(No Model.) 3 Sheets—Sheet 1.

S. D. BARR.

FLOUR BOLT.

No. 515,812. Patented Mar. 6, 1894.

Fig. 1.

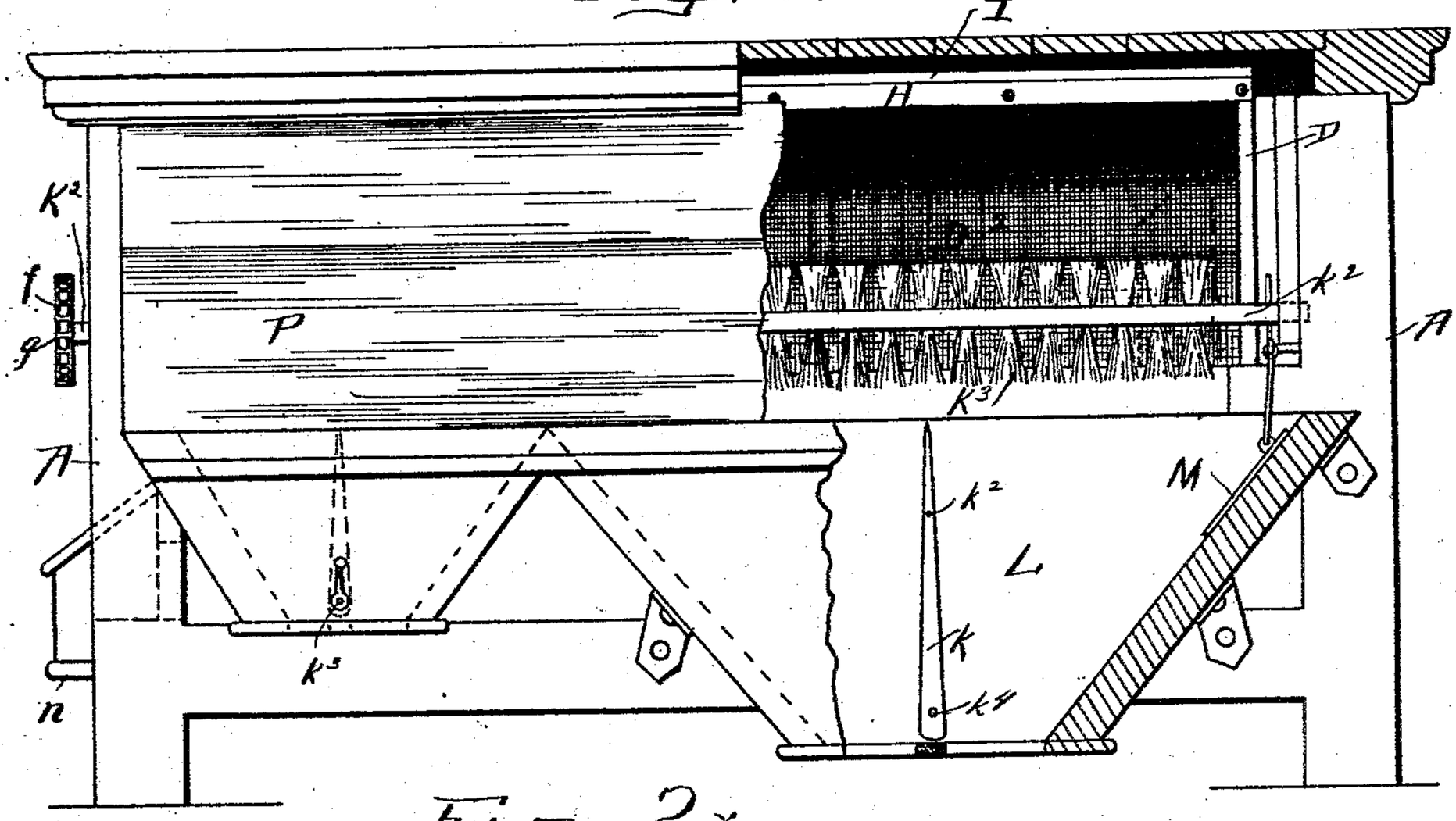

Fig. 2.

