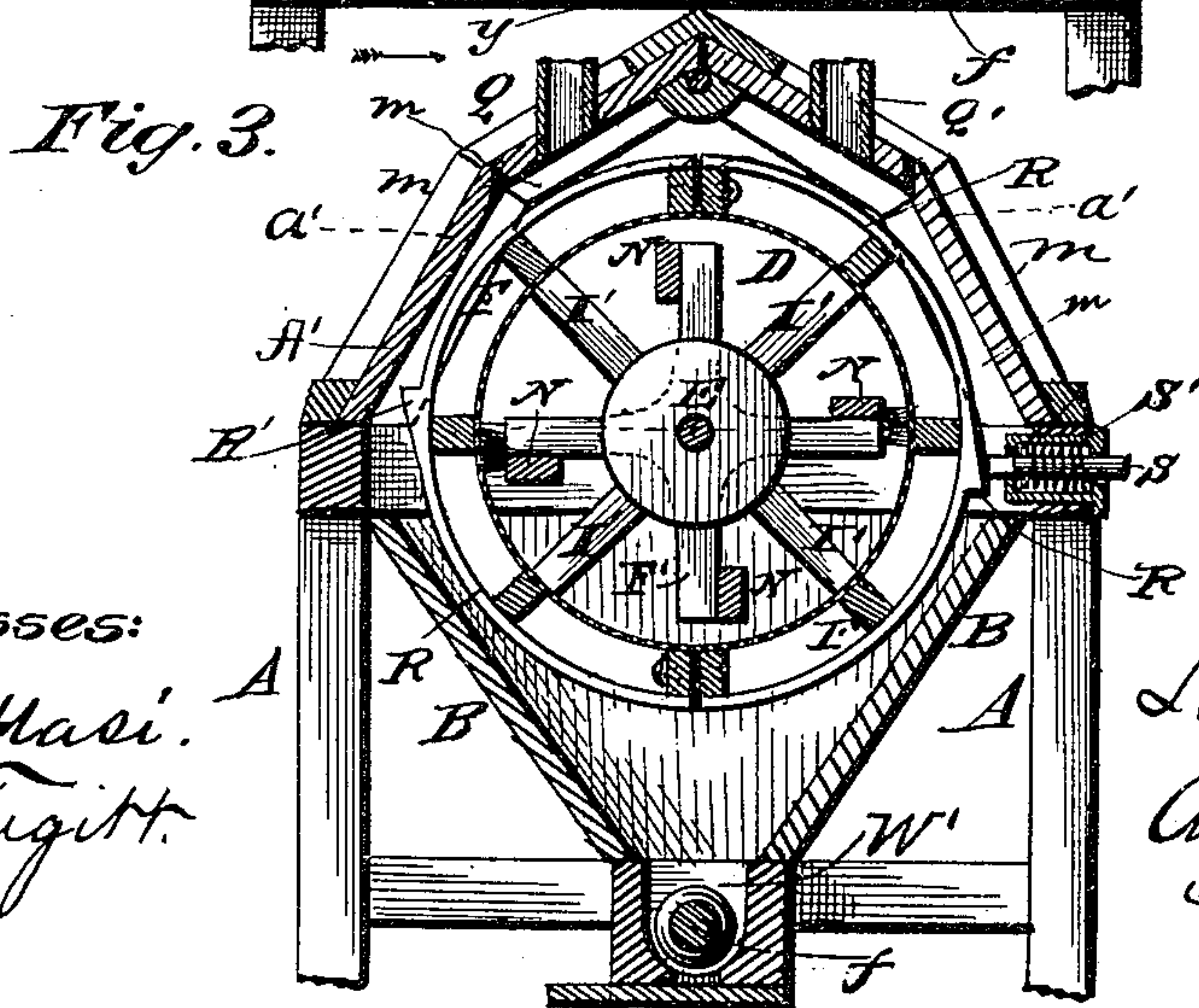
