(No Model.) 2 Sheets—Sheet 1.

G. T. SMITH.

FLOUR BOLT.

No. 339,026. Patented Mar. 30, 1886.

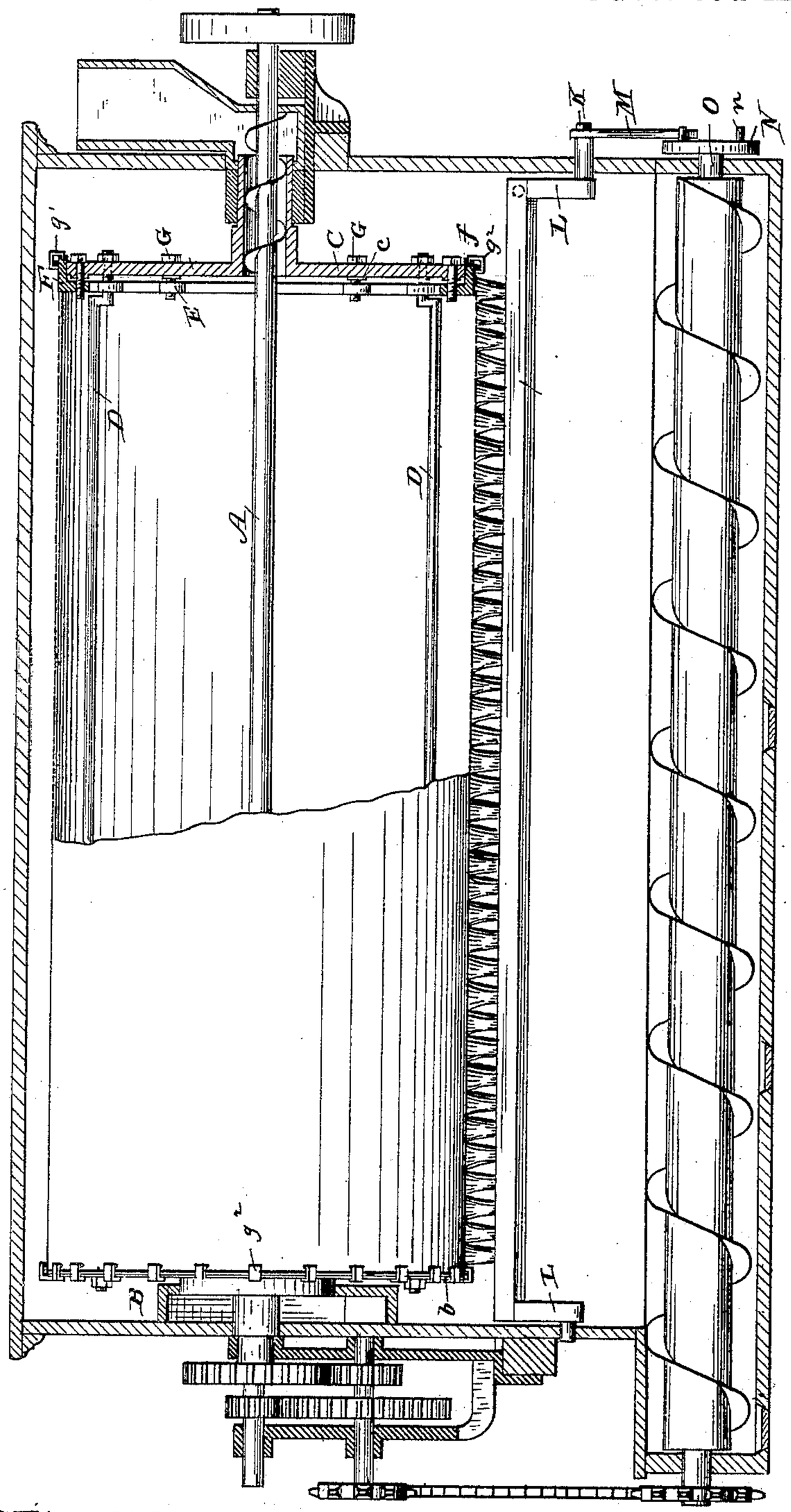

Fig. 1

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(No Model.) 2 Sheets—Sheet 2.