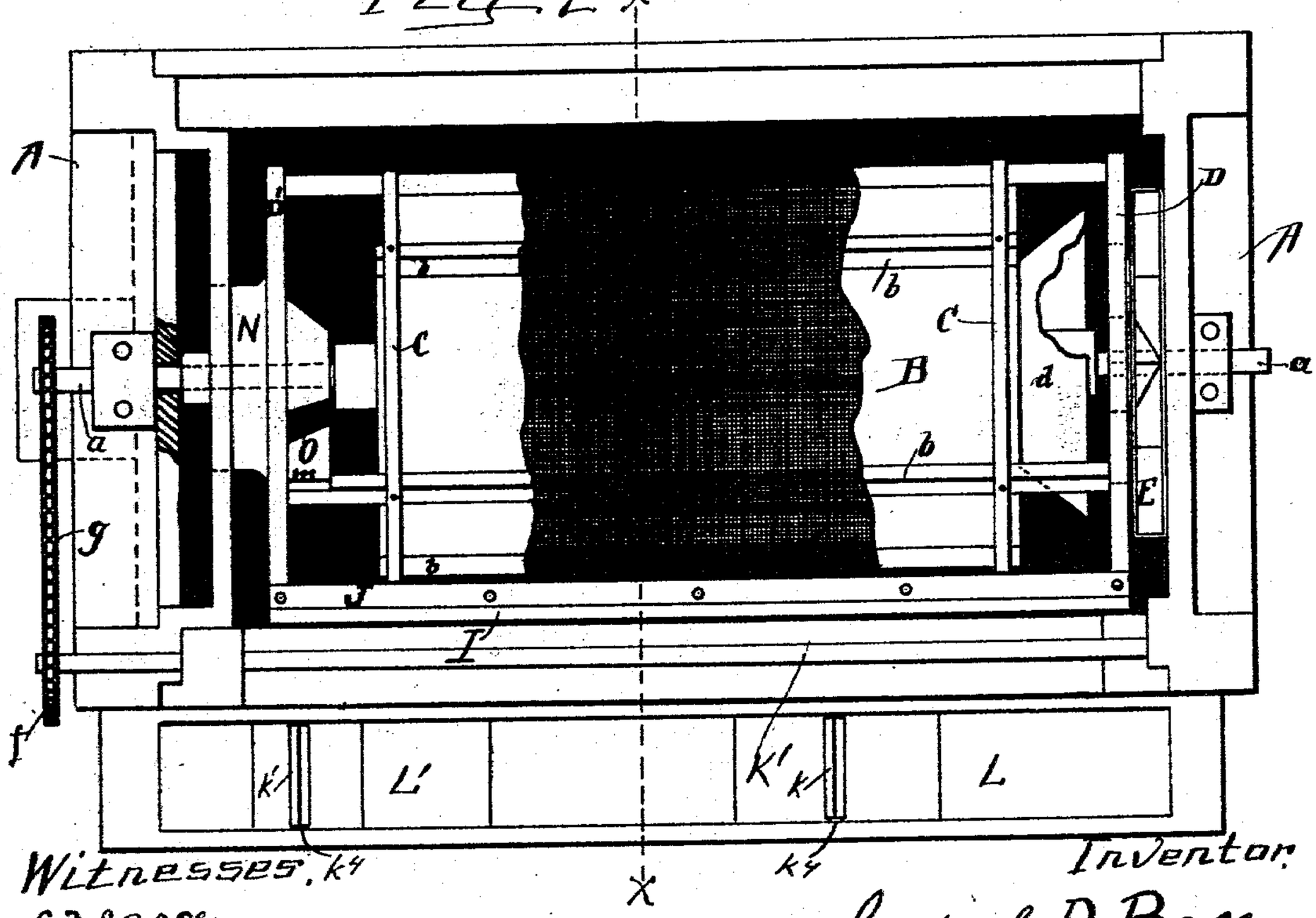

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Fig. 3.

