

(No Model.)

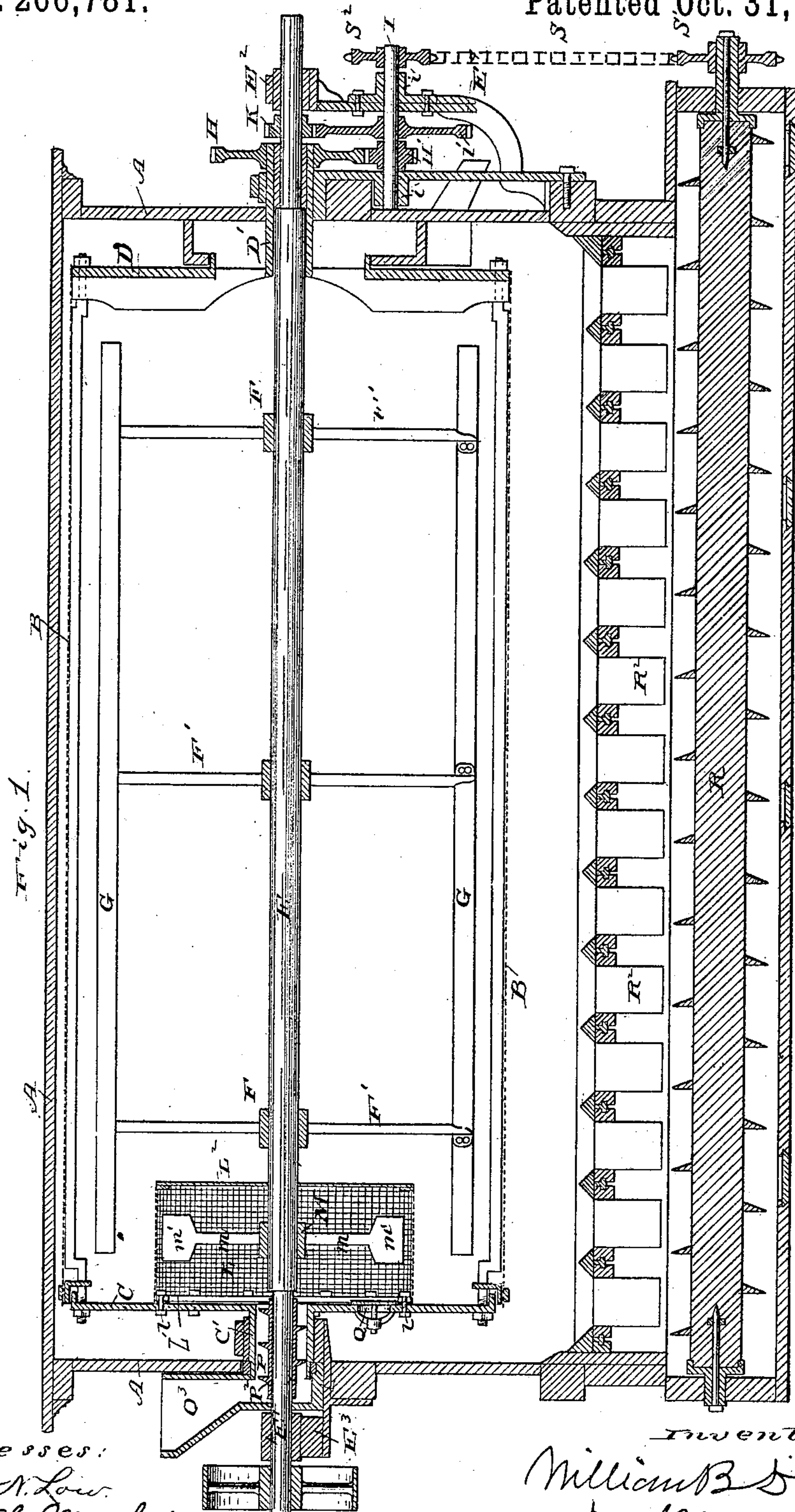
2 Sheets—Sheet 1.

W. B. DELL.

CENTRIFUGAL FLOUR DRESSING REEL.

No. 266,781.

Patented Oct. 31, 1882.



Witnesses:

H. N. Low.

L. H. Marshall.

Inventor:

William B. Dell

by S. M. Bleday & Bliss  
attys.

