No. 771,074. PATENTED SEPT. 27, 1904.

L. JONES.

CLOTH CLEANING BRUSH FOR FLOUR BOLTING MACHINES.

APPLICATION FILED DEC. 9, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

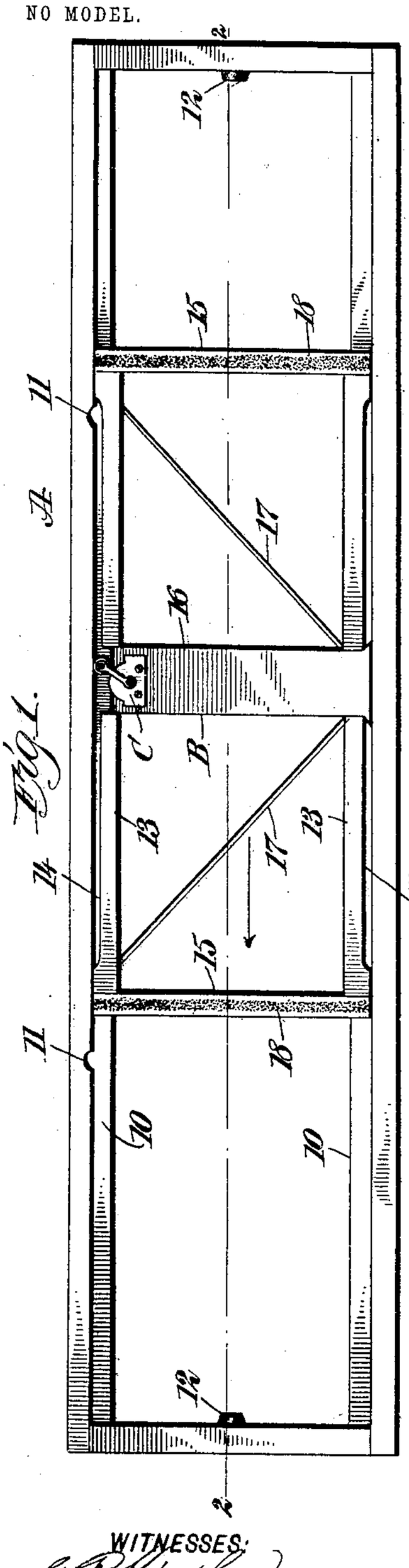

Fig. 1.

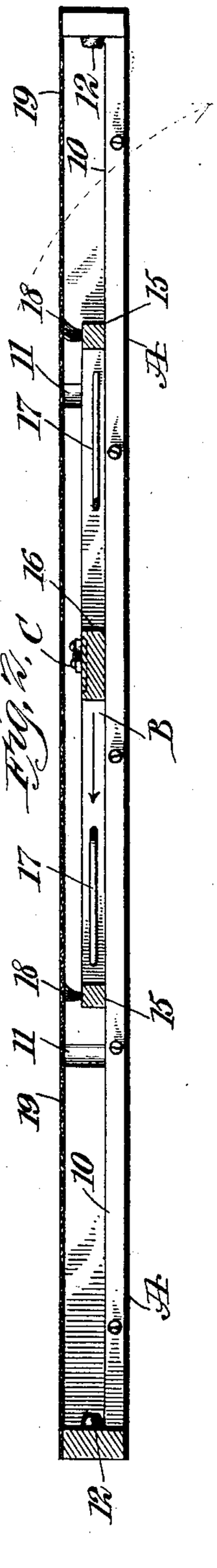

Fig. 2.

