

(No Model.)

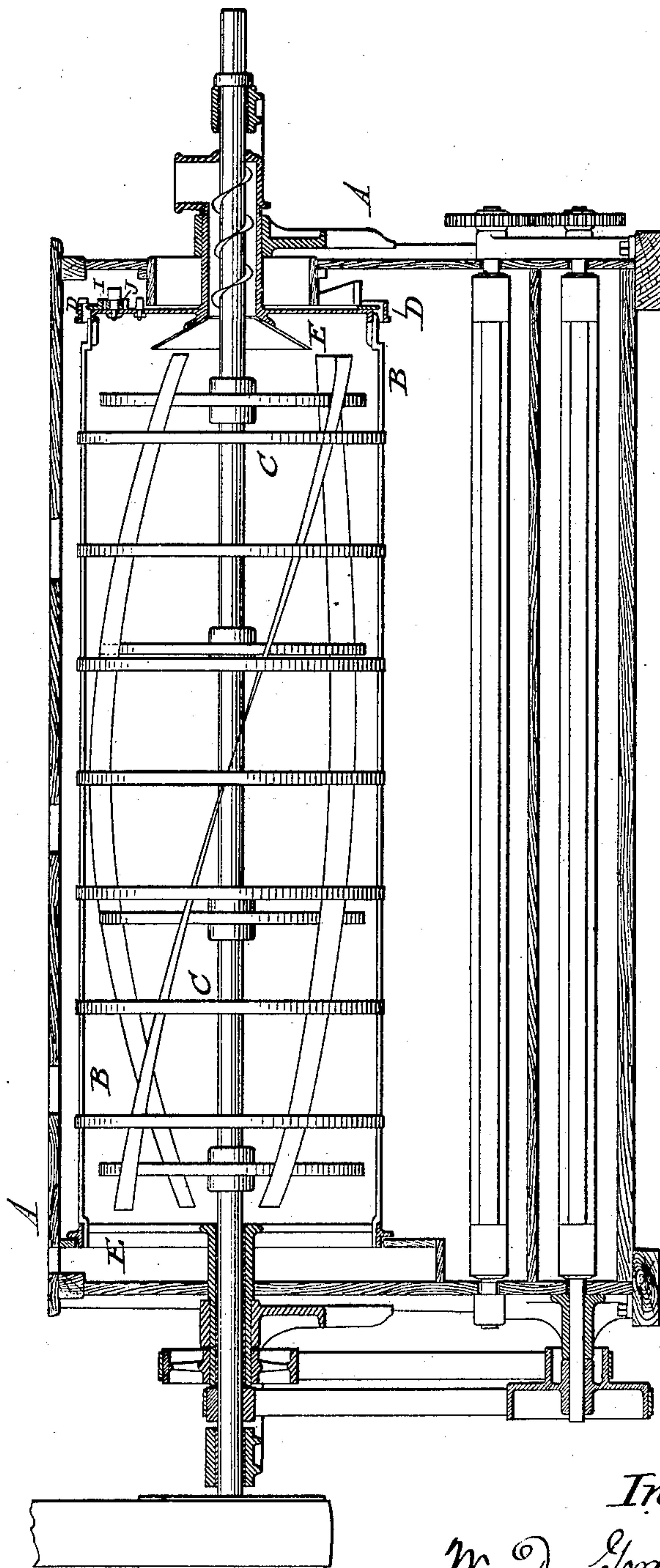
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W. D. GRAY.
FLOUR DRESSING MACHINE.

No. 260,477.

Patented July 4, 1882.

Fig. 1.



Attest.

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2 Sheets—Sheet 2.

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Fig. 2.