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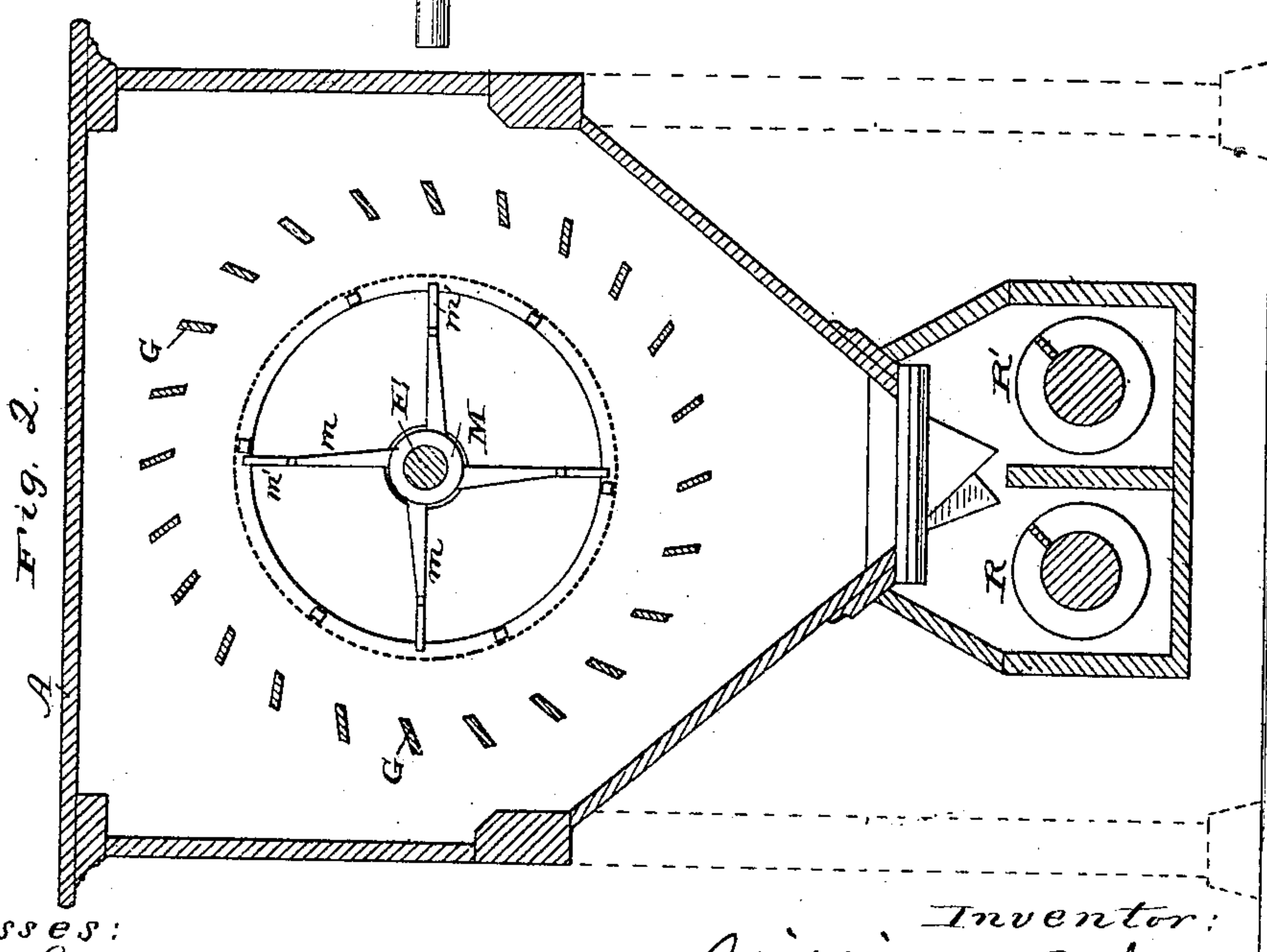
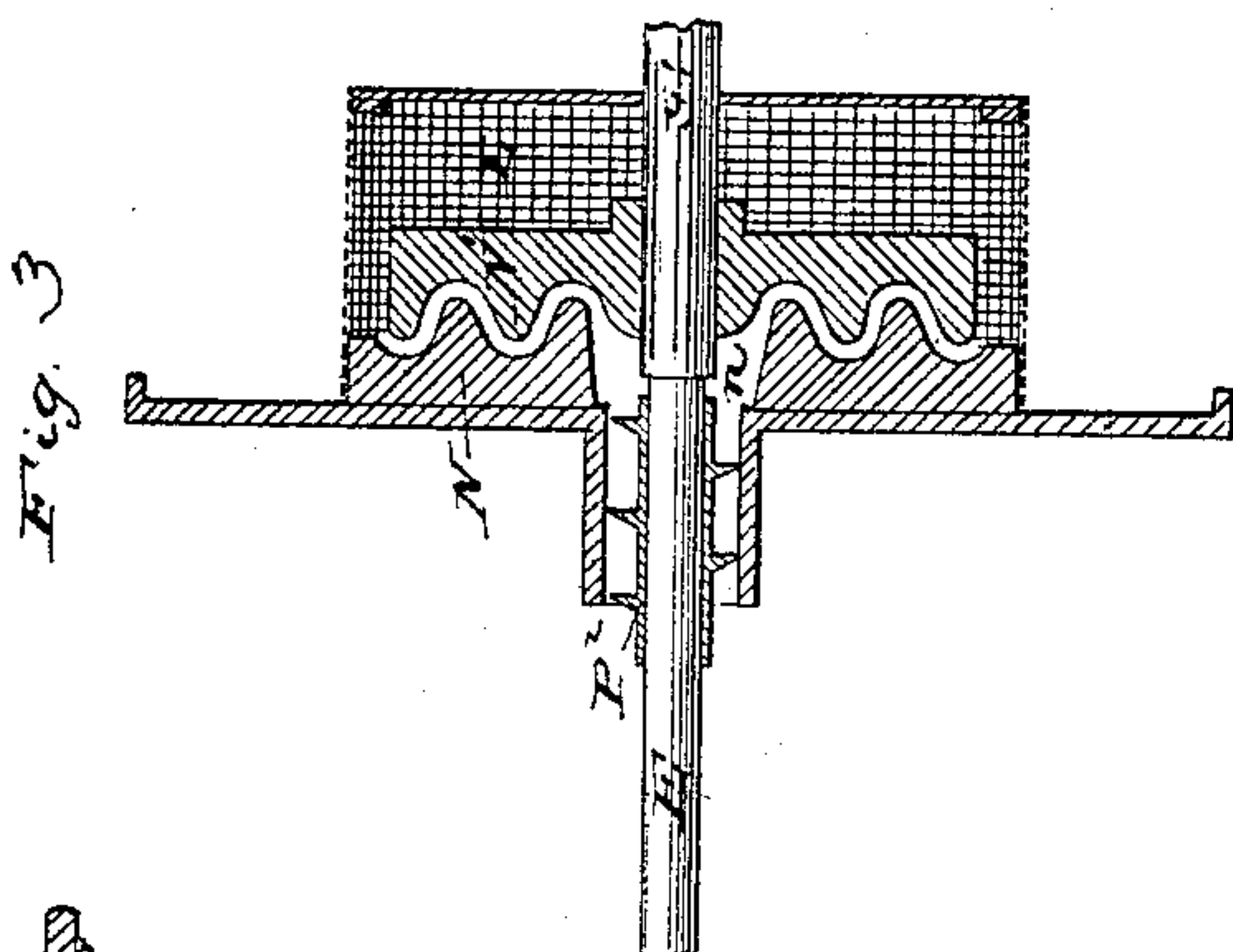