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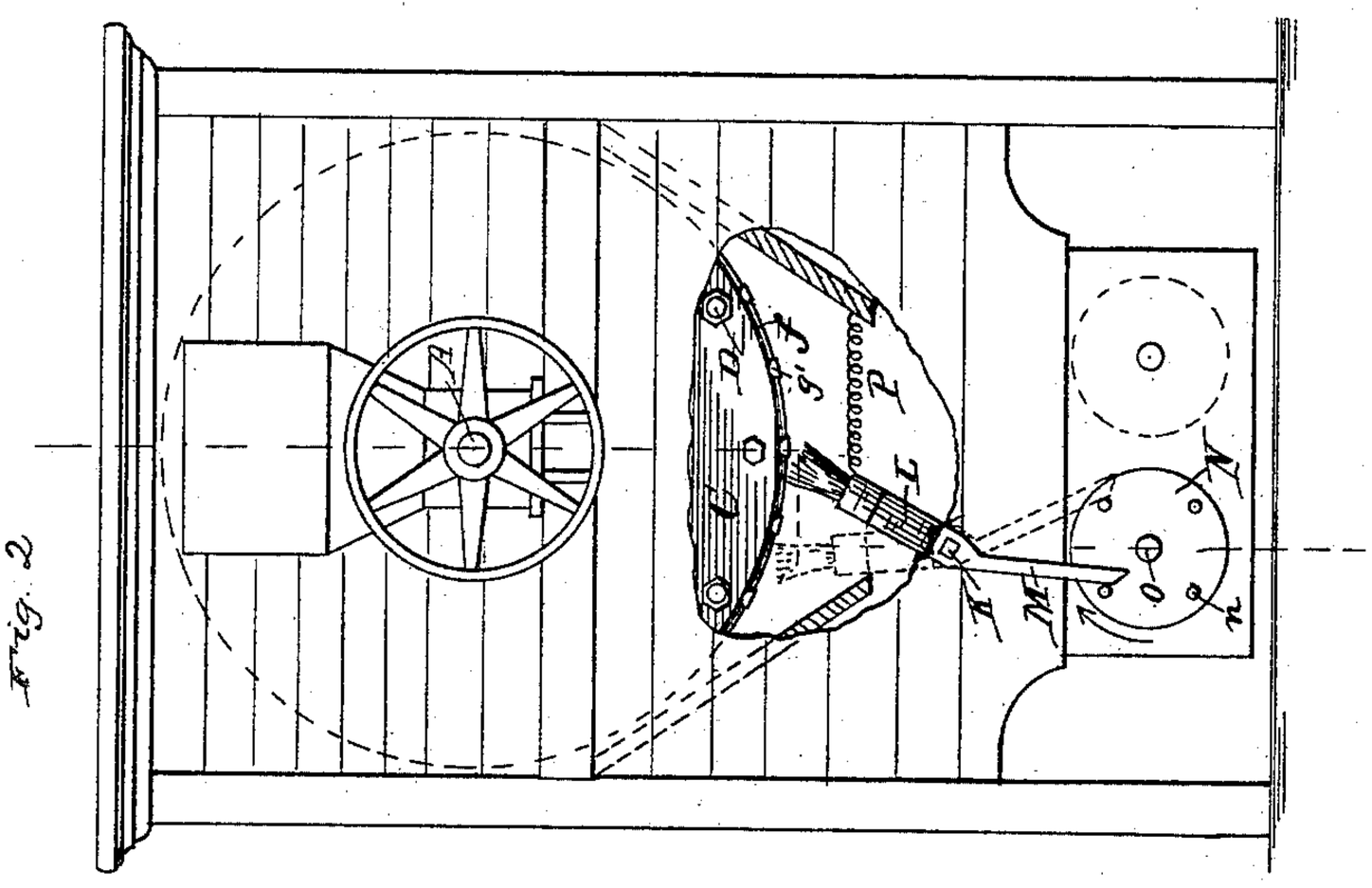

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UNITED STATES PATENT OFFICE.

GEORGE T. SMITH, OF JACKSON, MICHIGAN.

FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 339,026, dated March 30, 1886.

Application filed June 5, 1883. Serial No. 97,179. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. SMITH, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Flour-Bolts, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation, partly in section, of a bolting-reel containing my invention. Fig. 2 is an end view, a portion of the casing being broken away.

I have shown my invention as being applied to a centrifugal reel; but it is apparent that it may be used in connection with many other types or forms of bolting-reel; hence I do not wish to be limited by the construction herein shown.

I have shown the reel as being mounted in an ordinary frame-work, with an inclosing-casing, gather-boards, and conveyers of the usual construction, and which need not therefore be specifically described.

In the drawings, A is the centrifugal beater-shaft, through which power is applied for the purpose of operating the beaters and the rotating reel.

B C are the reel-heads, and D D the longitudinal ribs, which extend from one reel-head to the other, as is customary in this class of machines. The reel-head B is substantially flat upon its outer face, except that it is grooved near its periphery, thus leaving a rib or bead, *b*, around its outer edge.

E F is a flanged ring of such internal diameter as to fit closely the periphery of the head C, which latter is flat upon both sides, except that, by preference, it is constructed with a series of bosses, *c c*, upon its inner face, the bosses being arranged in a circle, of which the beater-shaft is the center. This head is provided with a series of holes, each extending through the head proper and through one of the bosses *c*.

