

(No Model.)

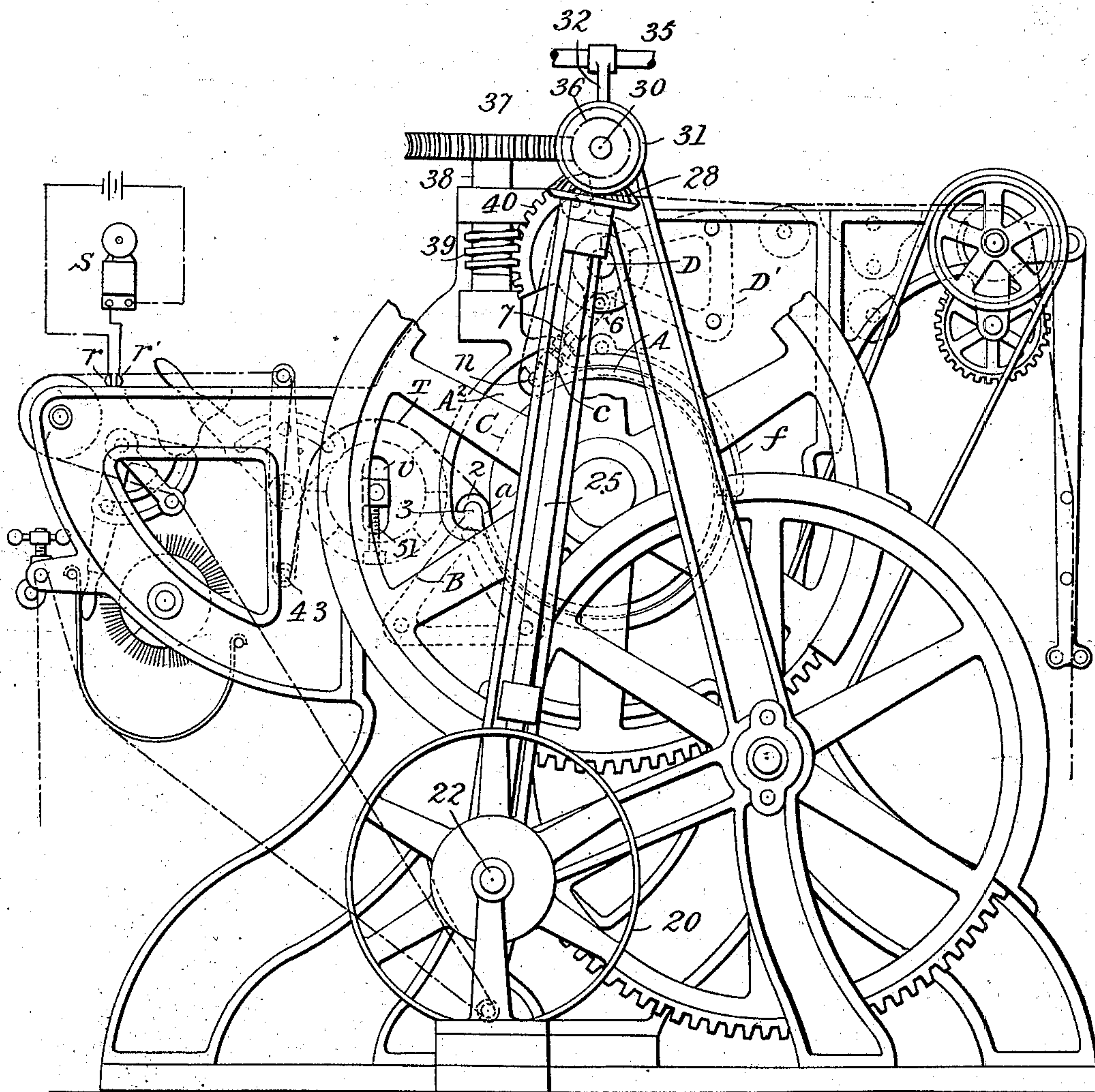
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G. W. MILLER.  
CLOTH PRESSING MACHINE.

No. 560,733.

Patented May 26, 1896.

Fig 1.



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(No Model.)