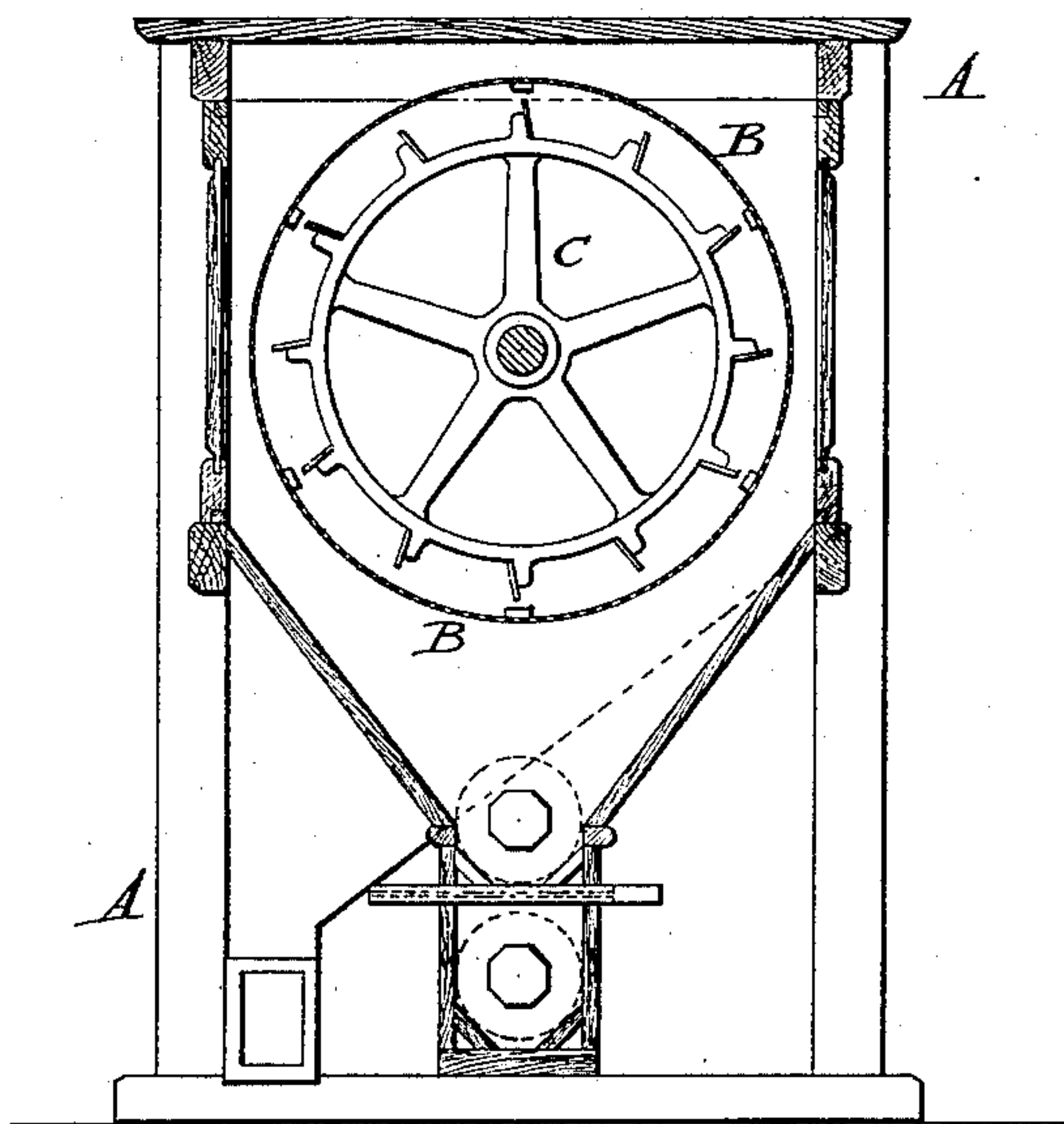


Fig. 3.