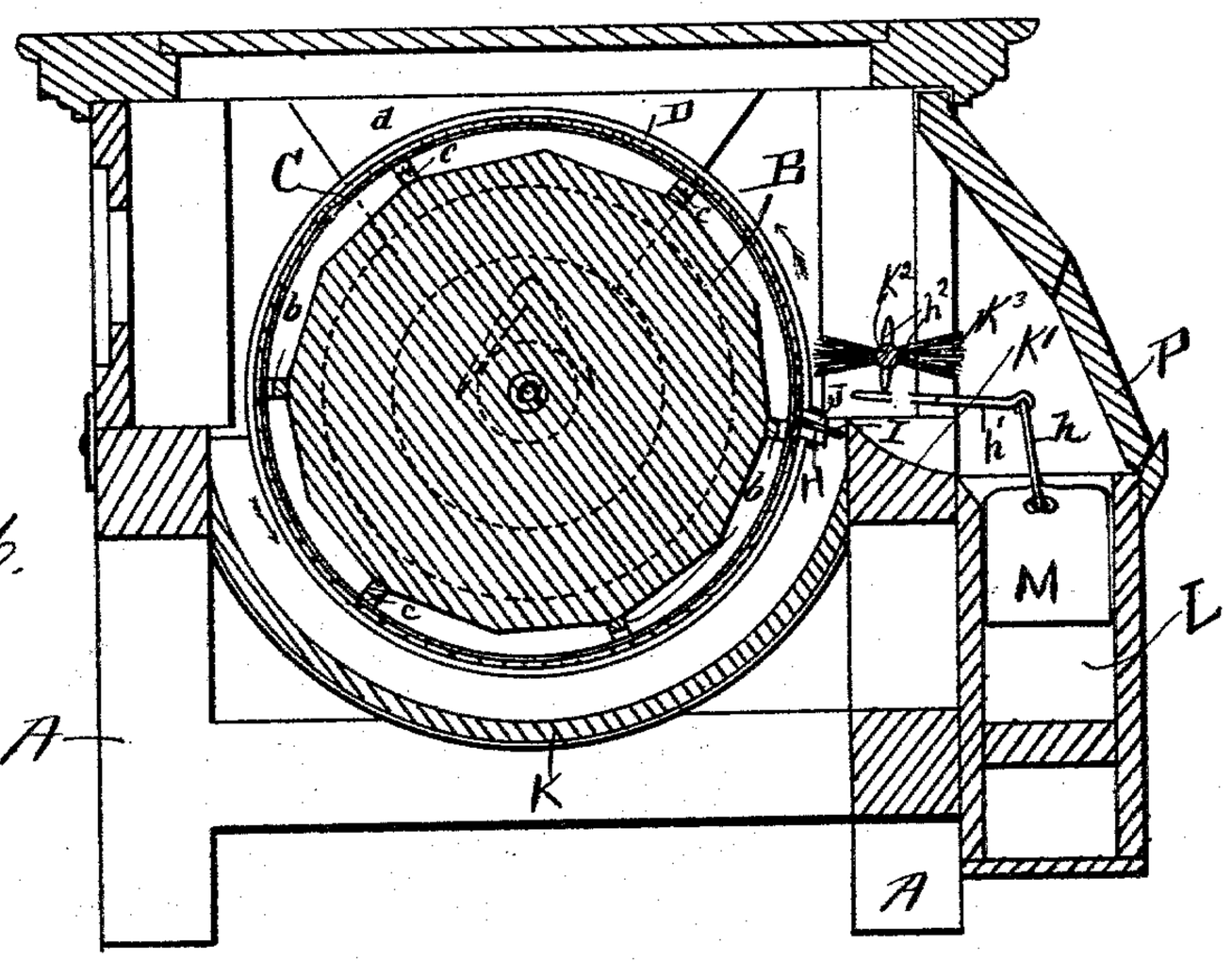


Fig. 6.

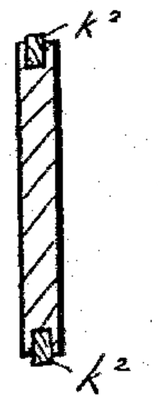


Fig. 4

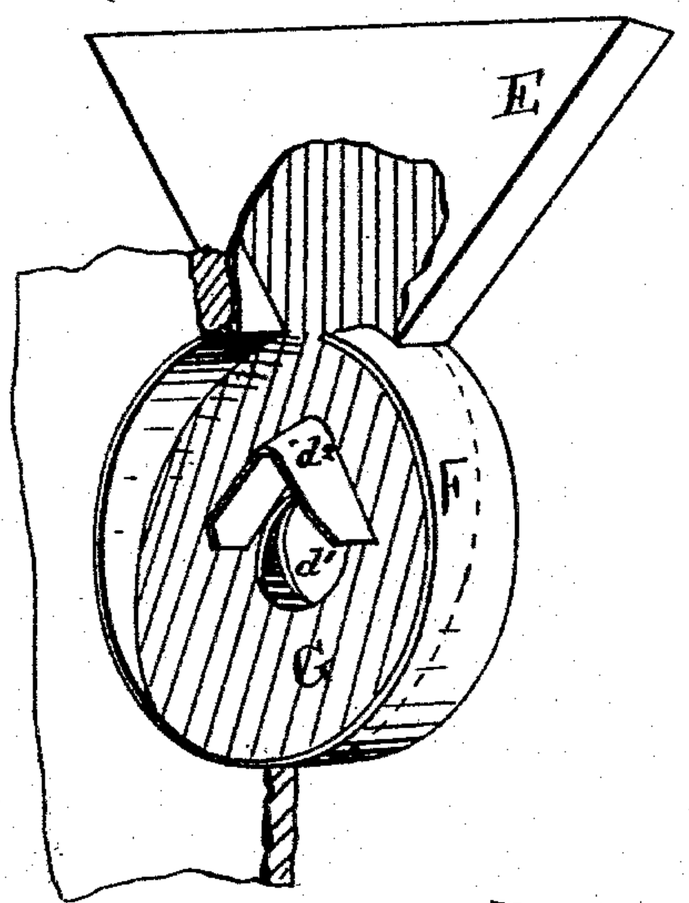


Fig. 5.