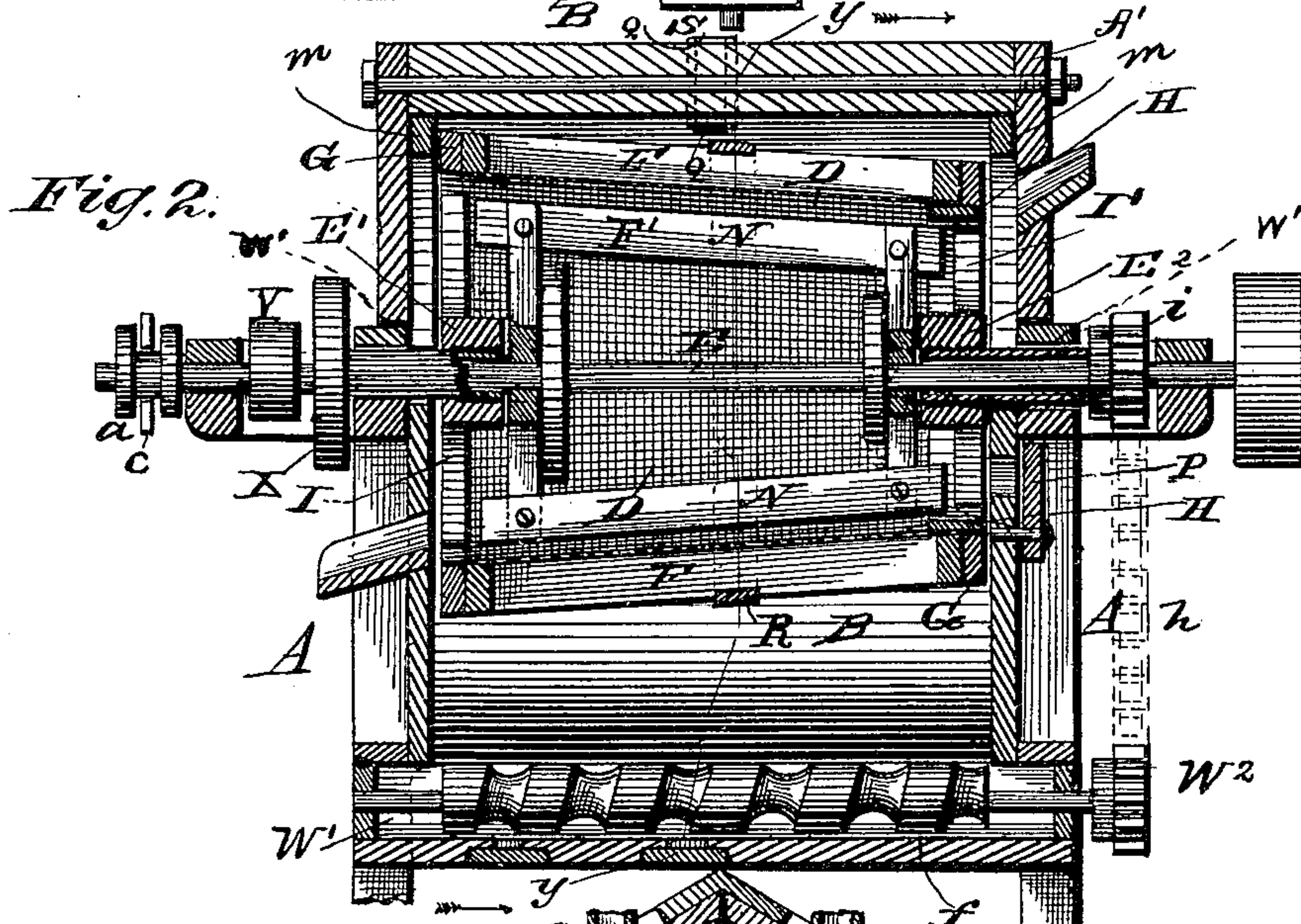