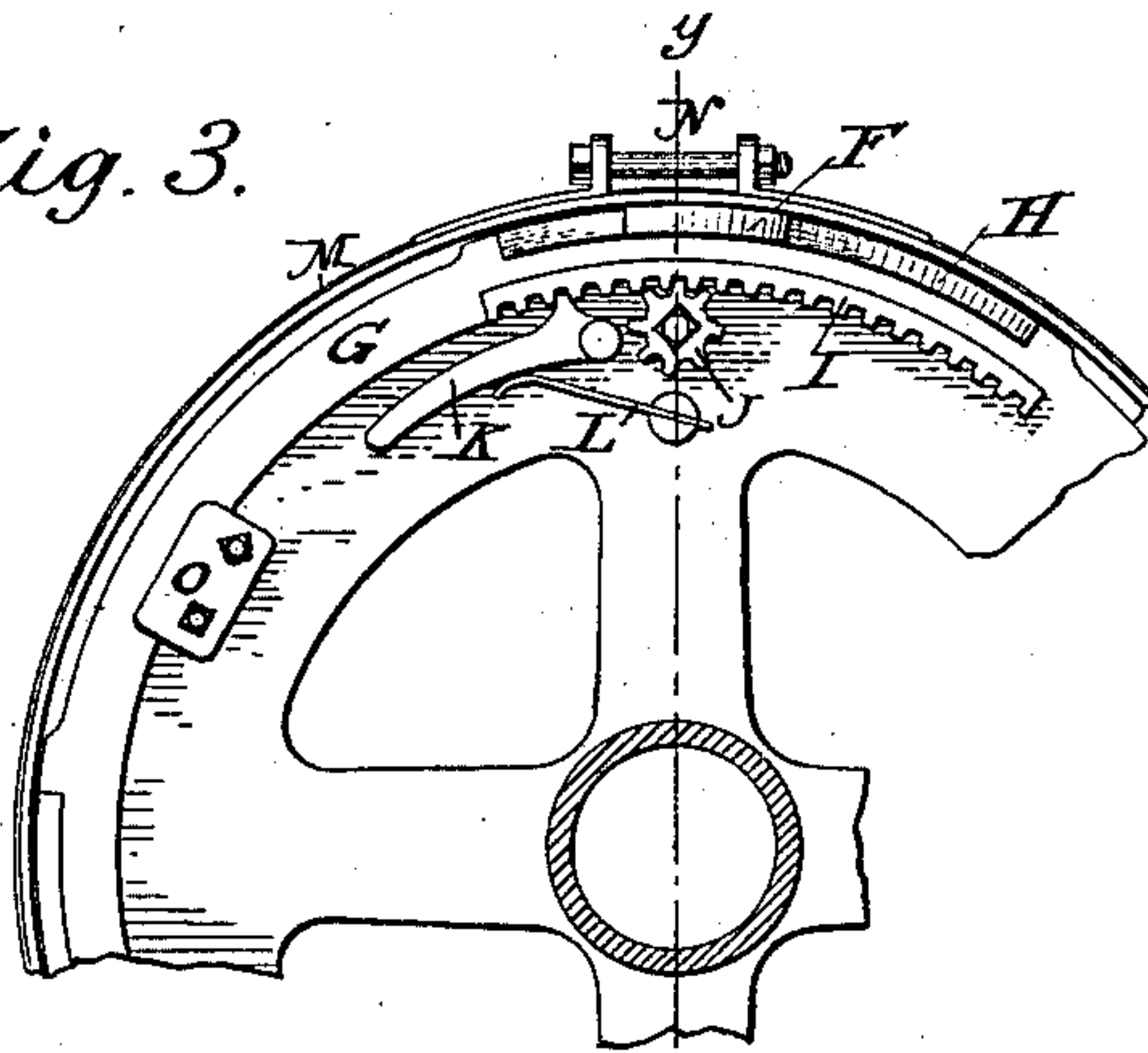