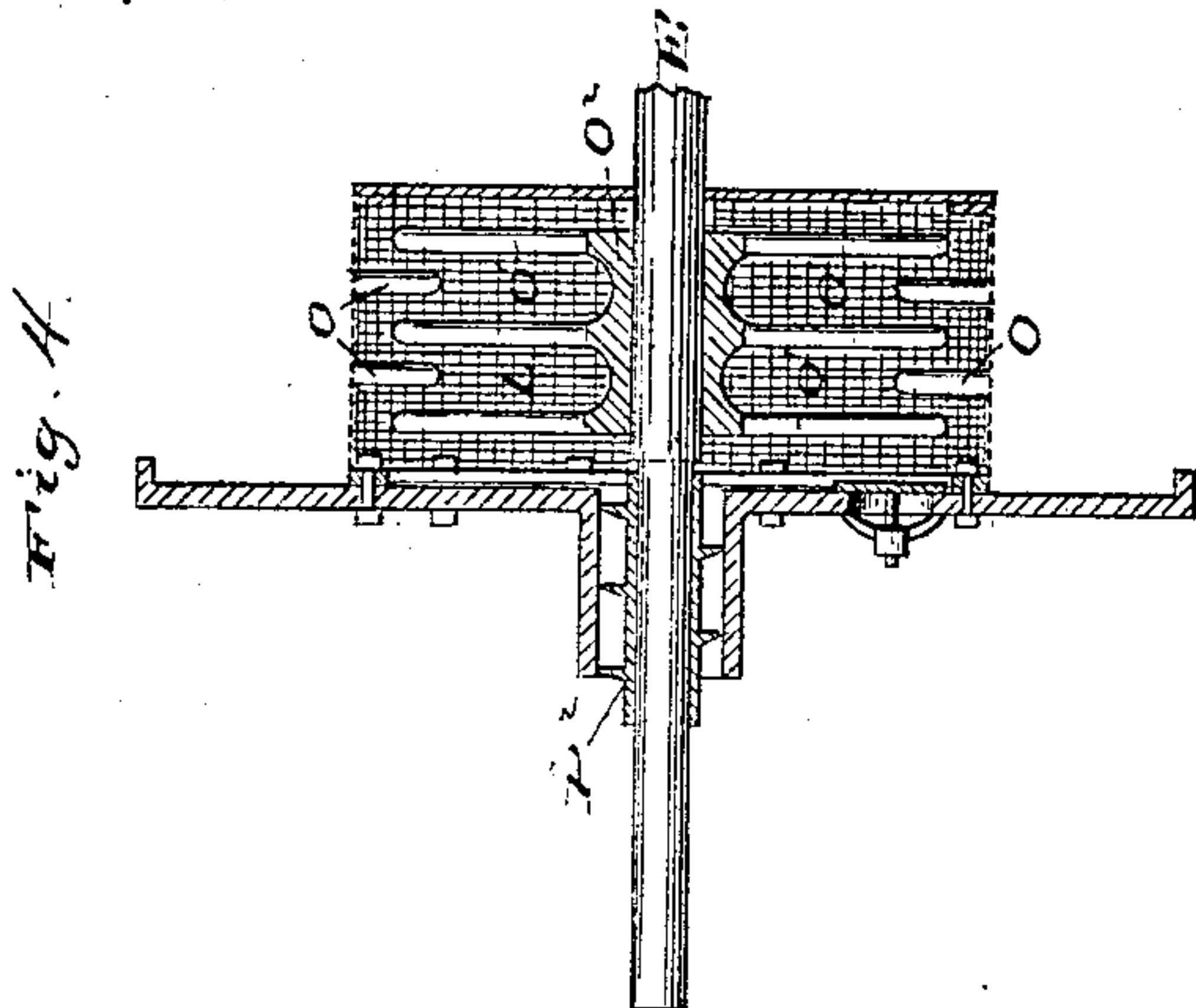
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# UNITED STATES PATENT OFFICE.