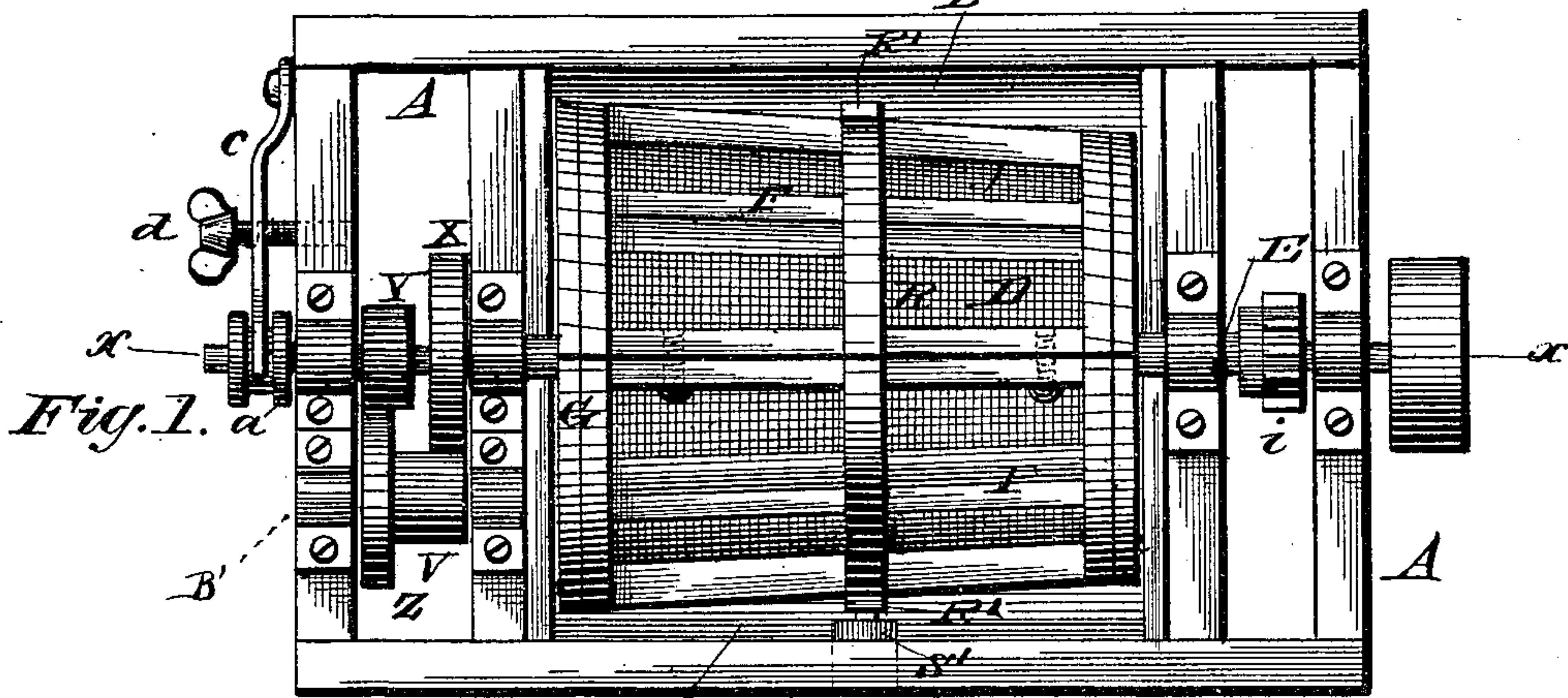
3 Sheets—Sheet 1.