Fig. 5

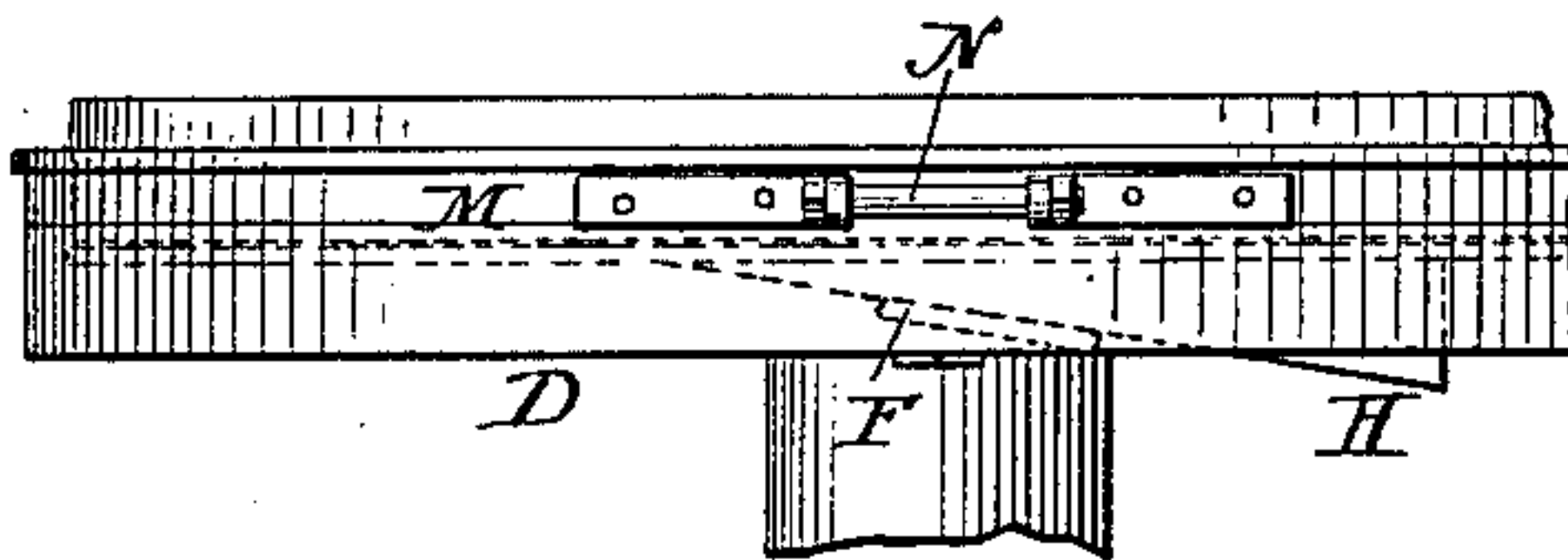
