

(No Model.)

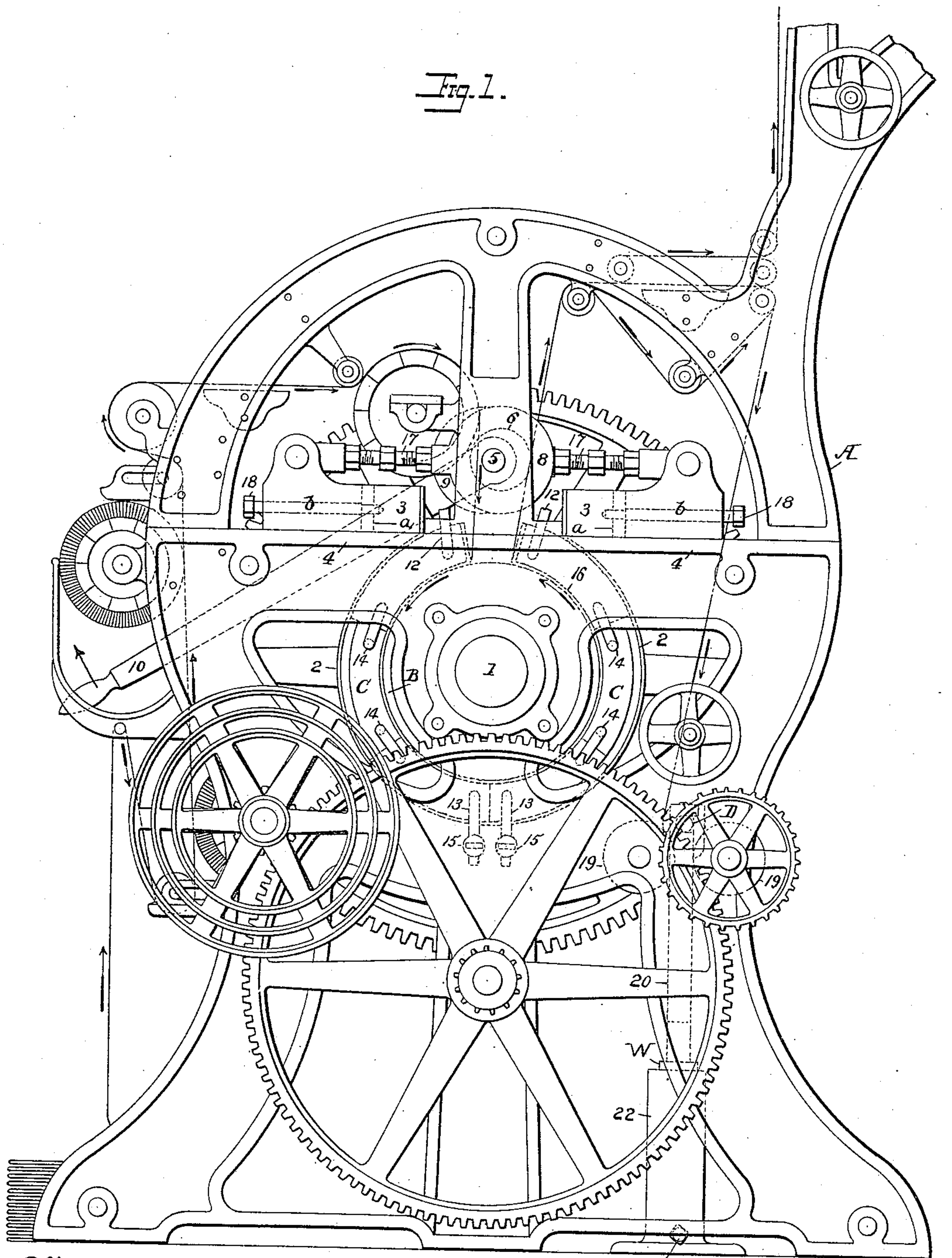
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G. W. MILLER.  
CLOTH PRESSING MACHINE.

No. 442,706.

Patented Dec. 16, 1890.

Fig. 1.



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(No Model.)

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Fig. 2.