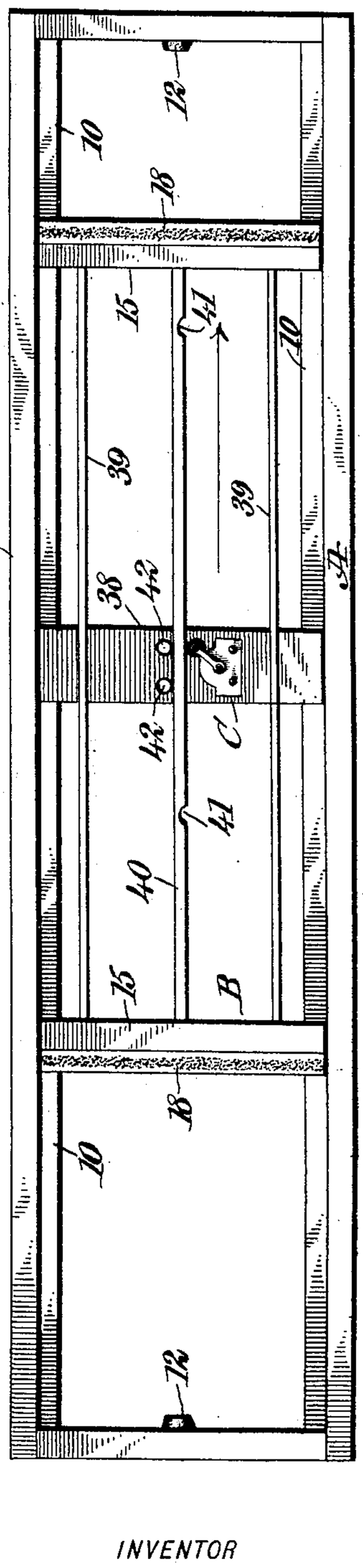

Fig. 3.

WITNESSES:

G. P. Kingsbury.

Wedderburn

INVENTOR

Lulie Jones

BY Munn & Co

ATTORNEYS

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Fig. 4.