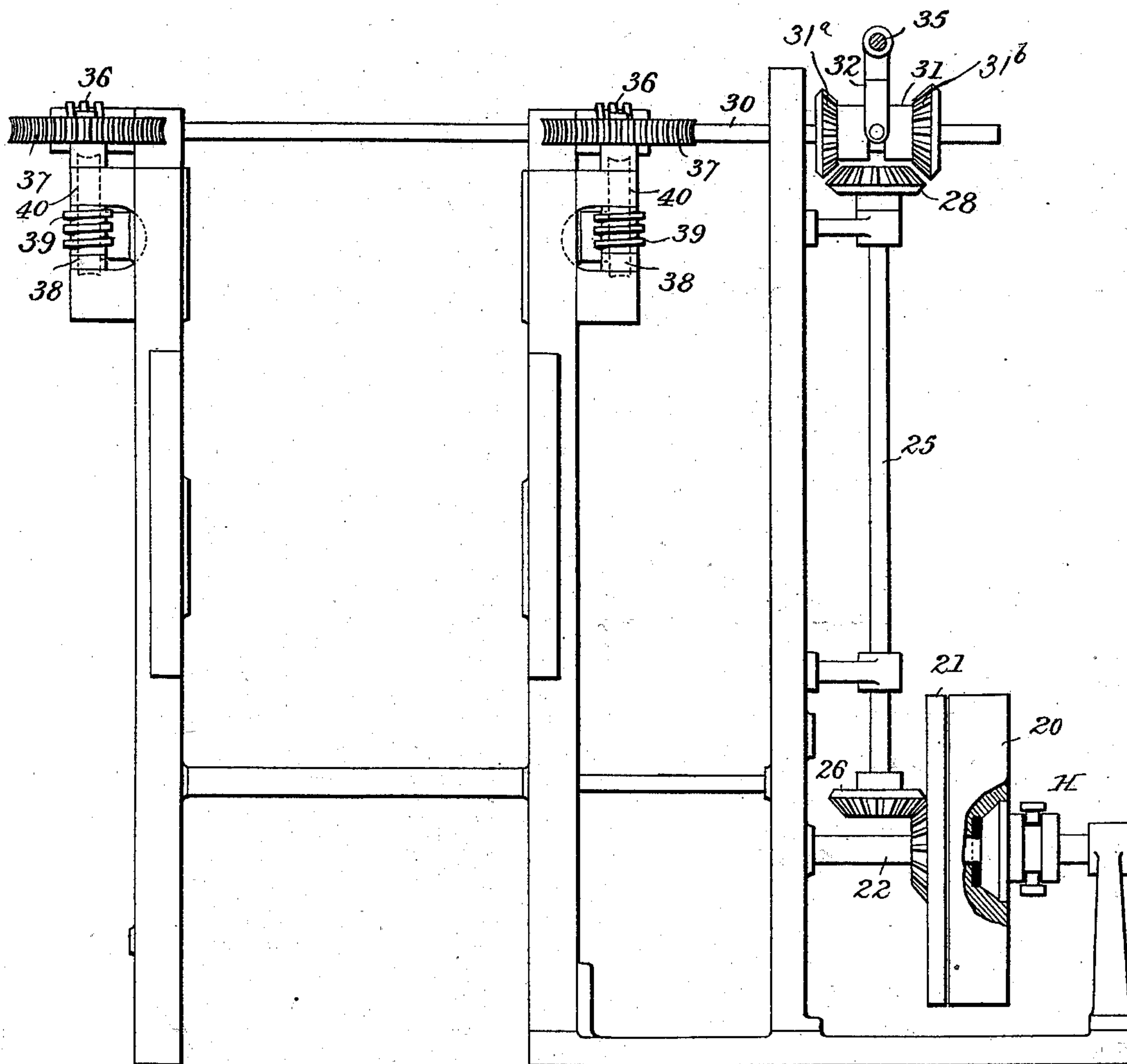
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Fig. 2.