WILLIAM B. DELL, OF WEST CROYDON, COUNTY OF SURREY, ENGLAND,  
ASSIGNOR TO THE GEORGE T. SMITH MIDLINGS PURIFIER COM-  
PANY, OF JACKSON, MICHIGAN.

## CENTRIFUGAL FLOUR-DRESSING REEL.

SPECIFICATION forming part of Letters Patent No. 266,781, dated October 31, 1882.

Application filed July 6, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. DELL, a citizen of Great Britain, residing at West Croydon, in the county of Surrey, England, but now temporarily residing at Jackson, Michigan, United States of America, have invented certain new and useful Improvements in Centrifugal Flour-Dressing Reels, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a longitudinal section of a reel constructed with my improvements, this figure showing also a surrounding casing and conveyor mechanism below the reel. Fig. 2 is a vertical cross-section. Fig. 3 shows a portion of a reel having a modified form of disintegrator attached. Fig. 4 shows another modification of the same devices.

The improvements which I have devised are applicable generally to reels of the class known as "centrifugal reels," and I do not wish to limit myself to any specific form of the reel, though I have shown and will describe two or three reels having my improvements embodied.

In the drawings, A represents a casing or housing, which may be of the ordinary character.

B represents the silk cloth or covering of the reel. It is supported upon heads C D, these heads being cast with or provided with hollow trunnions C' D'.

E is a shaft mounted centrally within and extending longitudinally through the reel. It is mounted in bearings E' E<sup>2</sup>, the bearing E' being provided by means of a bracket-plate, E<sup>3</sup>, and the bearing E<sup>2</sup> being supported by a standard or upright, E<sup>4</sup>.

F F are spiders having the radially-extending arms F', carrying the beaters or spreaders G, the spiders being secured upon the shaft E by means of their hubs. The beaters or spreaders G are, by means of shaft E, revolved within the reel and independently thereof at a speed considerably greater than that of the reel. Preferably the relative speeds are in the proportion of ten to one. A rotary motion is transmitted from the shaft to the reel through the following devices:

K represents a wheel mounted upon the shaft

E and meshing with another wheel, I', on a supplemental shaft, I, preferably below the shaft E, and mounted in bearings at i i', supported by the casing A and by the upright E<sup>4</sup>.