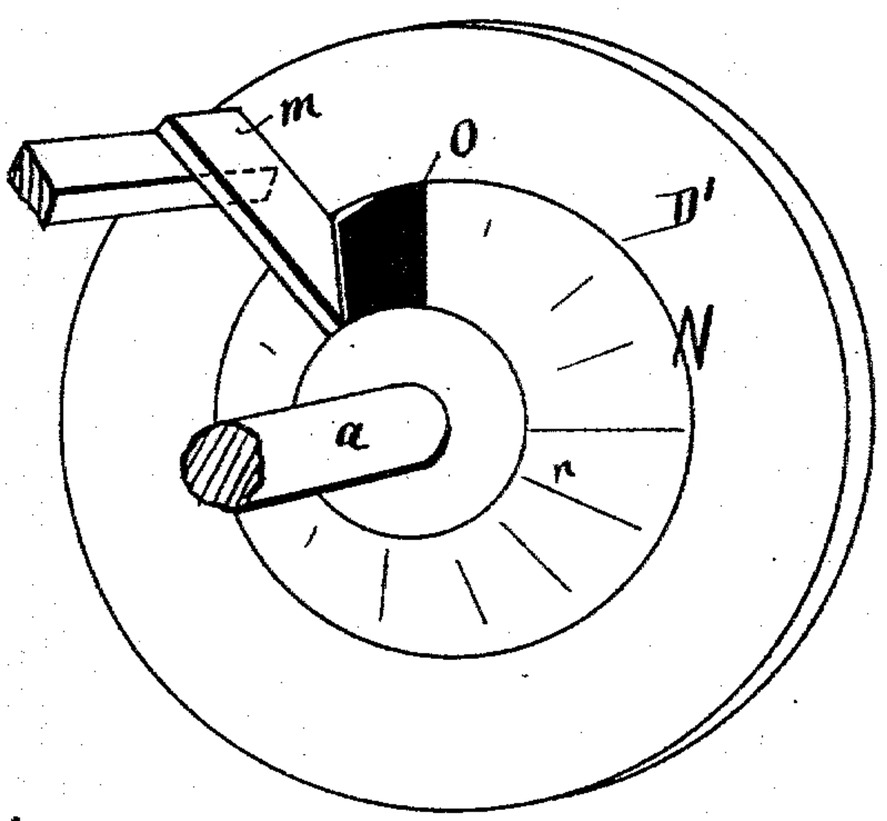


Fig. 7.

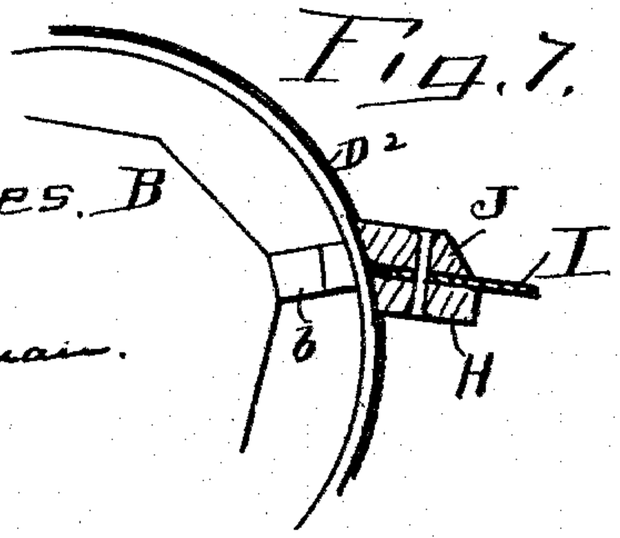
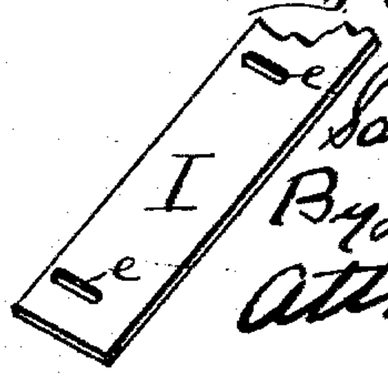


Fig. 8.



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(No Model.) 3 Sheets—Sheet 3.

S. D. BARR.

FLOUR BOLT.