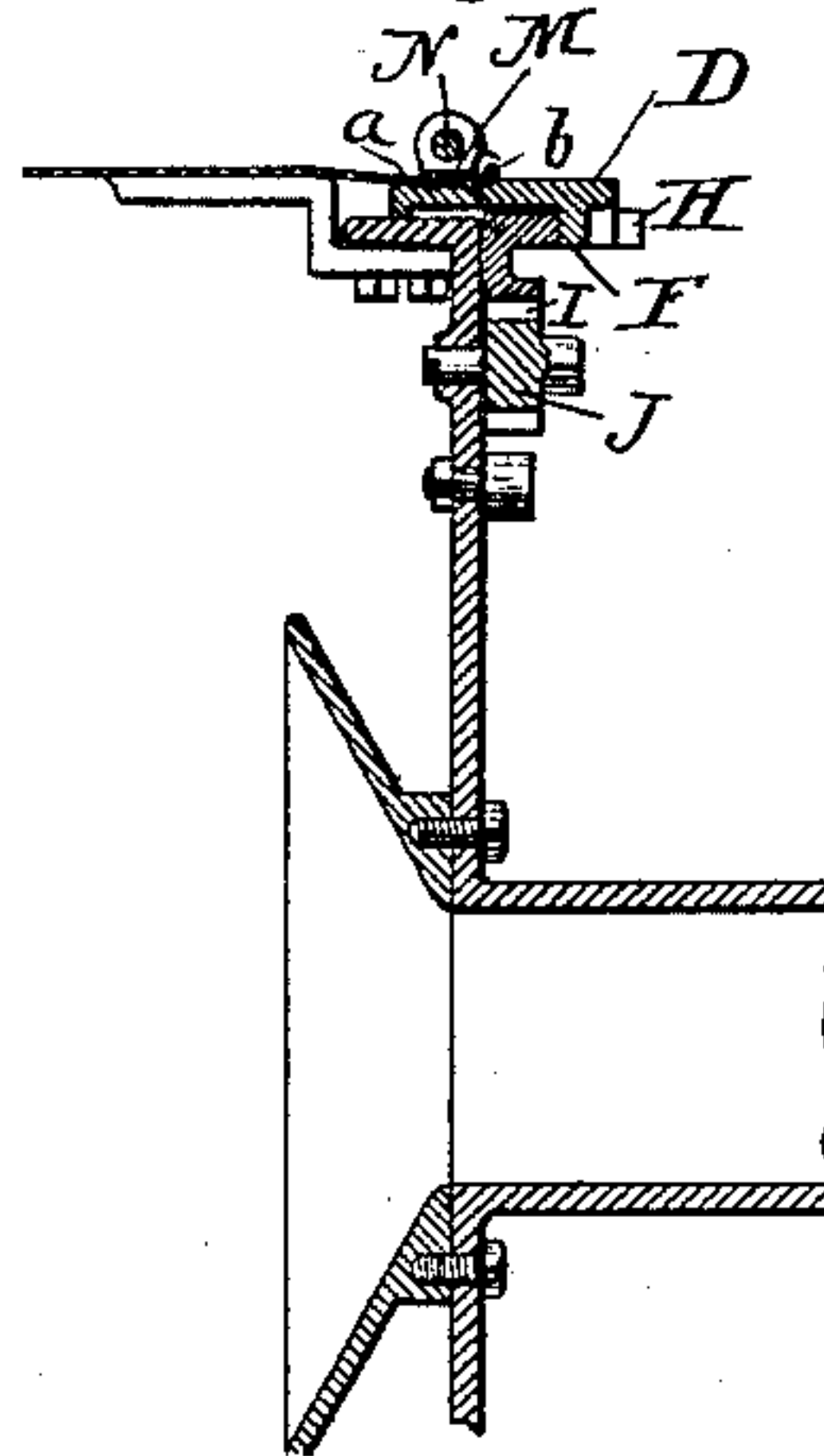