L. S. HOGEBROOM.

BRAN DUSTER.

No. 364,927.

Patented June 14, 1887.



Witnesses:  
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Benj. Fugitt.

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by  
Anderson & Smith  
Attorneys.



(No Model.)

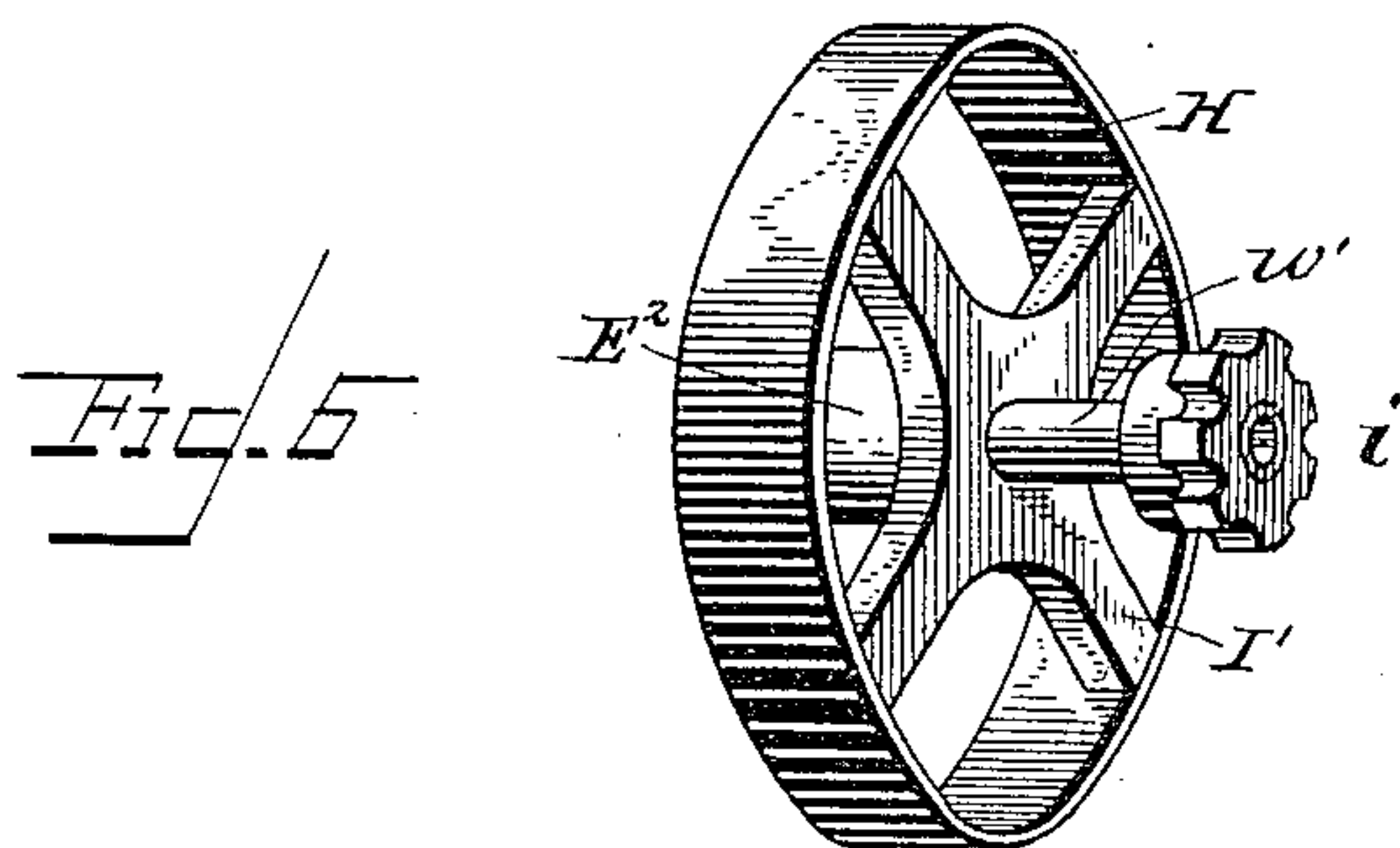
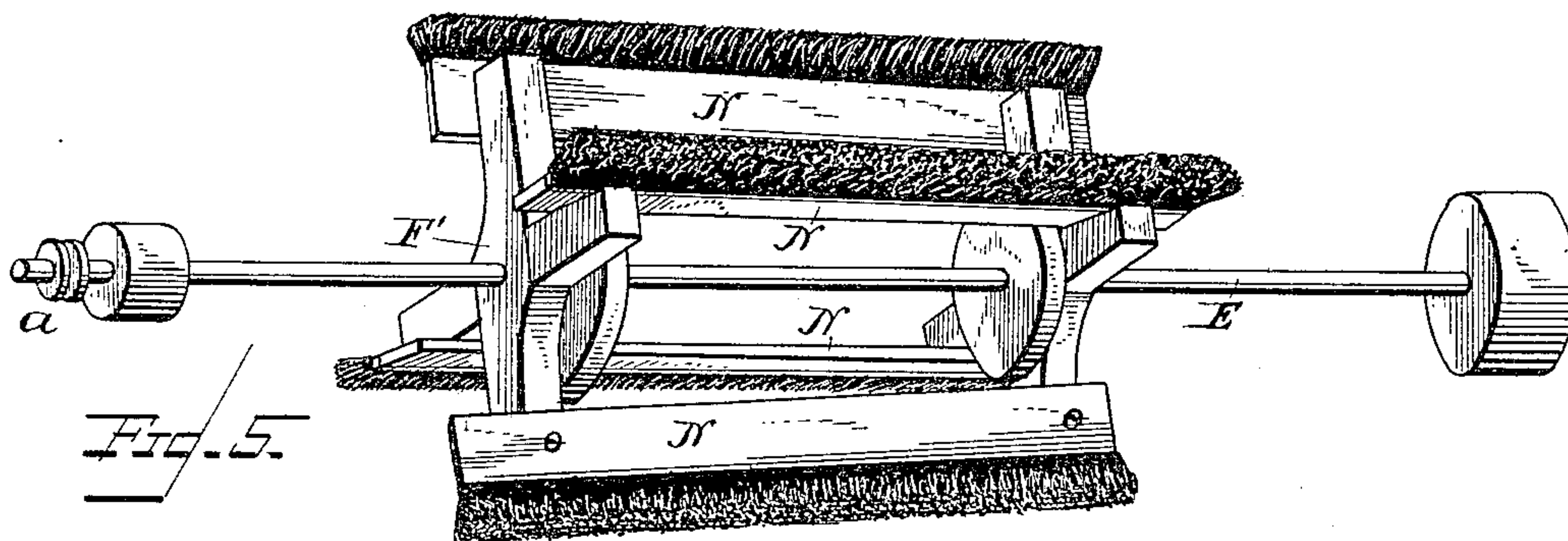
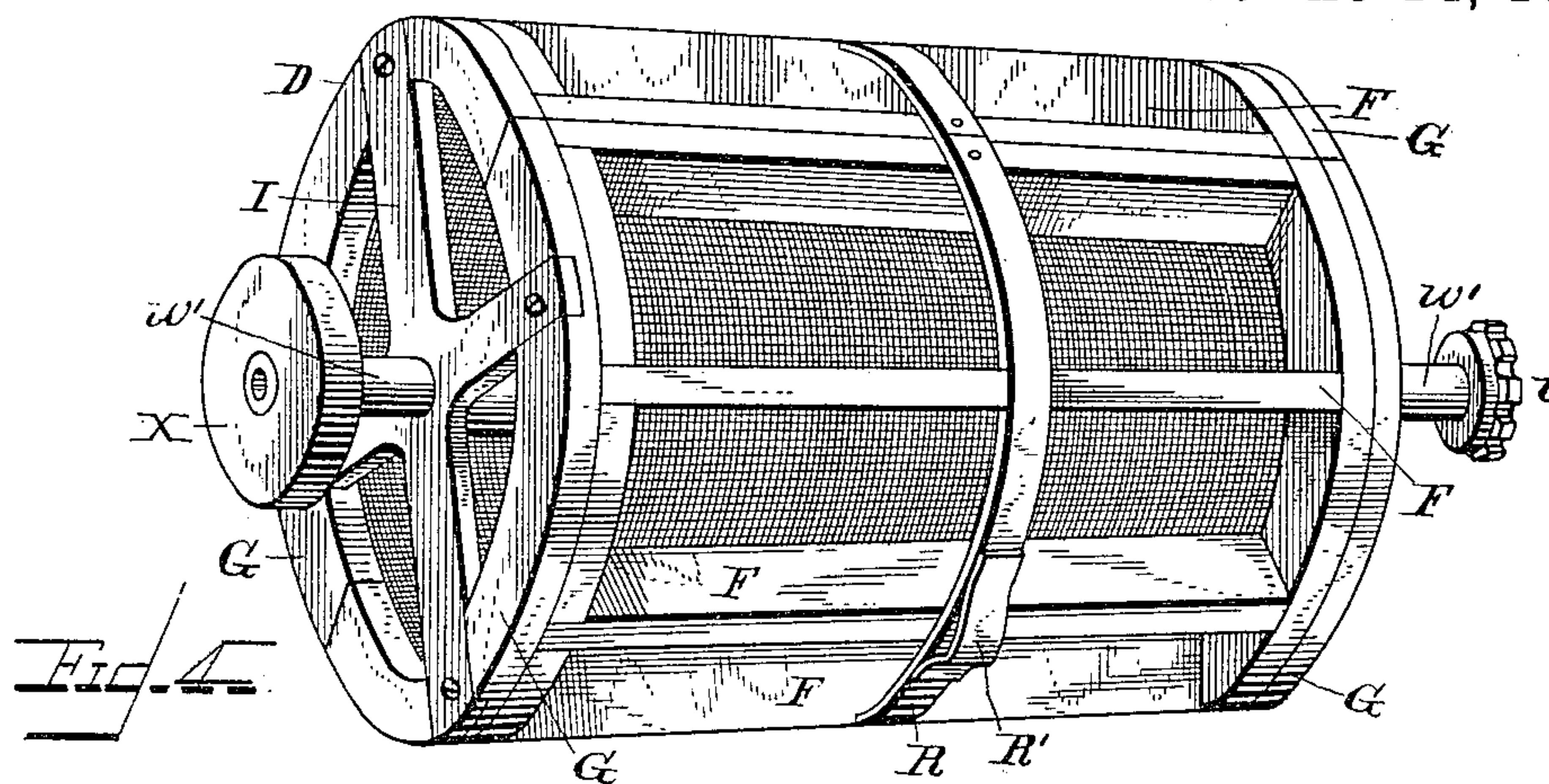
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WITNESSES

