(No Model.) 2 Sheets—Sheet 1.

M. HARMON.

MECHANISM FOR BRUSHING FLOUR BOLTS.

No. 316,778. Patented Apr. 28, 1885.

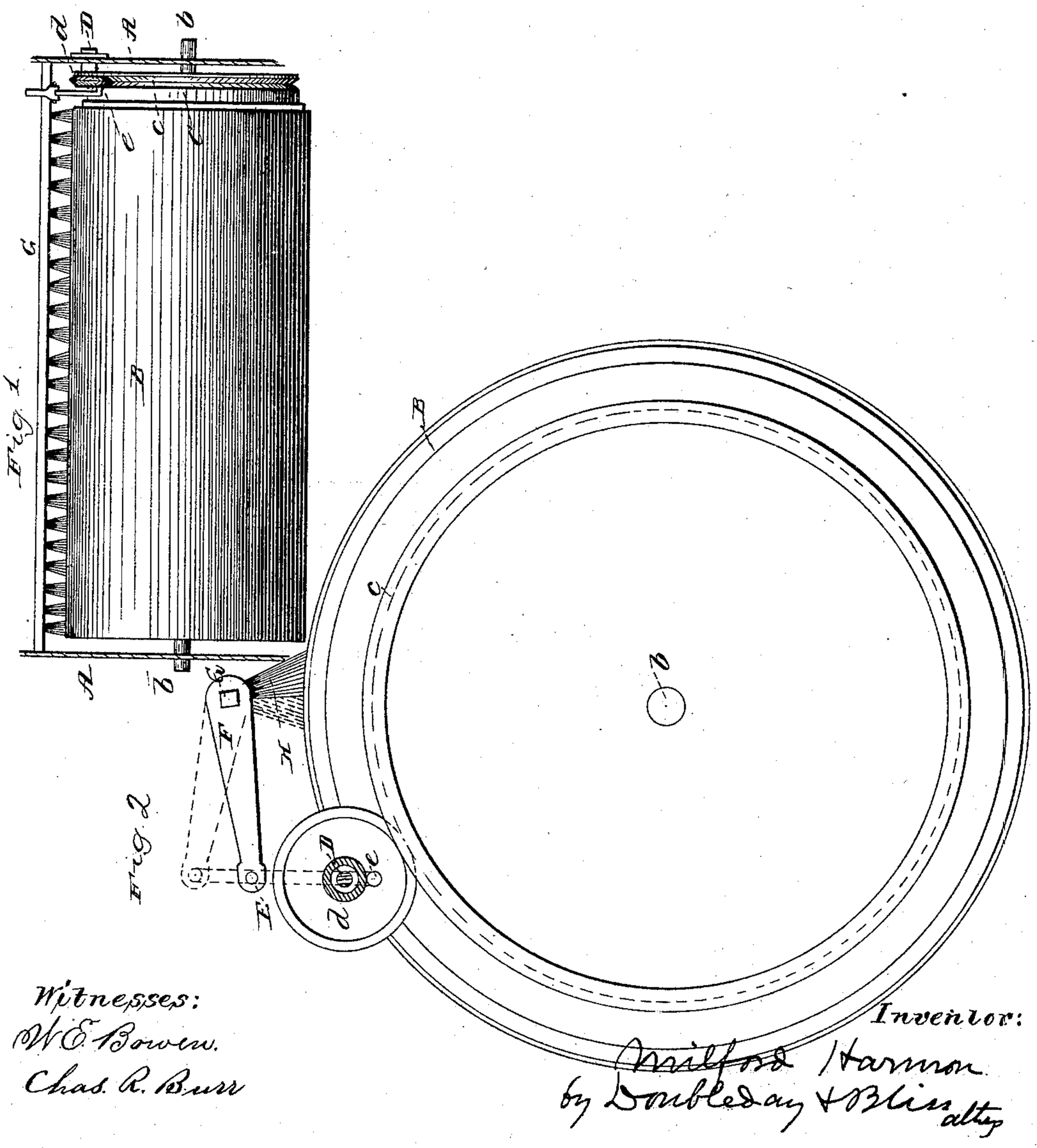

Fig. 1.