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Fig. 9

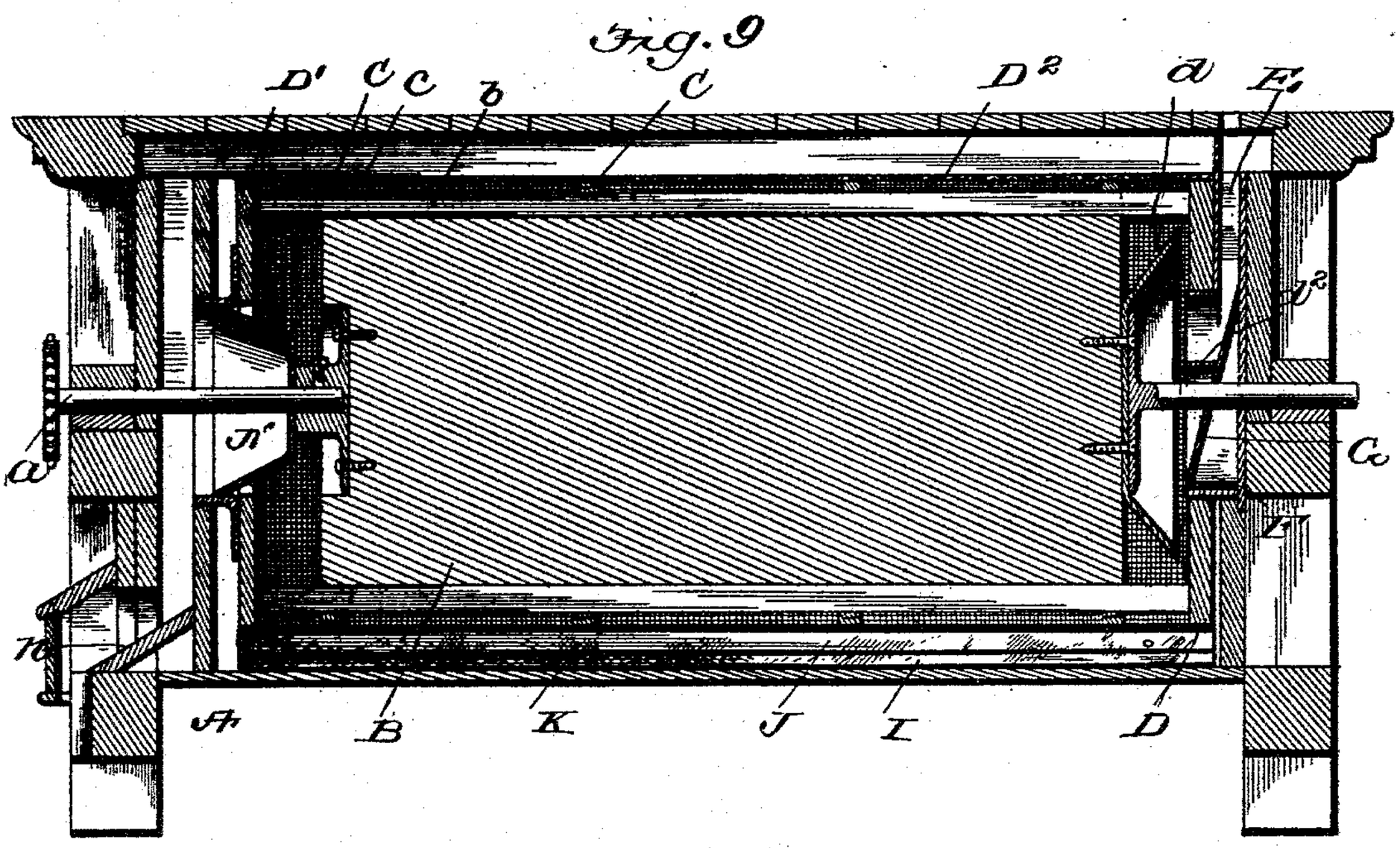
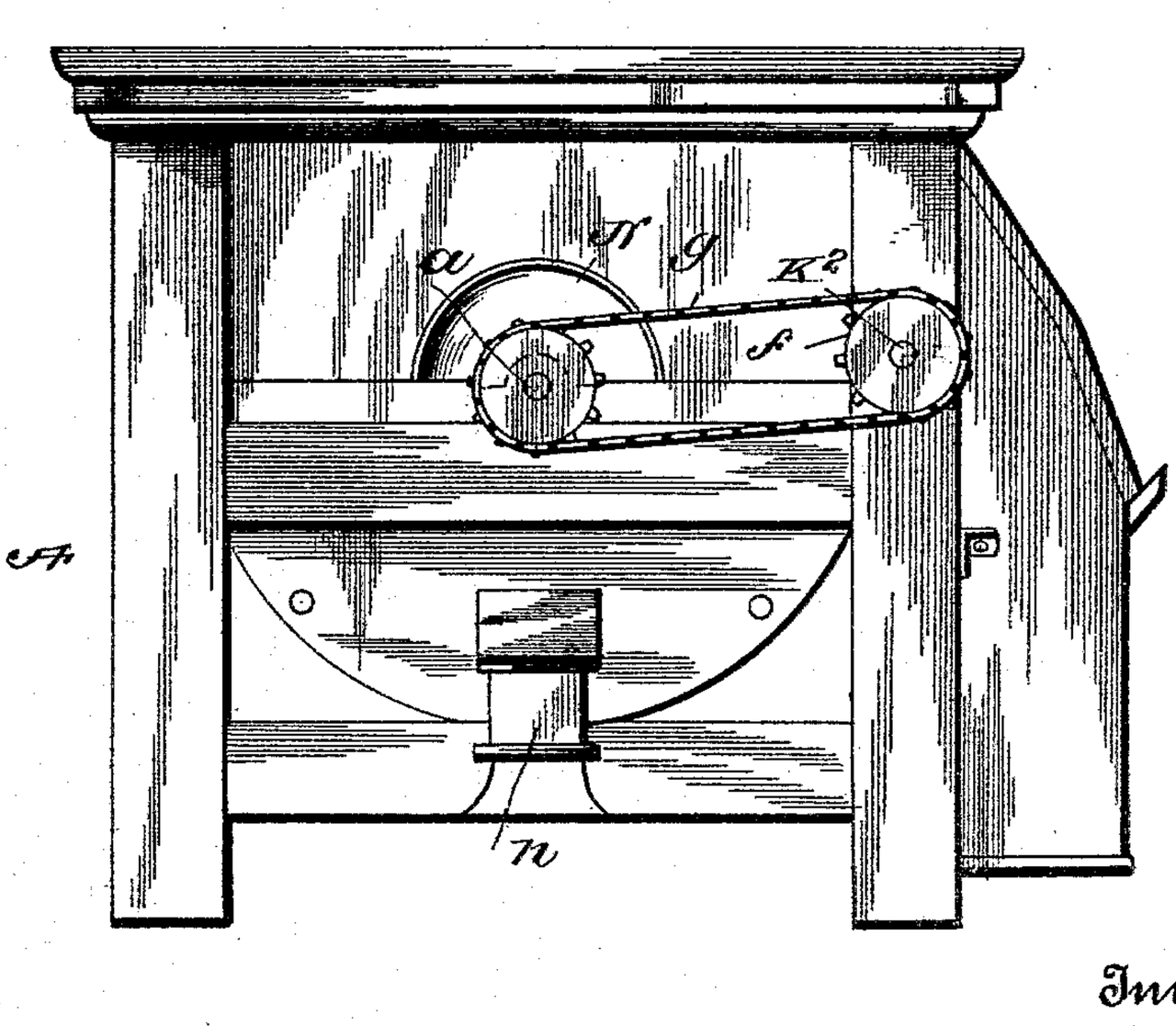