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P. Masai

INVENTOR

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ATTORNEYS

(No Model.)

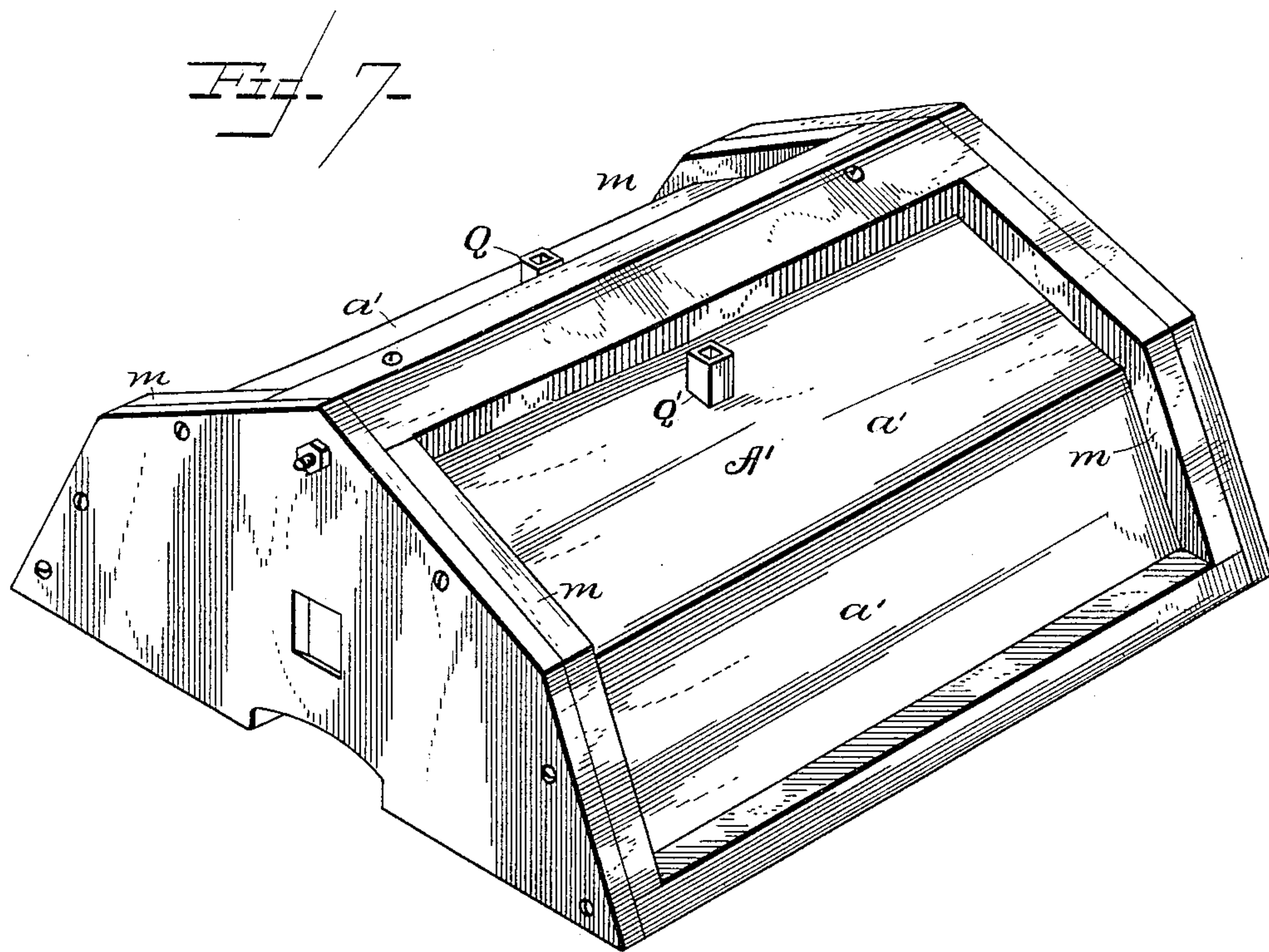
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WITNESSES