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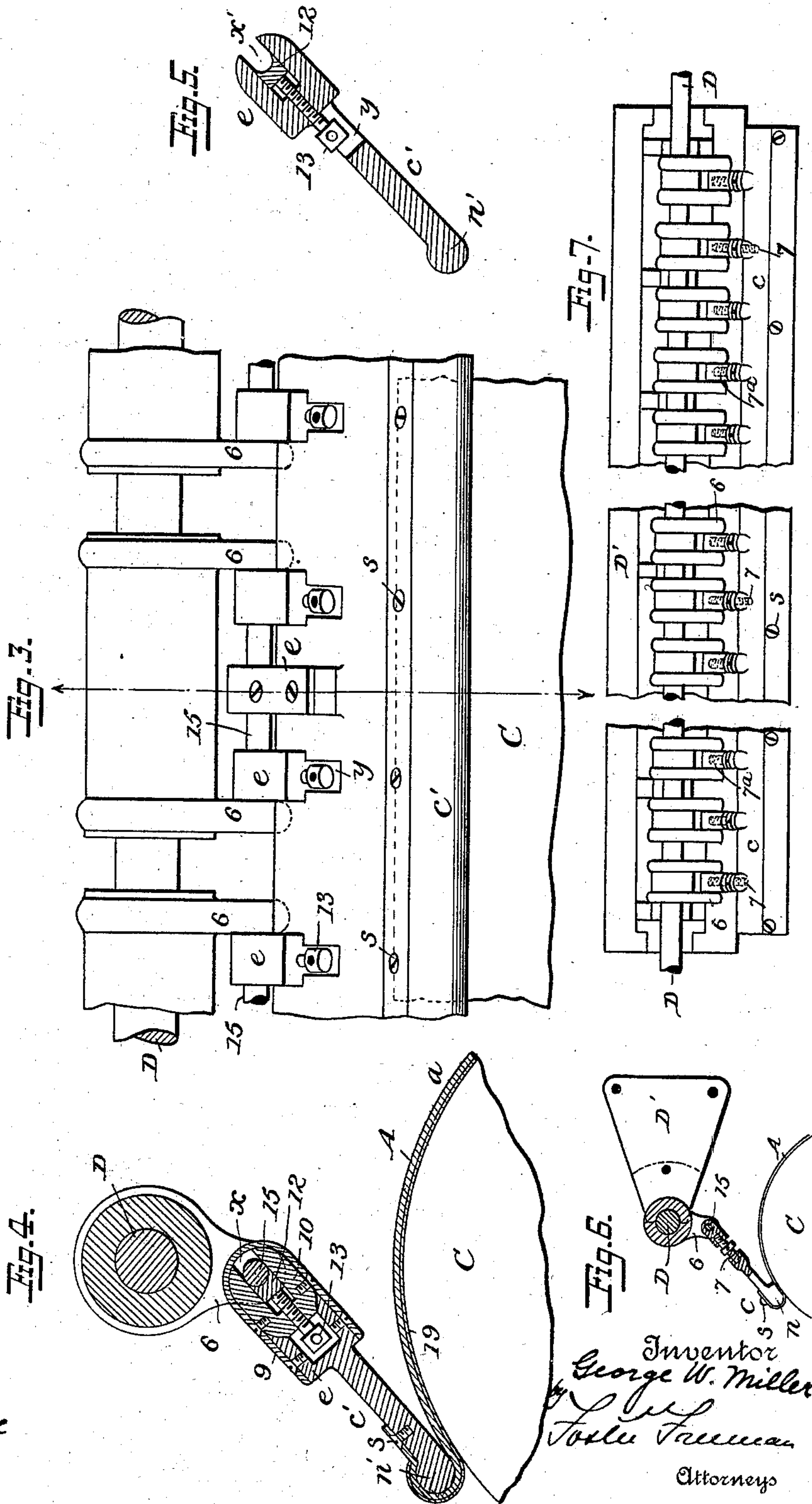
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CLOTH PRESSING MACHINE.

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# UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, WOONSOCKET, RHODE ISLAND.

## CLOTH-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 560,733, dated May 26, 1896.

Application filed June 15, 1894. Serial No. 514,684. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. MILLER, a citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Cloth-Pressing Machines, of which the following is a specification.

My invention relates to apparatus for pressing cloth; and my invention consists in certain improvements in the details of construction of such apparatus, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of sufficient of a cloth-pressing machine to illustrate my invention. Fig. 2 is a front elevation showing some of the parts. Figs. 3, 4, and 5 are enlarged details showing modified devices for connecting the end of the flexible bed with the bed-stretching devices. Fig. 6 is a side view, partly in section; and Fig. 7 is a plan view showing the devices for connecting the end of the flexible bed shown in Fig. 1.

The frame of the machine and many of the details are of any suitable construction and arrangement and need not be referred to, as my invention consists in improvements in machines which in many respects are of ordinary construction.

The presser-bed A is in the form of a flexible sheet  $\alpha$ , of steel, copper, brass, composition, or other material. With this presser-bed are employed means for supporting it and for causing it to be drawn around the cylinder C under more or less tension to exert a greater or less pressure upon the cloth which travels between the presser-bed and the cylinder. As shown, the presser-bed is of copper, which should be about one-eighth of an inch thick, and one edge 2 is curved to form a transverse foot to hook over the rib 3 of a triangular cross-bar or bevel B. The other end of the sheet is connected with any suitable device for drawing it around the cylinder C to apply greater or less pressure to the cloth, which passes, as usual, between the bed and the cylinder. As shown, I make use of toggle-joints to effect the drawing of the end of the bed. Thus a rock-shaft D, supported in suitable bearings in the triangular cross-bar or bevel D', carries a series of arms 6, each

forming one part of a toggle, the other part consisting of a rod  $c$ , terminating in a round head  $n$ , that fits within the hooked end of the sheet constituting the bed. Each one of the rods  $c$  may consist of two sections, with threaded sockets to receive the ends of a right-and-left screw 7, and these screws may be turned so as to secure a uniform tension upon the bed when the shaft is rocked to any position; but I find that it is unnecessary to unite all the sections by right and left hand screws, and in Fig. 7 I have shown three such screws, one at each end of the bed and one at the middle, and intervening I use single screws 7<sup>a</sup>.