Fig. 10.



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UNITED STATES PATENT OFFICE.

SAMUEL D. BARR, OF MINERVA, OHIO, ASSIGNOR OF THREE-FOURTHS TO ELI L. MOTTS AND SYLVESTER GHARKY, OF SAME PLACE.

FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 515,812, dated March 6, 1894.

Application filed August 24, 1893. Serial No. 483,913. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL D. BARR, a citizen of the United States, residing at Minerva, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Flour-Bolts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1, is a side elevation, showing parts broken away to illustrate the position of the reel and its different parts. Fig. 2, is a top view, showing the top or cover removed and illustrating portions of the bolting cloth removed or broken away. Fig. 3, is a transverse section through line *x*—*x* Fig. 2 except that the cover is shown placed in proper position in this figure. Fig. 4, is a detached view of the stock feeding hopper. Fig. 5, is a detached view of the delivery end of the reel. Fig. 6, is a transverse section of one of the valves or separating blades. Fig. 7, is an enlarged view of the sweep-blade, illustrating its position with reference to the periphery of the reel proper. Fig. 8, is a detached view of the sweep-blade. Fig. 9 is a longitudinal vertical section. Fig. 10 is an end view, showing the rear end of the reel frame.

The present invention has relation to flour bolts, and it consists in the different parts, and combination of parts hereinafter described and particularly pointed out in the claims.

Similar letters of reference, indicate corresponding parts in all the figures of the drawings.

The object of the present invention is to provide a flour bolt and means for removing all of the flour and the different separations of wheat or stock, from the bolt proper, thereby leaving all of the different parts of the bolting machinery clean, and free from flour at the end of a run. With this object in view it will be understood that no flour is allowed to accumulate and become musty, and impregnated with worms to be mingled with the new flour at the beginning of a new run.