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig 4

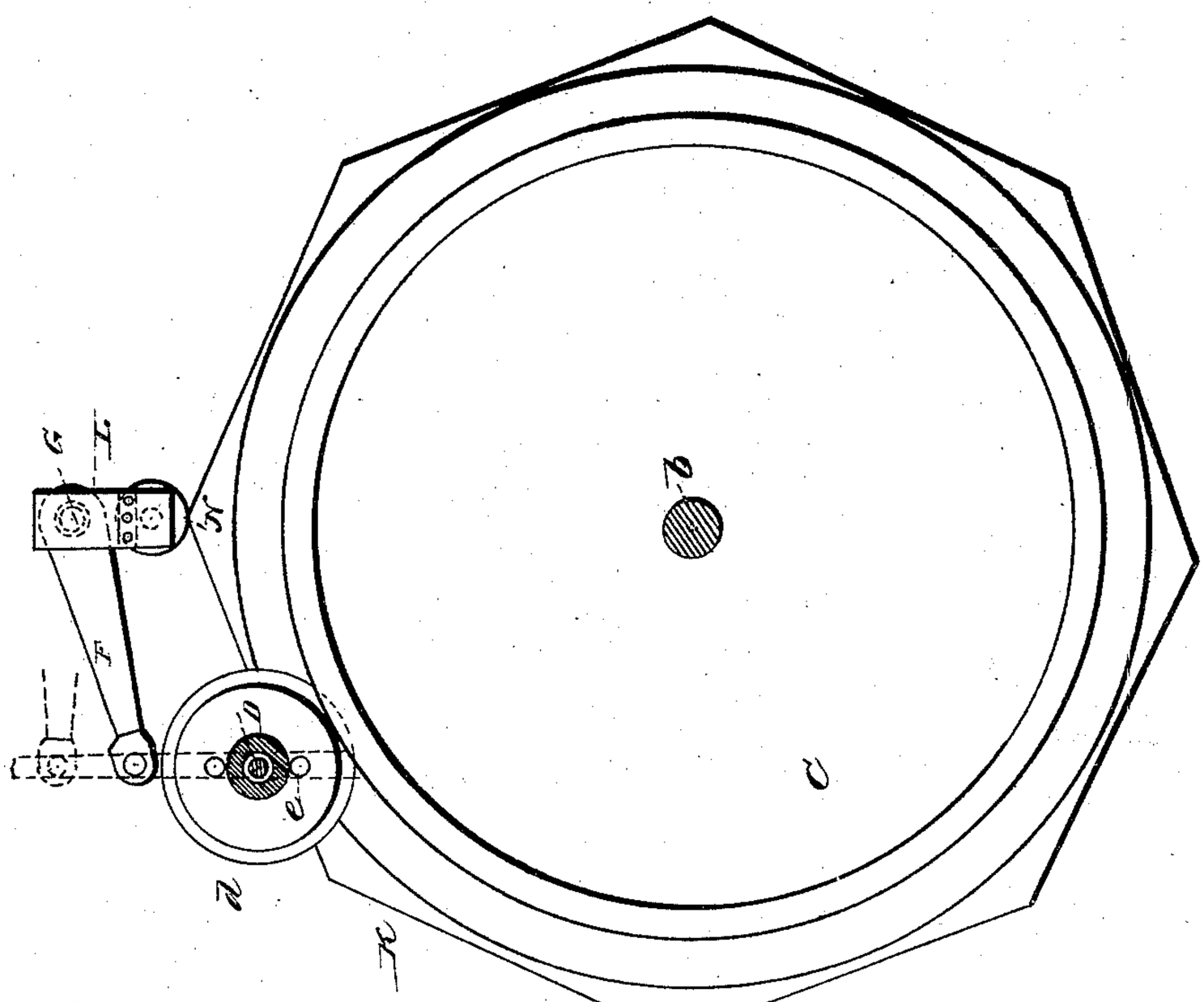


Fig. 5.