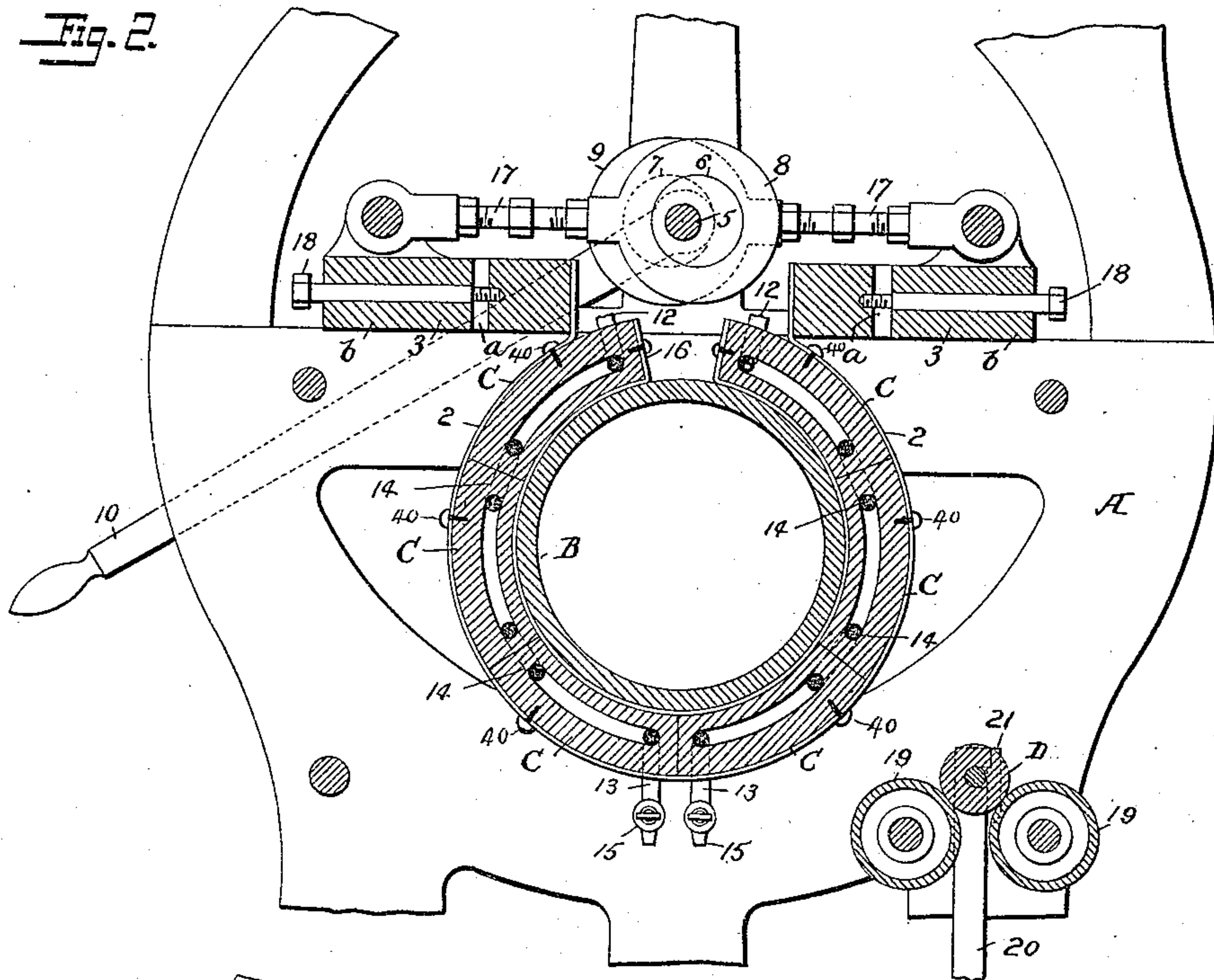