A further object of the present invention is to provide a means for conveying from the reel proper the finished flour and the different grades separated from the stock.

In the accompanying drawings A represents the frame, which is constructed in the ordinary manner, reference being had to properly attaching the different parts belonging to the reel proper. The frame A is constructed of a size to correspond with the size of the reel designed to be used. The shaft *a* is properly journaled to the frame A, and is provided with the cylinder B, which cylinder may be of the form shown or it may be of any other desired form. Upon the periphery of the cylinder B, are attached the ribs *b*, which ribs are located substantially as shown in the drawings. To the ribs *b* are attached the bands C said bands being held a short distance away from the ribs *b* by means of the interposed blocks *c* or their equivalents. It will be understood that the bands C should be covered with cloth for the purpose of preventing injury to the bolting cloth.

For the purpose of holding the disks D and D′ in proper position a sufficient number of the ribs *b* are extended a short distance beyond the ends of the cylinder B and said disks securely attached in any convenient and well known manner.

To the upper or feed end of the cylinder B is attached the funnel *d*, which funnel is located substantially as illustrated in Fig. 2, and as illustrated in said figure, the mouth of said funnel is located a short distance away from the inner face of the disk D.

For the purpose of conveying the stock between the cylinder B, and the bolting cloth D^2 the hopper E is provided, which hopper is located upon the outer side of the disk D, as illustrated in Fig. 2. Below the hopper E is located the flange F, which flange is received into an opening formed in the disk D, said opening being shown in Fig. 9.

For the purpose of shunting the stock into the funnel *d* the inclined plate G is provided, which plate is located, substantially as illustrated in Fig. 4. For the purpose of preventing the stock from falling upon the outer side of the disk D, and at the same time forming a cover for the opening *d*′, the hood d^2 is provided, which hood is attached to the in-

clined plate G. It will be understood that by providing the funnel *d*, and feeding the stock into the mouth of said funnel the stock will be thrown toward the disk D, thereby bringing the stock to the upper, or feed end of the reel proper. To the disks D and D′ is securely attached in any convenient and well known manner the bar H, which bar is located upon the outer side of the bolting cloth D^2. To the bar H is adjustably attached the sweep-blade I, which sweep blade is located substantially as illustrated in Fig. 7, and is preferably formed of rubber or like material, and as illustrated in Fig. 8 the sweep-blade I is provided with the elongated slots *e*, which elongated slots are for the purpose of adjusting the sweep-blade to or from the bolting cloth D^2. Upon the sweep-blade I is placed the bar J, which bar is located substantially as illustrated in Fig. 7, and as shown in said figure its outer edge is beveled for the purpose hereinafter described. Below the cylinder B and its different parts, is located the concave bottom K, which concaved bottom is the segment of a circle having a common center with the center of the cylinder B. The sweep-blade I is so adjusted that it will sweep the concaved bottom K as it revolves with the cylinder B, together with its different parts. For the purpose of causing the sweep-blade I to drag on the concaved bottom K said sweep-blade is inclined downward from a radial line as illustrated in Fig. 7. A further purpose of inclining the sweep-blade I, will hereinafter be described.

To the delivery side of the concaved bottom K is located the inclined ledge K′, which ledge is preferably concaved upon its upper side as illustrated in Fig. 3. Above the delivery ledge K′ is located the shaft K^2, which shaft is properly journaled to the frame A, and as shown in Figs. 1 and 3 the shaft K^2 is provided with the brushes K^3, which brushes are located as illustrated in Figs. 1 and 3. The brushes K^3 are so adjusted that they will sweep the bolting cloth D^2. A further purpose of the brushes K^3 is to sweep the sweep-blade I.

It will be understood that as the flour is sifted through the bolting cloth D^2, it will fall upon the concaved bottom K, and as the blade I sweeps said concaved bottom it will gather the flour upon the sweep blade I and elevate the same, as the sweep-blade revolves, thereby bringing the flour opposite the ledge K′. At the time the sweep-blade I reaches the ledge K′ the brushes K^3 will sweep the flour from the sweep-blade. For the purpose of causing the brush K^3 to properly act upon the sweep-blade I the shaft K^2 is so timed that the inner section of said brush will strike the sweep-blade as the shaft K^2 revolves; rotary motion being communicated to the shaft K^2 and its brush by means of the sprocket wheel *f* and the drive chain *g*. It will be understood that by inclining the sweep-blade I as illustrated in Fig. 7 said sweep-blade will be inclined downward toward the ledge K′ at the time said sweep-blade reaches said ledge, thereby bringing said sweep-blade in proper position to be delivered of its load by means of the brush K^3. It will also be understood, that by beveling the outer edge of the bar J the flour will be easily removed from said bar.