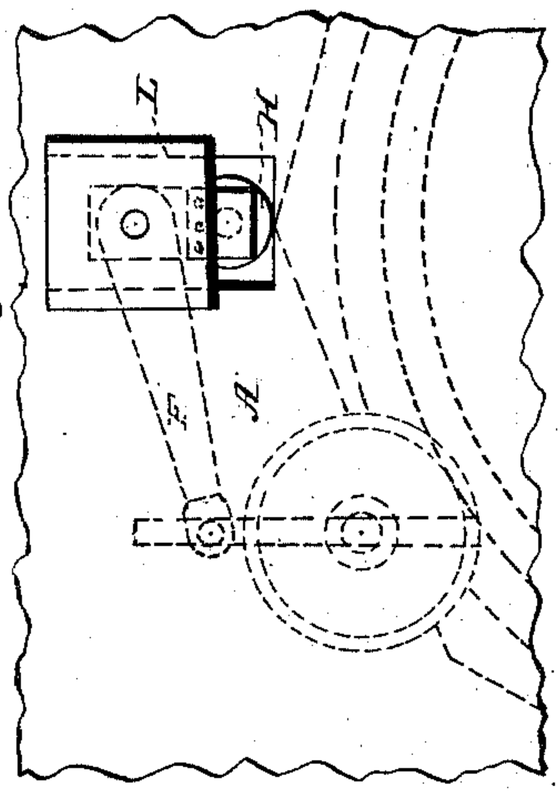
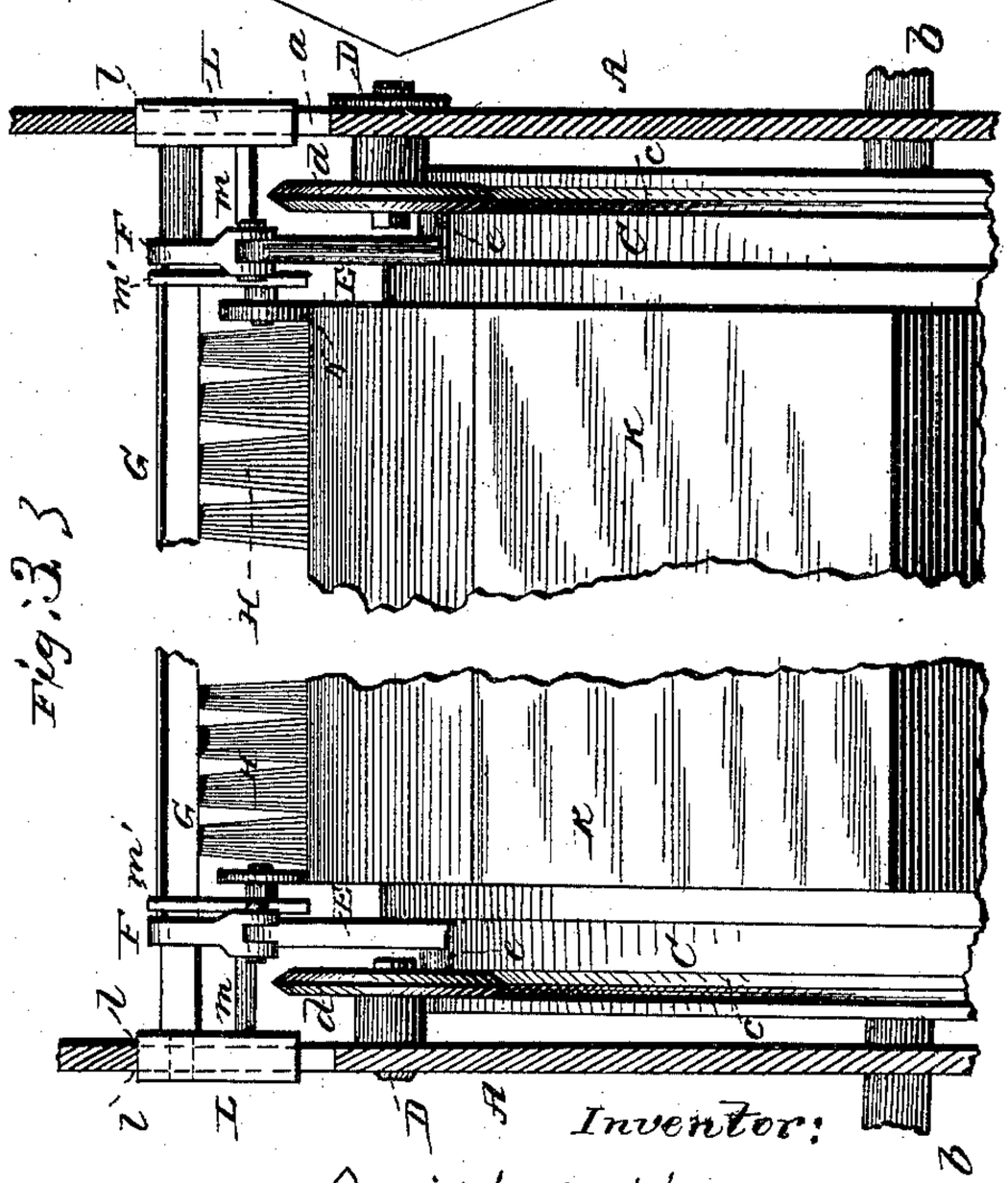