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INVENTOR

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ATTORNEYS



# UNITED STATES PATENT OFFICE.

LEVI S. HOGBOOM, OF THREE RIVERS, MICHIGAN.

## BRAN-DUSTER.

SPECIFICATION forming part of Letters Patent No. 364,927, dated June 14, 1887.

Application filed April 3, 1886. Serial No. 197,694. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI S. HOGBOOM, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Bran-Dusters; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

This invention has relation to improvements in bran-dusters; and it consists in the construction, novel arrangement, and adaptation of devices, as will be hereinafter more fully described, and pointed out in the claim appended.

In the annexed drawings, Figure 1 is a plan view of a machine embodying my improvement with the top or cover removed to show the internal parts. Fig. 2 is a vertical central sectional view of the same with the cover in position. Fig. 3 is a cross-sectional view taken on the plane indicated by the dotted lines *yy* on Fig. 2. Fig. 4 is a perspective view of the reel with the beater removed. Fig. 5 is a view of the beater. Fig. 6 is a view of the metallic band removed from the smaller end of the reel, showing the sleeve carrying a sprocket-wheel at its outer end and a head or disk at the inner end; and Fig. 7 is a view of the cover removed from the machine.

Referring by letter to the said drawings, A indicates the main frame for properly supporting the reel-chamber. The lower portion, B, of this reel-chamber has its side walls converging and leading to the endless conveyer-chamber W', arranged at the base of the said reel-chamber, and has a worm or conveyer, *f*, therein, carrying at its exposed end a sprocket-wheel, W<sup>2</sup>, as will be hereinafter explained.

D indicates the reel, which is of the form of a frustum of a hollow cone. This reel is made in two longitudinal sections, and the parts are united by passing screws or other suitable fastening devices transversely through the longitudinal meeting ribs of the said reel. The reel is composed of longitudinal ribs E', secured

at opposite ends to semicircular pieces G. To the semicircular pieces at the large end of the reel are secured the outer ends of radial arms I, the inner ends of which are secured to the hub E', which hub is secured to the inner end of a sleeve, *w'*, on the drive-shaft, and this sleeve has secured to its opposite or outer end a large gear, X. Thus it will be seen that the large gear X is secured to the reel through the medium of the sleeve *w'* and the hub on the inner end thereof. The bolting-cloth is secured to this reel on the inner sides of the longitudinal ribs and the end rings in any well-known manner, and each section of the reel is provided externally with a metallic strap, R, having a cam projection, R', and these projections, when the said bands are on the reel, are brought preferably at diametrically-opposite points and are designed to engage the spring-pressed knocker *s*, arranged in the case *s'* in one of the side walls of the reel-case, as shown.