To the side of the ledge K′, and below said ledge are located any desired number of chambers such as L and L′, said chambers being for the purpose of receiving the different grades of flour.

It will be understood, that after the different grades of flour have been delivered into the chambers, they are to be conveyed through ordinary conduits to any desired point or points. In the construction of reels of considerable length the inclined end of the chamber L would necessarily be less steep or in other words the inclination would not be as great as the inclination in shorter reels.

For the purpose of preventing flour from lodging upon the inclined end of the chamber L the reciprocating board or plate M is provided; reciprocating motion being communicated to the board or plate M by means of the pivoted arm *h*, the lever *h′*, and the tappets h^2. It will be understood that the weight of the board or plate M will have a tendency to elevate the inner end or portion of the lever *h′*, thereby holding that lever in operative contact with the tappets h^2. The object and purpose of providing the tappets are to give to the board or plate M, two distinct movements to one revolution of the shaft K^2.

For the purpose of gaging the different grades of flour and other divisions of the stock the valves *k* and *k′* are provided, said valves being located in the chambers L and L′. For the purpose of holding the valves *k* and *k′* at any desired point of adjustment the edges of said valves, are provided with rubber strips such as k^2, which strips are so adjusted that they will press or bear against the inner sides of the chambers L and L′. It will be understood, that each of the valves *k* and *k′* should be provided with an operative handle such as k^3, so as to provide a means for adjusting said valves. It will be understood that the valves *k* and *k′* are to be pivotally attached at their bottom or lower ends by means of the cross rods k^4. In the drawings I have shown but two chambers, and two valves, so arranged and adjusted that four divisions of the stock can be made; but it will be understood that the number of chambers and valves may be increased without departing from the nature of my invention.

To the disk D′ is attached the collar N, the inner portion of which is cone shaped as illustrated in Figs. 2 and 5; and as shown the inner portion is provided with the opening O, to the side of which opening is located the flange *m*, said flange being securely attached

in any convenient manner to the inner-face of the disk D'. The object and purpose of providing the opening O and the flange *m* are to provide a means for conveying the tailings or bran to the delivery spout *n*. It will be understood that as the flange *m* revolves with the disk D' and its different parts said flange will elevate the bran so as to convey it to the opening O, after which it is conveyed through the collar N. The object and purpose of forming the inner portion of the collar N cone shaped are to prevent the accumulation of bran upon said collar.

For the purpose of providing a means for inspecting the inside of the frame and its different parts the door P is provided, said door being inclined as illustrated in Fig. 3, and is so adjusted that it can be easily removed, thereby providing a means for permitting an overflow in case the reel proper should become choked. It will be understood that the pressure of the stock upon the inner side of the door will press the door outward, and permit the stock to overflow.

In Fig. 2 the brush K^3 is not shown, said brush being omitted for the purpose of better illustrating the position of the sweep-blade, when it arrives at the point to be delivered of its load, also showing the location of the ledge K'. By inclining the sweep-blade I together with the bars H and J downward from a radial line through the reel, said parts will be inclined from the bolting cloth toward the ledge K' at the time said parts are at a point opposite said ledge, thereby bringing the sweep-blade together with its attaching bars in proper position to be delivered of its load by means of the brush K^3.

For the purpose of timing the brush K^3 the sprocket wheels *f* are formed of one size, and each is provided with an equal number of teeth, thereby causing the reel and brush to rotate in unison.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a suitable frame, having located therein a revolving reel, the disks D and D', having fixed thereto the bar H, the sweep-blade I, provided with the elongated slots *e*, the beveled bar J, located adjacent to said sweep-blade, a revolving brush, the ledge K', the chambers as L and L', and valves located in said chambers, substantially as and for the purpose set forth.

2. The combination of a suitable frame, having located therein a revolving reel, a sweep-blade, located upon the outside of the bolting cloth, the concave bottom K located below the reel, the ledge K', the shaft K^2, provided with the tappets h^2, the lever h' the link *h*, and the board or plate M located in a chamber as L, substantially as and for the purpose set forth.

3. The combination of a frame, a shaft having mounted thereon a cylinder provided with ribs *b*, the rings C, the bolting cloth D^2, the disk D, the hopper E located upon the outside of the disk D, the inclined plate G, located below the hopper, the funnel *d*, and the flange F extended through the disk D, substantially as and for the purpose specified.

4. The combination of the frame having located therein a revolving reel provided with a sweeping blade located upon the outside of the bolting cloth, a concave located below the reel, the brush K^3, the ledge K', the sprocket wheel *f* and the drive chain *g*, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

SAMUEL D. BARR.

Witnesses:
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HOWARD W. SPEAKMAN.