Fig. 3.



Witnesses:
W. E. Bowen.
Chas. R. Burr

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UNITED STATES PATENT OFFICE.

MILFORD HARMON, OF JACKSON, MICHIGAN.

MECHANISM FOR BRUSHING FLOUR-BOLTS.

SPECIFICATION forming part of Letters Patent No. 316,778, dated April 28, 1885.

Application filed December 15, 1882. Renewed October 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, MILFORD HARMON, 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 Mechanism for Brushing Flour-Bolts, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of a cylindrical reel having my invention applied thereto. Fig. 2 is an end elevation of the same enlarged, the shell or casing of the bolting-chest having been removed. Fig. 3 is a side elevation, partly broken away, of a many-sided reel having my invention applied thereto. Fig. 4 is an end elevation of Fig. 3 without the casing of the bolting-chest removed, and Fig. 5 is an end view of a polygonal reel and the adjacent portion of a bolt-chest.

Referring to Figs. 1 and 2, A A are the end walls of the bolting-chest.

B is a cylindrical reel having its shaft *b b* mounted in the bolt-chest; but, as the bolt-chest, the reel, and its driving mechanism may be of any usual or approved construction, these parts need not be specifically described.

C is a ring or flange projecting horizontally from the head of the reel, and provided on its periphery with a groove.

D is a stud-shaft projecting inwardly from the bolt-chest, and *d* is a friction crank-wheel mounted upon the inner end of stud-shaft D in such relation to the flange C that the edge of the friction crank-wheel travels in the groove *c*, and is pressed firmly into contact with the walls of said groove, so as to be rotated whenever the wheel revolves. By preference I provide the friction crank-wheel with an elastic tire, made of rubber or other suitable material, to increase the friction and insure the driving of said crank-wheel.

E is a pitman having its lower end attached to a crank-pin, *e*, of the crank-wheel, its upper end being connected to the free end of a rocking arm, F, the opposite end of which is firmly secured to the brush head or back G, which has its ends mounted in the ends of the casing A A′, so as to turn freely therein.

H represents the bristles of the brushes, arranged to traverse the bolting-cloth as the wheel revolves, and it will be readily understood that when the wheel is in motion the brush will have imparted to it a rocking motion, as indicated in dotted lines, Fig. 2. By these means the bolt-cloth will be brushed very effectually and its meshes kept open for the passage of such material as is desired shall pass through it.

In Figs. 3 and 4 I have shown a modification adapted for use in connection with the many-sided reel.

In these figures, K is a reel mounted on shaft *b*.

C *c* is a grooved flange; D *d*, stud-shaft and crank-wheel; E, pitman, and F rocking arm; G H brush and brush-back, these parts being substantially the same as the corresponding ones in Figs. 1 and 2.

In order to insure that the brush shall be maintained at all times in proper working relation to the many-sided reel, I employ the following devices at each end of the reel.

L is a sliding block arranged within the slot *a* in the end casing, A, and provided with projecting lips or flanges *l l*, which overlap the adjacent portions of the casing at the sides of the slot, and having also a suitable bearing for the end of the brush-head.

m m′ is a bearing-frame, the arm *m* being attached at one end to the sliding block L, and at its opposite end to the vertical arm *m′*, which at its upper end receives a rounded section of the brush-back.