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM D. GRAY, OF MILWAUKEE, WISCONSIN.

FLOUR-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 260,477, dated July 4, 1882.

Application filed April 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. GRAY, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain Improvements in Flour-Dressing Machines, of which the following is a specification.

My invention relates more particularly to that class of machines known as "centrifugal bran-dusters" or "flour-dressers," wherein revolving blades or beaters are mounted within a cylindrical screen or bolt for the purpose of driving the bran or chop against its surface.

The invention relates to an improved manner of constructing the parts to admit of the bolting-cloth or screening-surface being stretched longitudinally; and it consists essentially in the combination, with the sliding hoop or band to which the bolting-cloth is fastened, of a movable ring provided with wedges or inclined surfaces to act upon the hoop and move the same endwise with respect to the reel, as hereinafter detailed.

The improvement, although designed mainly for the machines above described, is applicable to rotary bolts for other purposes.

Referring to the accompanying drawings, Figure 1 represents a longitudinal vertical section through the center of a machine containing my improvement. Fig. 2 is a vertical cross-section of the machine on the line *x x*. Fig. 3 is an end view, on an enlarged scale, of the cloth-straining devices. Fig. 4 is a vertical section through the same on the line *y y*. Fig. 5 is a top plan view of the same.

Referring to the drawings, A represents a strong case or chest; B, a horizontal cylindrical reel or screen mounted within the body; and C, the revolving beater, consisting of a central shaft provided with a series of arms carrying at their outer ends spirally-arranged blades or beaters, which serve to agitate the mass of material and throw the same against the inner surface of the bolting-cloth, at the same time producing currents of air within the reel to assist the bolting action. The cylindrical reel, which may be made in other respects of ordinary construction, terminates at each end in a circular hoop or ring, to which the edge of the bolting-cloth will be permanently secured by an encircling band or equivalent fastening. At one end of the reel the

hoop or band may be of any suitable construction. At the opposite end the reel is constructed with a circular end plate or head, E, the outer edge of which is encircled by the hoop D, which supports the bolting-cloth.

Upon the outer edge of the hoop D, I form inwardly-extending lips or flanges F, standing obliquely or at an inclination thereto. To the end or head plate, E, of the reel I apply, on the outer side, a large movable ring, G, having on its outer surface a series of inclined ribs, H, which bear against the inside of the lips on the cloth-sustaining hoop. The hoop is thus sustained and held in position by the inclines upon the ring, so that by revolving the ring within the hoop its inclined surfaces are caused to force the hoop backward or outward, and thus strain the bolting-cloth endwise.

The ring G may be constructed in any suitable form and sustained in position upon the head by any suitable device, a cheap and simple construction to this end consisting in the use of the clip-plates O, bolted to the head of the reel and engaging over the inner edge of the ring, as shown.

As a convenient means of turning the ring to effect the tightening of the cloth, I form a rack, I, on the inner edge of the ring, as clearly shown in Figs. 3 and 4, and mount upon the head-plate of the reel a pinion, J, engaging in said rack, as shown, this pinion being provided with an angular hub or projection, to which a wrench or equivalent operating device may be readily applied.

For the purpose of securing the ring after its adjustment, I pivot to the head-plate of the reel a pawl or dog, K, having a tooth to enter and engage in the rack. For the purpose of keeping this dog in engagement with the rack, a spring, L, is applied to the head-plate of the reel and arranged to act upon the dog, as clearly represented in Fig. 3.

The essential feature of the invention as regards the tightening arrangement consists in providing the revolving ring with inclines to force the cloth-sustaining hoop outward, and it is manifest that the details may be modified in many respects which will suggest themselves to the skilled mechanic without essentially changing the mode of action or departing from the limits of the invention.

The edge of the cloth may be attached to the ring in any suitable manner; but it is preferred to provide the ring with a rim or shoulder, *a*, around its inner edge, and to clamp the edge of the cloth over and around the outside of this shoulder by means of an encircling band or hoop, *M*, passed outside of the cloth around the supporting-hoop and drawn tightly thereon by means of a bolt, *N*, connecting its ends, as shown in Figs. 3, 4, and 5.

As an additional security against the escapement of the cloth, it is preferred to provide the same with a corded or thickened edge, *b*, to engage against the outer side of the hoop *M*, as shown in Fig. 4. As before stated, however, the cloth may be attached to the hoop in any suitable manner.

The present invention is restricted to the invention hereinafter specifically claimed, and as to all other parts or features of the machine which may be shown in the drawings the right is reserved to make the same the subject-matter of a separate application.

It is manifest that in place of the ring having the series of inclines a series of wedges may be applied to the head of the reel to operate upon the hoop; but the construction shown is preferred.

Having thus described my invention, what I claim is—

1. In combination with the cylindrical bolting-cloth, the cloth-sustaining hoop, the ring provided with inclines arranged to move the hoop outward, and a suitable support for said ring, substantially as described and shown.
2. In combination with the reel-head, the ring mounted thereon and provided with inclines, the hoop supported by said inclines, and the bolting-cloth attached to the hoop.
3. In combination with the cloth-supporting hoop and the head of the reel, the adjustable ring provided with the inclines and the rack, and the adjusting-pinion mounted upon the head of the reel and engaging with said rack.
4. In a bolting-reel, the combination of the adjustable ring *G*, constructed and operating as described, the adjusting-pinion, and the locking-dog *K*, engaging with the rack, as shown.

WILLIAM DICKSON GRAY.

Witnesses:

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GEORGE M. HINKLEY.