Instead of the construction above set forth I may use the construction shown in Figs. 3 and 4, where there is a continuous rib  $c'$ , having upon it a series of enlargements  $e$  near the upper edge and a rounded lower edge  $n'$ , around which the end of the band A is lapped and then secured by screws  $s$ .

The central enlargement  $e$ , as well as the end enlargements, is recessed to receive a block 10, which partly fills the recess and which has a slot  $x$ , containing a movable bearing 12, with a rounded face fitted to a cross-rod 15, extending between two of the arms 6 of the shaft D, and a strap 9 extends around the enlargement  $e$  and around the block 10 and holds the latter in place. A set-screw 13 adjusts the bearing 12. Each of the other enlargements is arranged, as shown in Fig. 5, with a slot  $x'$ , bearing 12, and set-screw 13, the head of which extends into a slot  $y$ , the strap and block being omitted.

The bed, as usual, has an inside lining 19 of thin steel or some other material which can be removed in case it is injured by abrasion or otherwise. It is required that the pressure shall be applied or taken off at any time, and this must be done instantly to avoid injury to the goods. It is more frequently required that the pressure shall be put on or removed when the machine is at rest. I therefore provide means whereby there is a constant source of power that may be employed for applying or removing the pressure whether the machine is in operation or at rest. For instance, I mount a pulley 20 upon a driving-shaft 22, said pulley being constantly rotated by a belt extending from an engine. (Not shown.) Between the pulley 20 and the



driving-shaft there is a clutch device H of any suitable character, whereby the pulley may be clutched to the shaft, or whereby it may be allowed to run loosely thereon.

5 Alongside of the pulley 20 is another pulley 21, mounted on the shaft 22, and which serves to operate the devices for applying pressure to or removing it from the bed. The intermediate devices may be of any suitable  
10 character. As shown, there is a vertical shaft 25 turning in bearings at the side of the frame of the machine which gears through beveled gears 26 with the pulley 21, so as to be driven thereby. The upper end of this  
15 shaft carries a bevel-wheel 28, which may be put into gear with a shaft 30 to turn it in either direction. Thus a friction-sleeve 31, carrying gears 31<sup>a</sup> 31<sup>b</sup> at opposite sides and adapted to slide on the shaft 30 and to turn  
20 therewith, can be shifted to one position to gear with one side of the bevel-wheel 28 and to another position to gear with the opposite side, or it may occupy an intermediate position, so as to be entirely out of gear with the  
25 wheel 28. The sleeve 31 may be shifted in any suitable manner—as, for instance, by means of a yoke 32, having pins extending into an annular groove in the said sleeve, the yoke being connected to a shaft 35, which  
30 may be shifted by a hand-lever or any other device in any suitable manner. The shaft 30 has worms 36 gearing with worm-wheels 37 upon vertical shafts 38, carrying worms 39 gearing with worm-sectors 40, attached to the  
35 rock-shaft D. When the sleeve 31 is shifted to one position, the shaft 30 is turned in one direction and the rock-shaft D is caused to wrap the flexible bed around the cylinder under powerful tension, and when the sleeve  
40 31 is shifted to the other position the shaft D is rocked in the reverse direction and the pressure of the flexible bed upon the cylinder or cloth is removed, these operations being effected each in a few moments. If it is de-  
45 sired simply to start the machine, the friction-clutch of the pulley 20 is so applied that the shaft 22 will be rotated. If, as is frequently the case, it is desired to put on or take off the pressure while the machine is stationary, the  
50 belt is shifted onto the pulley 21, the latter will be driven to drive the shaft 25, and the pressure may be applied or removed by properly adjusting the sleeve 31. The same operation may be accomplished when the ma-  
55 chine is running by shifting the driving-belt so that a portion—say a half-inch—of the belt will bear on the pulley 21.

The presser-bed may be heated in any suitable way; but I prefer, however, to use one or  
60 more cast-iron jackets *f*, hollow and supplied with steam or hot air as usual when required. The jacket may extend to any desired extent around the cylinder; but I have found that it is sufficient if it extends only for a part of the  
65 distance, especially as in many instances no heating at all is required. There is great advantage in having the space A<sup>2</sup> between the

ends of the flexible bed at one side of the cylinder, as shown, because it is then possible to examine the goods at all times that they  
70 are being operated upon and the goods can be more readily got at, but more especially for the purpose of having a full view of the base part of the cylinder to detect any substance that may and does collect on face of  
75 the cylinder.