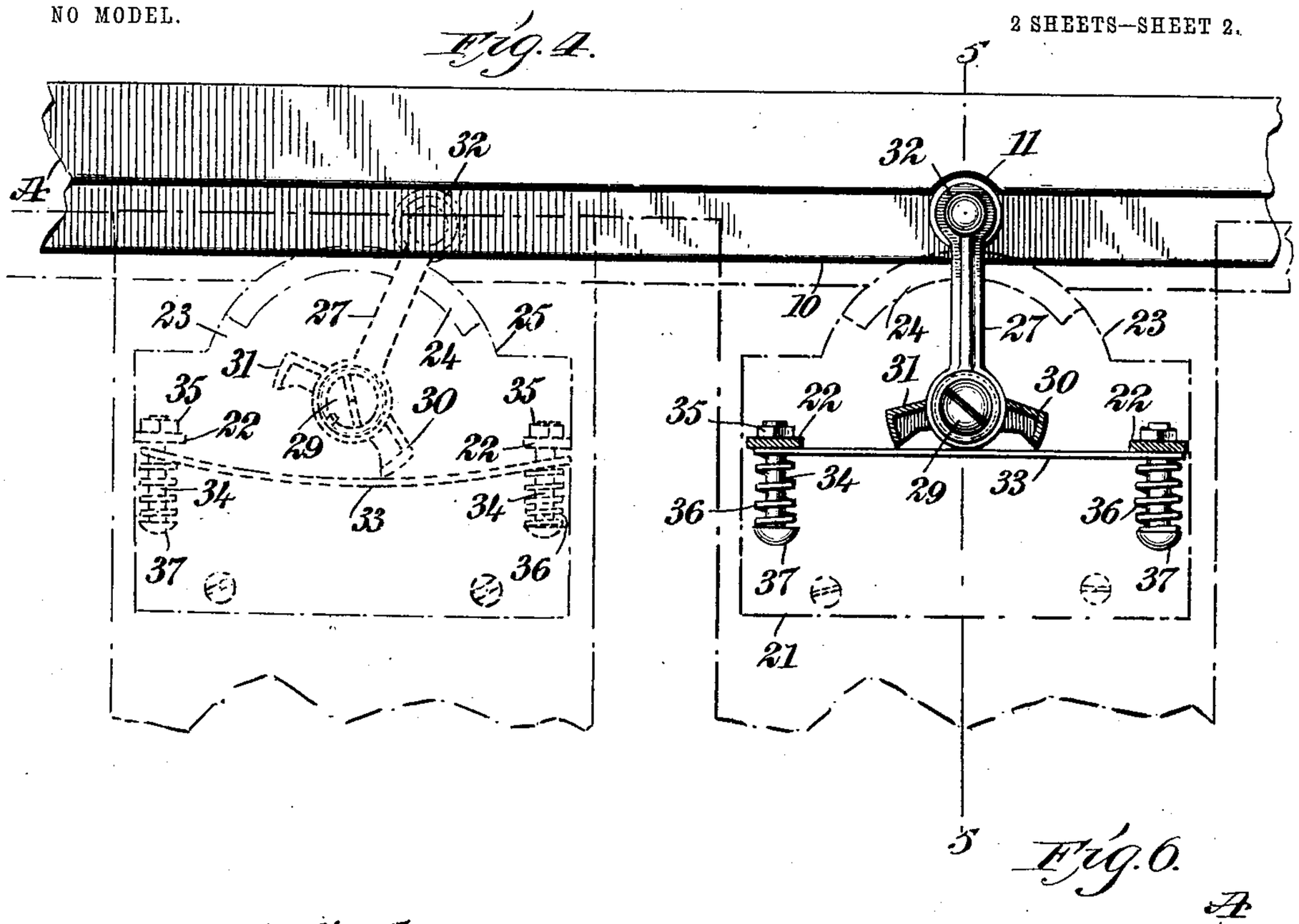
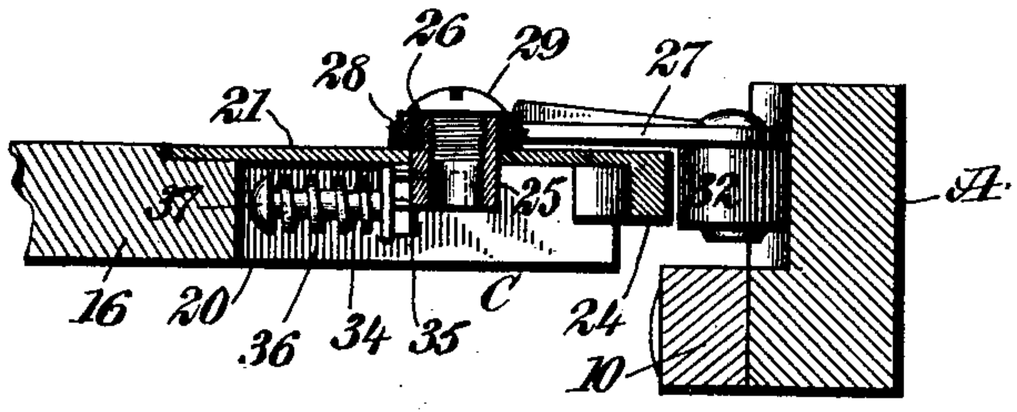


Fig. 6.

Fig. 5.