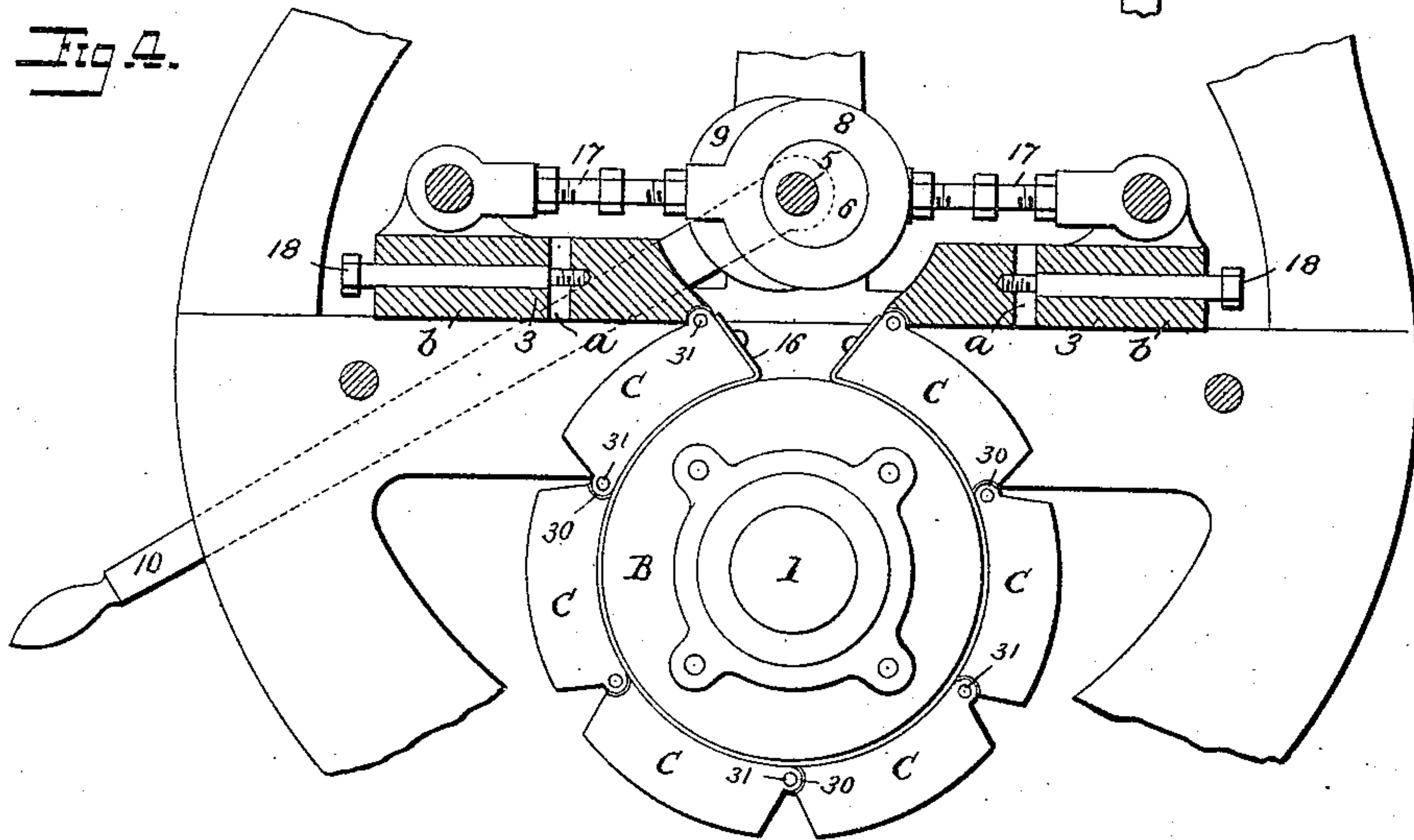