At the smaller end of the reel, and upon the drive-shaft, is a sleeve, *w'*, similar to that at the opposite end of the reel, and the sleeve has at its inner end a fixed hub, E<sup>2</sup>, to which the inner ends of the radial arms I' are secured, the outer ends being secured to a metallic band or ring, H, which in practice engages by its external surface or periphery the inner edge of the ring G at the smaller end of the bolting-reel. At the outer end of the sleeve *w'* last mentioned is secured a sprocket or rag wheel, *i*, which is connected by means of the chain *h* with the gear on end of the worm *f*, and imparts motion to the latter.

F' indicates the beater, which is composed of longitudinal ribs and radial arms at the ends, and connected in a manner similar to the ribs and arms of the bolting-reel. The arms are secured to disks or hubs, as shown, which latter are made fast to the drive-shaft, so that when the shaft is rotated the beater will also be simultaneously rotated within the bolting-reel. Some of the ribs N of the reel have brushes secured to their longitudinal edges, and are designed to engage and clean the inner side of the bolting-cloth when the machine is in operation.

E indicates the drive-shaft, which passes longitudinally through the bolting-reel and



beater, and is supported near opposite edges in the main frame. This shaft is provided at one end with a fixed drive-pulley, which may receive power from a suitable drive-belt, which is not herein shown, and the opposite end of the shaft is provided with two fixed collars, *a*, which are arranged, as shown, so as to form a space between them for the reception of the forked end of the spring-arm C. This spring-arm C is secured at its outer end to one of the transverse beams of the main frame, and is provided about midway of its length with a transverse aperture for the passage of a thumb-screw, *d*. This spring is so bent that when the wings or head of the screw is free from engagement therewith the said spring will press against the outer collar of the shaft and draw the latter toward it, and when the screw is turned into the main frame and upon the arm C the shaft will be moved in the opposite direction. By this operation it will be seen that the beater may be moved longitudinally within the reel and the force of engagement between the two adjusted, the movement of the reel being of course very slight. It will be seen that the beater has a rotary movement, similar to the worm in the bottom of the rear chamber, and that motion is communicated from the former to the latter.

The reel-chamber is provided at one end with a valve, P, through which air is admitted to be forced through the bran to take off the heat, said air being discharged through the tubes Q Q' in the top of the reel-chamber.

Near one end of the drive-shaft is a fixed gear, Y. B' indicates a short horizontal shaft, which is journaled in the main frame and parallel with the drive-shaft. This short shaft is provided with a large gear, Z, which is designed to engage and receive motion from the gear Y on the main shaft, and the motion thus received is imparted through the medium of a gear, V, also on the shaft B', to the gear X on the sleeve *w'* adjacent thereto, which motion will thence be communicated to the bolting-reel. Thus it

will be seen that when power has been applied to the drive-shaft the beater secured thereto will be rotated within the bolting-reel, and that through the medium of the gearing at the opposite end of the shaft and that on the short shaft B' the bolting-reel will be simultaneously rotated in the same direction, the chain *h* also imparting motion to the conveyer in the lower portion of the reel-chamber.

A' indicates the cover for the reel-chamber. This cover is composed of two vertical end walls and longitudinal slats or boards *a'*, which have their longitudinal edges beveled or cut slanting, as shown, so that when the said edges are brought together lap-joints will be formed and the parts will be allowed to expand without exposing the joints and allowing air to enter the chamber. The end walls of the cover are provided with battens or strips *m* on the under sides of the longitudinal boards *a'*, and with similar strips on the outer sides thereof, so that should the parts contract or expand the joints will not open to admit air.

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

The combination, in a bran duster having its main frame constructed, as described, of a tapering bolting-reel arranged loosely on a rotative shaft, the rotating shaft provided with the fixed collars, a tapering beater secured to the said shaft within the reel, the spring C, secured at one end to the main frame and with its opposite end between the collars on the said shaft, and the screw *d*, passing through the said spring and bearing in the main frame, whereby the shaft may be moved and the beater adjusted within the bolting-reel, substantially as specified.

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

LEVI S. HOGEBROOM.

Witnesses:

JNO. G. MUNDY,  
C. H. HIGDON.