H' is a wheel on shaft I, meshing with a wheel, H, secured to the outer end of the hollow trunnion D' at the tail of the reel. When the shaft E is rotating motion is transmitted therefrom, through the devices last described, to the reel, as will be readily understood, the speed being reduced in about the ratio mentioned.

At the head of the reel I arrange the wire guard, cage, or basket L. It is formed of wire, and is secured to the head C of the reel. Preferably it is fastened to the head by means of bolts l and a clamp or clamps, L', drawn against the head by means of said bolt l. At the inner ends it is provided with a disk or head-piece, L<sup>2</sup>, which is also clamped by bolts or otherwise to the cage or basket.

Within the cage are arranged the disintegrating or detaching devices. In the drawings I have shown several forms of disintegrator, though others of more or less modified character will readily suggest themselves. The one shown in Figs. 1 and 2 consists of a hub, M, secured to the shaft E, and provided with two or more arms, m, projecting to within a short distance of the cage or guard L, the arms being provided preferably with expanded heads or ends m' for the purpose of more advantageously lifting and stirring the material. In the construction shown in Fig. 3 the disintegrator consists of a disk or plate, N, secured against the inner face of the head C of the reel, and provided with a central aperture, through which the material is fed, and an opposing disk, n'. The disks are respectively provided with concentric grooves or ways and concentric ribs or projections, the ribs or projections of one disk corresponding in position with the grooves or ways in the other. A passage-way is thus arranged for the material between the two disks, and as one of the latter revolves very rapidly the material is by centrifugal action forced from the entrance-aperture n out to the periphery of the disk, it being in its passage broken up or comminuted



in a manner analogous to that in which the beater-arms and heads  $m m'$  in the construction shown in Figs 1 and 2 operate.

In the machine shown in Fig. 4 arms or pins 5  $O O$  are employed, they being secured to and projecting inwardly from the cage or guard.

$O' O'$  are arms carried by a head,  $O^2$ , secured to the shaft, and arranged to overlap or pass between the arms or pins  $O$ . They operate to stir and break up the lumps or flakes of material, and to separate the flour from the bran in a manner similar to that above described.

The material is fed to the cage or guard by 15 means of a hopper,  $O^3$ , and a passage-way or conduit,  $P$ , in which latter there is arranged a conveyer,  $P^2$ , carried by the shaft  $E$ . In operation the material to be bolted is fed through the said hopper and the conduit  $P$ , provided 20 by the hollow trunnion, into the cage or guard. After entering said cage or guard it is operated upon by the disintegrator revolving at a high speed, the result of which is to whip, grind, and dismember the material sufficiently 25 to break it up into fine particles, detaching the flour particles from the bran. After being sufficiently treated in this manner it passes through the meshes of the cage or guard into the bolting-reel, where the desired bolting action is effected. Any foreign materials which 30 it is not desirable to have pass into the reel are caught and retained by the cage, and may be removed therefrom through a hand-hole at  $Q$ , which may be of the usual character.

35 Below the reel there are conveyers  $R R'$ ,

and above them reversible spouts  $R^2$ , by which the material can at any point be delivered to either of the conveyers. However, these last-described parts do not form essential parts of my invention.

Power is conveyed to the conveyer-shafts by means of a chain,  $S$ , passing over sprocket-wheels  $S'$  on the ends of the conveyer-shafts, and over a wheel,  $S^2$ , on the end of shaft  $I$ .

What I claim is—

1. The combination, with the bolting-reel provided with a silk or cloth covering, beaters or spreaders mounted within the reel, and means for moving said beaters or spreaders independently of the reel, of a guard, cage, or 50 basket secured inside said cloth covering at the receiving end of the reel, substantially as set forth.

2. In a centrifugal bolting-reel, the combination, with a wire guard, cage, or basket inside of said reel, of a disintegrator or detaching device arranged within the guard, cage, or basket, substantially as set forth.

3. The combination, with the bolting-reel provided with the interior guard, cage, or basket, 60 of the shaft carrying beaters inside of the reel, the means for rotating the reel, and the means for rotating the beaters with a speed greater than that of the reel, substantially as set forth.

In testimony whereof I affix my signature in 65 presence of two witnesses.

WM. B. DELL.

Witnesses:

WM. A. KING,

GEO. S. BENNETT.