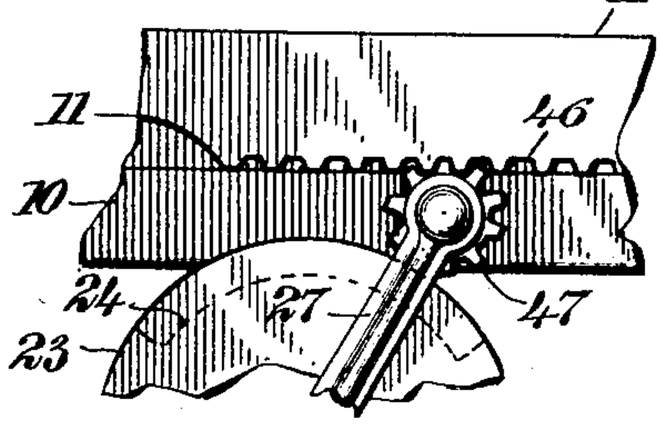
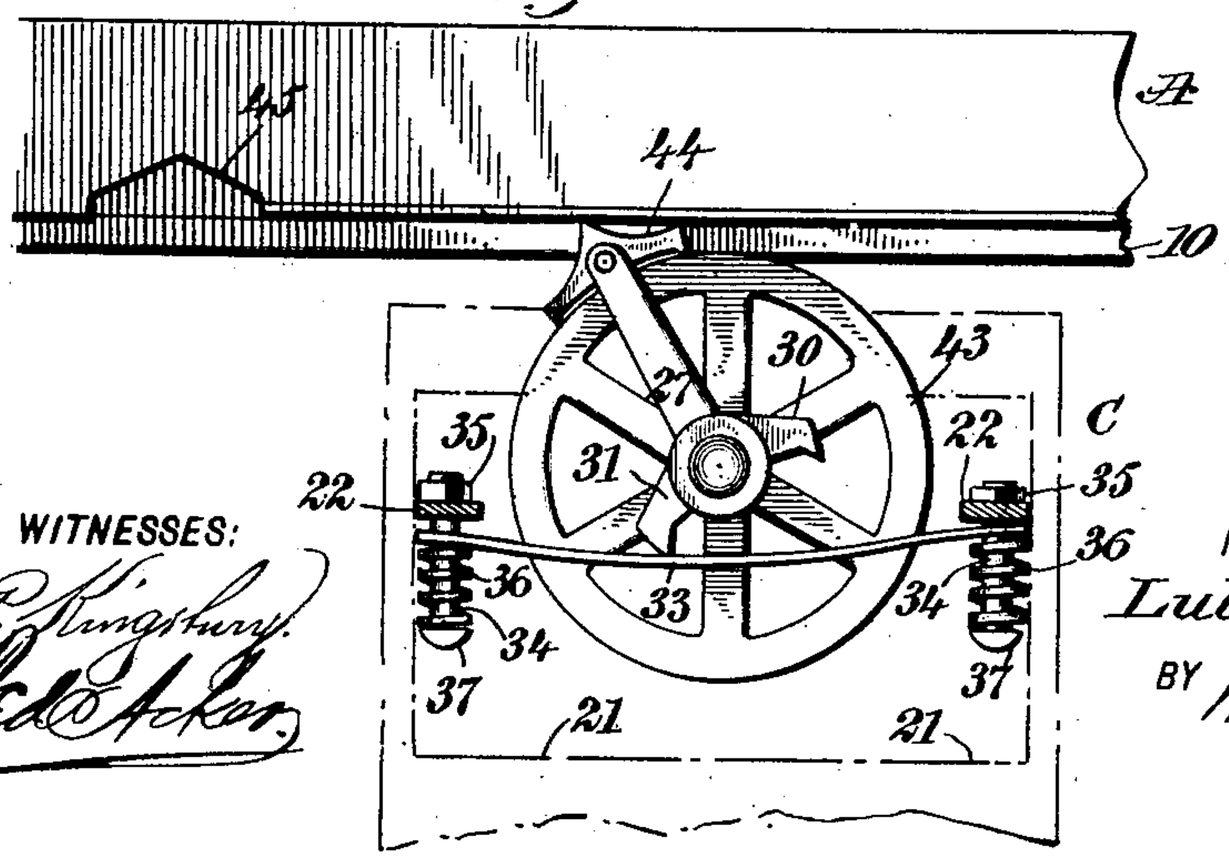


Fig. 7.



WITNESSES:

G. P. Kingsbury.

J. Fred. Acker.

INVENTOR

Lulie Jones

BY Munn & Co

ATTORNEYS

PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 771,074. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

LULIE JONES, OF COLUMBUS, OHIO.

CLOTH-CLEANING BRUSH FOR FLOUR-BOLTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 771,074, dated September 27, 1904.

Application filed December 9, 1903. Serial No. 184,427. (No model.)

To all whom it may concern:

Be it known that I, LULIE JONES, a citizen of the United States, and a resident of Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Cloth-Cleaning Brushes for Flour-Bolting Machines, of which the following is a full, clear, and exact description.