Another feature of the machine has for its object to vary the stretching action of the stretcher. This may be effected by varying the extent to which the cloth is carried around  
80 the stretcher T by moving the guide-roll 43 so as to wrap the cloth to a greater or less extent around the stretcher and thereby vary the stretching action of the roll on the cloth. As shown, the stretcher T has a shaft extend-  
85 ing through vertical openings *v* in the side frame in which are bearings adjustable by screws 51 to cause the cloth to become wrapped around the stretcher to a greater or less extent, thereby varying the tension upon  
90 the cloth. The guide-roll 43 is so arranged in respect to the stretcher and the bearing 2 that when the roll 43 is moved toward the stretcher the cloth will encircle a greater por-  
95 tion of the stretcher, while when it is carried away from it there is less cloth bearing on the stretcher and the stretching action is proportionately diminished.

In pressing cloth it very frequently happens that there are particles of metal which in some  
100 way get connected to the cloth, as chips or pieces of nails, or the girls who sew the cloth may leave needles in the cloth. If these particles get between the pressing-faces, they cut them and seriously injure the machine.  
105 To avoid any difficulty from this source I combine with the machine a broken electrical circuit of such a character that it will be completed by the contact of any of the said metallic particles. Thus there may be two par-  
110 allel rods or bars *r r*, each in a circuit broken between the bars, and so arranged that a piece of metal carried with the cloth will simultaneously make contact with both bars  
115 and complete the circuit and sound an alarm S. It will be evident that various other arrangements may be adopted for completing a circuit by metallic particles carried by the cloth.

Without limiting myself to the precise con-  
120 struction and arrangement of parts shown, I claim as my invention—

1. In a cloth-pressing machine, the combination with the cylinder, a flexible metal bed extending partly around the cylinder, a sup-  
125 port for one end of the bed, a rock-shaft and connection between the rock-shaft and the other end of the bed, comprising two sections connected to the rock-shaft and one end of the bed respectively and a right and left hand  
130 screw intermediate of the sections, substantially as described.

2. In a cloth-pressing machine, the combination with the cylinder, a flexible bed ex-



tending partly around the cylinder, a support for one end of the bed, a rock-shaft, sectional connections between the rock-shaft and the other end of the bed, and adjusting devices intermediate the sections of said connection, substantially as described.

3. In a cloth-pressing machine, the combination with a cylinder, of a pressure-bed partially surrounding said cylinder, a driving-shaft, a driving-pulley on said shaft, a clutch between the driving-pulley and the driving-shaft, a second pulley mounted on the driving-shaft connections between said pulley and the pressure-bed, and means for actuating either of the pulleys, substantially as described.

4. In a cloth-pressing machine, the combination of a driving-shaft 22, pulleys 20, 21, mounted thereon, shaft 25, and gears connecting it with the shaft 22, a bevel-wheel 28 carried by the shaft 25, a double gear-sleeve 31 adjustable with respect to the wheel 28, the shaft 30 upon which the gear-sleeve is adapted to slide and rotate, a press-bed and connections between the press-bed and the shaft 30, substantially as described.

5. In a cloth-pressing machine, the combination with driving mechanism, and means for throwing it into and out of operation, of a shaft, a press-bed and gearing intermediate the shaft and press-bed, and means intermediate the driving mechanism and the shaft for rotating the latter in either direction, substantially as described.

6. In a cloth-pressing machine, the combination with a shaft 30, of a double gear-sleeve adjustable thereon, a gear 28, driving mechanism for operating the same, means for throwing said mechanism into and out of operation, a press-bed, and connections between the press-bed and the shaft 30, substantially as described.

7. The combination with the supports for the cloth, of an electric circuit, and two metallic bars in close proximity to each other and each forming a terminal of the electric circuit, said bars being arranged in the path of movement of the cloth to make contact therewith, whereby particles of metal in the cloth make contact with both bars and close the circuit, substantially as described.

8. The combination with the supports for the cloth, of an electric circuit, an alarm device in said circuit, and two rods or bars in close proximity to each other, each forming a terminal of the electrical circuit, said bars being arranged in the path of movement of the cloth to make contact therewith whereby particles of metal in the cloth make contact with both bars and close the circuit, substantially as described.

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

GEORGE W. MILLER.

Witnesses:

THOMAS Z. LEE,  
WILLIAM TITTER.