N is a wheel mounted upon the lower end of vertical arm *m′*, and arranged to traverse the end of the many-sided reel or upon a track attached thereto and having a similar configuration.

It will be readily understood that as the reel revolves these devices will raise and lower the brush to correspond with the outline of the reel in cross-section. Thus it will be seen that the brush, when operated by the devices shown in Figs. 3 and 4, will not only have a rocking motion, but will be maintained in proper relation to the bolting-cloth on the many-sided reel.

It will also be understood that the ends of my brush-back are formed into pivots, and that the brush oscillates about such pivots in order to traverse the bolt-cloth alternately in

different directions, and that this pivoting of the brush is for an entirely-different purpose from the construction of devices which permit the brush as a whole to be moved toward and from the reel on radial lines, which is for another and distinct purpose—that is, to permit the angles of a many-sided reel to pass the brush without impinging too strongly upon the bristles. Therefore, the oscillating movement of the brush about its pivotal support and its movement as a whole toward and from the center of the reel are totally distinct from each other, so far as relates to the means for producing these movements, the object sought to be attained by them, or their functions.

I am aware that brushes have been employed to traverse the surface of a reel and other forms of flour-bolt, and that they have been so supported and operated as to move toward and from the center of the reel on radial lines, in order to maintain a proper working relation to the surface of the reel; but I believe I am the first to pivot the brush-back and use in connection therewith mechanism for oscillating the brush about its pivotal support in such manner as to sweep a moving bolting-surface; and I also believe that I am the first to so support and operate a brush adjacent to the outer surface of a many-sided reel or bolt, that the brush shall be moved toward and from the center of the reel to facilitate the movement of the reel-angles passing the brush, while at the same time the bristles have an independent movement over the bolting-surface, either in the same direction as the bolt-cloth is moving or in an opposite direction; hence I do not wish to be limited to the construction or combination of devices herein shown, as many modifications might be made without departing from the spirit of my invention.

It will also be seen that in all the constructions shown the traverse of the brush relative to the moving bolt-cloth is produced by devices operated from or through a wheel which traverses a track carried by the reel itself, or, what is substantially the same thing, by the reel.

I do not in this case claim anything except the inventions which are specifically set forth in the claims, reserving the right to claim all other patentable features shown or described herein in another application heretofore filed by me on September 23, 1882, Serial No. 72,575, of which this is a division.

What I claim is—

1. In combination with a bolting-reel, a brush arranged on a line substantially parallel with the axis of the reel, mechanism adapted to move the brush toward and from the bolt-cloth on a line substantially radial to the axis of the reel, and mechanism adapted to move the brush on lines substantially parallel with the surface of the reel, substantially as set forth.

2. In combination with a bolting-reel, a brush arranged on a line substantially parallel with the axis of the reel, mechanism adapted to move the brush-back from the center of the reel, and a mechanism adapted to move the brush alternately in the direction of travel of the reel and in an opposite direction, substantially as set forth.

3. In combination with a bolting-reel a brush arranged on a line substantially parallel with the axis of the reel mechanism operated by the reel and adapted to move the brush-back from the center of the reel, and mechanism adapted to move the brush alternately in the direction of travel of the reel and in an opposite direction, substantially as set forth.

4. In combination with a bolting-reel, a a brush arranged on a line substantially parallel with the axis of the reel, mechanism operated by the reel and adapted to move the brush-back from the center of the reel, and mechanism operated by the reel and adapted to move the brush alternately in the direction of travel of the reel and in an opposite direction, substantially as set forth.

5. The bolt, the rocking brush pivoted and sliding at each end at the vertical wall of the casing, in combination with the rocking arm, the pitman, and crank-wheel, substantially as set forth.

6. The bolt and the casing, the brush pivoted at each end and sliding upon the vertical wall of the casing, in combination with the wheel N, attached to the brush, and arranged to traverse the reel to maintain the brush in suitable working relation to the bolting-surface, substantially as set forth.

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

MILFORD HARMON.

Witnesses:
B. A. BRIGHAM,
F. K. BISER.