My invention relates to an improvement in flour-bolting machines having gyratory motion; and the purpose of the invention is to supply each sieve having a cloth with an independent cleaner.

Another purpose of the invention is to provide each sieve with an automatically-operating brush which derives its impetus from the motion of the sieve-box, the same being propelled backward and forward by the arrangement of its mechanism so as to subject the entire surface of the bolting-silk to the continual action of a brush or brushes, which brushes may be sustained in position by bolts and springs or other suitable devices.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the sieve-framing, the bolting-cloth having been removed, and a plan view of the brush for the bolting-silk, the detent mechanism for the brush-frame being shown attached to the frame, the said detent mechanism serving to prevent the brush-frame from moving in a direction contrary to that required. Fig. 2 is a longitudinal section taken practically on the line 2 2 of Fig. 1, the bolting-silk being shown in position on the sieve-frame and the brush in engagement with the silk. Fig. 3 is a view similar to Fig. 1, the detent mechanism, however, being shown carried by the sieve-frame and as acting on the brush-frame. Fig. 4 is an enlarged plan view of a side portion of a sieve-frame and a sectional plan view of the said detent mechanism, which detent mechanism is illustrated in two positions. Fig. 5 is a section taken practically on the line 5 5 of Fig. 4. Fig. 6 is a plan view of one side portion of the sieve-frame, illustrating a slight departure in the construction of the detent mechanism; and Fig. 7 is a view similar to Fig. 6, illustrating another form of the said detent mechanism.

A represents a sieve-frame, which is provided upon the inner face at each side at its lower portion with a track 10, and in one side of the said frame above the said track two recesses 11 are made, preferably, semicircular. These recesses or depressions 11 are at equal distances from the ends of the frame A and also preferably are at equal distances from the center of the frame. At each end of the said frame a buffer 12 is located at the inner faces of the frame, as is shown in Figs. 1, 2, and 3.

The brush-frame B is adapted to travel from end to end of the sieve-frame and under the construction shown in Figs. 1 and 2 consists of end bars 15, which slide on the tracks 10, side bars 13, preferably provided with recesses 14 in their outer edges in the interest of lightness, and a central cross-bar 16, upon which cross-bar at that end which is adjacent to the recessed side of the sieve-frame a detent mechanism C is located. The said brush-frame is shown strengthened by diagonal braces 17; but the construction of the brush-frame may be varied as occasion may demand. At each end of the brush-frame a brush material 18—bristles, for example—is secured, and this brush material is adapted as the brush-frames move from end to end of the sieve-frame to engage with the under face of the bolting-silk 19, which is attached to the upper face of the sieve-frame, as is illustrated in Fig. 2.

The detent mechanism is shown in detail in Figs. 4 and 5, and where the detail mechanism is located on the cross-bar 16 of the brush-frame an opening 20 is formed, as is shown in Fig. 5. This opening is covered at the top by a plate 21, provided with downwardly-extending lugs 22 and with a central segmental projection 23 at its outer end. This projection is of sufficient dimensions to ex-