G G are draw-bolts fastened through the holes in the heads and the bosses *c*, and into screw-threaded holes formed for their reception in the flanges or ears E of the ring.

g g are clips or clasps, each attached at one end to the bolting-cloth, and adapted to engage with either the reel-head or the ring E F, and thus connect the bolting-cloth with the reel-frame.

In order to keep the meshes of the bolt-cloth clean, I have devised the following mechanism: K is a rock-shaft mounted at both ends in the casing, and having brush-carrying arms L L keyed thereto near each end just inside the casing. M is a rocking arm keyed to the rock-shaft outside the end casing, with its lower end extended down into the path traversed by a series of pins, *n*, preferably two or more, which project horizontally from the vertical face of a wheel, N, which is attached to and carried by the outer end of one of the conveyer-shafts O. P is a retracting-spring having one end secured to the casing or the frame of the machine, and its opposite end attached to the brush, or to one of the rocking arms L, as may be preferred, so that at each revolution of the conveyer-shaft a number of reciprocations will be imparted to the brush.

It will be seen that the pins *n* act as stops to prevent the spring P from drawing the rocking arm M too far to one side, in which case the pins would fail to act upon it as they move around with the wheel N.

When preferred, the spring P may be attached to the rocking arm M, and some other form of spring might be substituted for the spiral shown in the drawings.

I have shown and prefer to attach one end of this spring P to the brush-back and the other end to one of the gather-boards, as this arrangement insures that the spring shall work advantageously, shall be entirely concealed and protected, and that there shall always be some stationary part of the machine (the gather-board in this instance) to which one end of the spring may be readily attached, whatever be the position of the spring longitudinally of the reel; or, when preferred, a weighted arm projecting at an angle from the brush-arms L L might be employed to return the brush to its normal position after the rocking arm has been moved by one of the pins *n*.

I do not claim, broadly, the combination, with the outer surface of a reel-bolt, of a brush arranged longitudinally and mounted upon rocking arms so as to sweep the cloth, as I am

aware that such construction is old; but my construction of devices possesses some advantages over any other of which I have knowledge. For instance, imparting the swinging motion to the arm M in one direction by means of pins *n* projecting from the wheel N, and imparting a return motion by means of a spring or weight, permits the employment of plate N or its equivalent, having the pins attached thereto, under circumstances where a crank-pin projecting from the wheel and pitman connecting the crank-wheel with a rocking arm could not be used, it being apparent that the operation of my devices would not be interfered with in case a belt were applied to the conveyer-shaft outside of and in a plane parallel with the wheel N for the purpose of turning the conveyers, whereas it would be impossible to employ a crank-pin and pitman in connection with this plate N were such a driving-pulley employed. So, also, in case it were found desirable for any reason to arrange the plate N and arm M inside the casing of the machine and of the bearing of the conveyer-shaft, my devices would operate, while it is apparent that a crank-wheel and pitman cannot be employed in such arrangement of parts.

What I claim is—

1. In a flour-bolt, the combination, with the bolt-cloth, of the rock-shaft, the brush supported upon the rock-shaft, a plate attached to and carried by the conveyer, a pin projecting horizontally from the face of the plate, an arm connected to the rock-shaft and actuated by the pins, and a spring for moving the rock-shaft and brush in one direction, substantially as set forth.

2. In a flour-bolt, the combination of the bolt-cloth, the rock-shaft mounted in the casing and having one end projecting outside thereof, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, connected to the end of the rock-shaft outside of the casing, and projecting pins carried by the conveyer arranged to engage with arm M, and through it to move the brush, substantially as set forth.

3. In a flour-bolt, the combination of the bolt-cloth, a rock-shaft mounted in the casing and having one end projecting outside thereof, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, connected to the end of the rock-shaft outside of the casing, pins *n*, which move the arm M and the brush in one direction, and a spring which moves the brush in the opposite direction, substantially as set forth.

4. In a flour-bolt, the combination of the bolt-cloth, a rock-shaft mounted in the casing and having one end projecting outside thereof, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, connected to the end of the rock-shaft outside of the casing, pins *n*, which move the arm M and the brush in one direction, and a spring, P, within the casing, and connecting the brush-back with some stationary part of the machine, substantially as set forth.

5. In a flour-bolt, the combination of the bolt-cloth, a rock-shaft, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, keyed to the rock-shaft, pins which move the arm M and brush in one direction, a spring which moves the brush and arm in the opposite direction, and a stop which limits the movement of the arm caused by the spring, substantially as set forth.

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

GEORGE T. SMITH.

Witnesses:
C. F. KNAPP,
GEO. S. BENNETT.