tend practically to the track 10 at the recessed side of the sieve-frame, the side bar at the corresponding side of the brush-frame being recessed at its upper central portion, as is shown in Fig. 1. Also, preferably, a downwardly-extending flange 24 is formed at the marginal portion of the said segmental extension 23 of the plate 21. A tubular pin 25 is mounted to turn in the plate 21 at the center of the arc of the circle on which the segmental projection 23 is formed, which tubular pin is best shown in Fig. 5. This pin is provided at its outer face at the point where it extends above the plate 21 with a flat surface 26. The said pin 25 is adapted to receive a correspondingly-shaped eye 28, formed at the end of an arm 27, which arm is of sufficient length to extend beyond the projection 23 from the plate 21 and turns with the said pin 25. The arm 27 is prevented from leaving the pin by means of a screw 29, which is entered at the upper portion of the tubular pin 25, and washers are generally placed between the upper surface of the plate 21 and the eye of the arm 27 and the upper portion of the said eye and the head of the screw 29, as is also shown in Fig. 5. The said tubular pin 25 at its lower portion is provided with two inwardly-extending lugs 30 and 31, which are carried from opposite sides of the said pin, as is illustrated in Fig. 4, and at the outer or free end of the arm 27 a friction-roller 32 is mounted to turn, being located beneath the under face of the said arm, and in one position of the brush-frame the roller 32 is adapted to enter either one or the other of the recesses 11 in the sieve-frame; but during the movement of the brush-frame in the sieve-frame the roller 32 engages with the inner face of the recessed side of the sieve-frame above the track 10. The lugs 30 and 31 of the arm 27 are in constant engagement with a preferably flat or strap spring 33, which is straight when the roller of the arm 27 is in a recess 11, as is shown by positive lines in Fig. 4, but which is inwardly curved after the roller leaves a recess 11, as is shown by dotted lines in the same figure. The ends of the spring 33 are supported by passing pins 34 through suitable apertures in the end portions of the spring and through apertures in the lugs 22 from the plate 21, as is shown in Figs. 4 and 5, and auxiliary springs 36 are coiled around the pins 34 between their heads 37 and the back or inner surface of the strap-spring 33. The pins 34 are held in place by suitable nuts 35, screwed thereon at the outer faces of the lugs 22, as is shown in Fig. 4.

In the operation of a brush constructed as described by reason of the gyratory motion of the sieve-frame A (indicated by the dotted arrow in Fig. 2) the brush-frame is compelled to travel alternately from end to end of the sieve-frame, and when the brush-frame is at the end of its stroke it will be in engagement with one of the buffers 12, and the roller 32, carried by the arm 27, will be in the recess 11 of the sieve-frame adjacent to that end, the arm 27 occupying at such time a position at right angles to the side of the sieve-frame, as is illustrated by positive lines in Fig. 4, and at such time the springs 33 and 36 will be inactive. At the next throw of the sieve-frame, however, the roller 32 will leave the recess 11 in which it was entered, and the arm 27, carrying the roller, will be at an acute angle to the recessed side of the sieve-frame, as is indicated by dotted lines in Fig. 4, and at such time the roller will be in engagement with the inner face of the recessed side of the sieve-frame above the track 10, and one of the lugs 30 or 31, carried by the arm 27, will have forced the main or strap spring 33 inward, as is shown by dotted lines in Fig. 4, and this spring serves to keep the roller in engagement with the plain side surface of the sieve-frame until the next recess 11 is reached. The inclination of the arm 27 is in an opposite direction to the direction of travel of the brush-frame, so that the brush-frame is free to move in the sieve-frame in the proper direction, but cannot have backward movement, as if the tendency is in that direction the friction-roller will crowd between the side of the sieve-frame and the flange 24 on the segmental extension 23 of the plate 21. Thus it will be observed that at each movement of the sieve-frame the brush-frame is compelled to travel the full length of the sieve-frame and that the bristles or brush material 18 will thoroughly clean the bolting-cloth, as the brush-frame is of such dimensions that the brush material at one end of the frame will clean the bolting-silk from its center to one end and the brush material at the opposite end of the brush-frame will clean the said silk from the center to the opposite end.

In Fig. 3 I have illustrated a slight departure in the invention, inasmuch as the detent mechanism C is located on a cross-bar 38, extending from track to track of the sieve-frame at its center, and the brush-frame B consists of the end bars 15, carrying the brush material 18; but the braces 17 and the central cross-bar 16 are omitted, and instead the end bars 15 are connected by rods 39 near their ends and an intermediate bar 40, in which bar 40 recesses 41 are made corresponding to the recesses 11 in the sieve-frame shown in Fig. 1, as when the brush-frame is made as shown in Fig. 3 the recesses are omitted from the side of the sieve-frame. The roller 32 of the arm 27 engages with the recessed edge of the intermediate bar 40, and as the brush-frame completes its travel in one or the other direction the roller will enter one or the other of the recesses 41. The action of the detent mechan-

ism of the brush-frame when placed as shown in Fig. 3 is practically the same as when placed as shown in Fig. 1.

In order that the movement of the brush-frame under the form of construction shown in Fig. 3 may be made with the least possible amount of friction, friction-rollers 42 are carried by the cross-bar 38 of the sieve-frame, arranged to engage with the plain longitudinal edge of the centrally-recessed bar of the brush-frame.

In Fig. 7 I have illustrated a slight departure in the construction of the detent mechanism in that a wheel 43 is mounted on the pivot-pin 25, adapted for engagement with the inner longitudinal face of the track 10 of the sieve-frame; but instead of the roller 32 being at the outer end of the arm 27 a dog 44 is substituted, being pivotally attached to the arm 27 and so shaped as to extend beyond the sides of the arm, being provided with a point at its center. This dog when the brush-frame is at the end of its stroke is adapted to enter recesses 45 in the side of the sieve-frame shaped correspondingly to the shape of the said dog.

If the brush-frame is very heavy, it may travel too rapidly, and in order to regulate the movement of such heavy brush-frame the detent mechanism is formed as is shown in Fig. 6, wherein it will be observed that instead of the roller 32 at the end of the arm 27 a pinion 47 is substituted, and this pinion is adapted to engage with rack-teeth 46, formed in the recessed edge of the sieve-frame.

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

1. In flour-bolting machines, a sieve-frame, a brush-frame mounted to slide in the sieve-frame and provided with brush material, a pivoted arm carried by one of said frames, a detent at the free end of said arm and arranged to bind against the other frame to prevent a backward movement of the brush-frame when driven in a given direction, lugs at the pivoted end of said arm and a spring adapted to be placed under tension by one or other of said lugs, as set forth.

2. In flour-bolting machines, a sieve-frame, a brush-frame mounted to slide in the sieve-frame, and a detent mechanism comprising a plate, an arm pivoted to the plate, opposing lugs connected with one end of the arm to move therewith, a pivoted detent at the other end of the arm, a flat spring adapted to be placed under tension by one or the other of said lugs, and auxiliary springs, supporting the ends of the said flat spring, as set forth.

3. In flour-bolting machines, a sieve-frame, a brush-frame mounted to slide in the sieve-frame, and an automatically-operating detent mechanism for the brush-frame, comprising a plate having downwardly-extending lugs, an arm pivoted to the plate, opposing lugs at one end of the arm, a pivoted detent at the other end of the arm, a flat spring adapted to be placed under tension by one or the other of the lugs at the end of said arm, pins extending through apertures in the end portions of the spring and through apertures in the said downwardly-extending lugs on the plate, and auxiliary springs coiled around the said pins and located between the heads of the pins and the said flat spring, as set forth.

4. In flour-bolting machines, a sieve-frame, a brush-frame mounted to slide in the sieve-frame, and an automatically-acting reversible detent mechanism for the brush-frame, comprising a plate carrying a segmental member, an arm pivoted in the plate at the center of the arc of said segmental member, opposing lugs at one end of the arm, a pivoted detent at the other end of the arm, and a spring adapted to be placed under tension by one or the other of the lugs of said arm, as described.

5. In flour-bolting machines, a sieve-frame, a brush-frame mounted to slide in the sieve-frame, a pivoted arm carried by one of said frames, a pivoted detent at one end of said arm, oppositely-extending lugs connected with the other end of said arm, and a spring adapted to be placed under tension by one or the other of said lugs, to hold the arm at an acute angle to the side of the other frame with the pivoted detent in engagement with said frame, the inclination of the arm being in an opposite direction to the line of travel of the brush-frame, the frame engaged by the pivoted detent having recesses adapted to be entered by the said detent when the brush-frame is at the end of its stroke in either direction for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LULIE JONES.

Witnesses:
R. W. McCoy,
Mason Snow.