Fig. 4.



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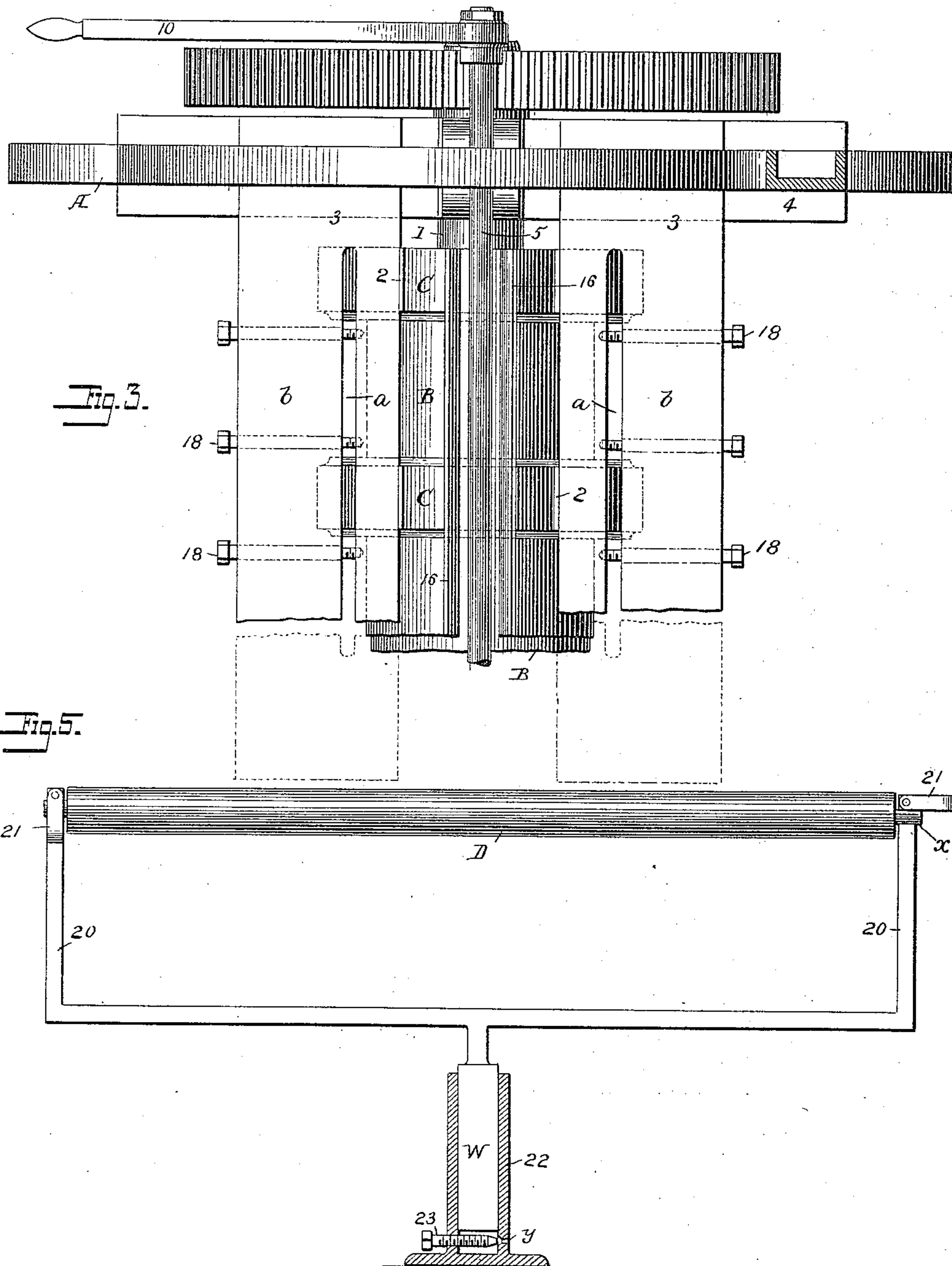
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# UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF WOONSOCKET, RHODE ISLAND.

## CLOTH-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,706, dated December 16, 1890.

Application filed March 10, 1890. Serial No. 343,392. (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, Providence county, Rhode Island, have invented certain new and useful Improvements in Cloth-Pressing Machines, of which the following is a specification.

My invention relates to that class of cloth-presses in which the cloth is pressed between a cylinder and concave beds movable to and from the cylinder; and my invention consists in the peculiar arrangement of beds and means for operating the same fully set forth hereinafter, and also in means for preventing detrimental movement of the take-up beam or roller, as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of sufficient of a cloth-press to illustrate my improvements. Fig. 2 is a part-sectional elevation. Fig. 3 is a partial plan view of the cylinder, presser-beds, and supports. Fig. 4 is an end view of the cylinder, presser-beds, and supports in section illustrating a modification. Fig. 5 is a side view of the take-up roller and parts connected therewith in part section.

The frame A of the machine is constructed in any suitable manner to support the parts hereinafter described.

In bearings carried by the side pieces of the frame turns the shaft 1 of the pressing-cylinder B. Around the cylinder is arranged a series of pressing-beds C, preferably with their edges in contact, so as to completely encircle the cylinder except at the top, where the beds are separated sufficiently for the passage of the fabric, and around and connected with said beds by bolts 40 passes a series of straps 2, the ends of which are secured to slides 3 3, moving in guides 4 4, so that they may be carried toward each other for the purpose of contracting the straps upon the outsides of the beds to bring the latter with more or less pressure against the face of the cylinder or from each other to carry back the straps and beds. As the series of beds is wholly supported by the straps, the contracting of the latter will act uniformly upon all the beds to secure a practically uniform pressure at all parts of the surface of the cylinder, while by relaxing the straps the beds are

caused to be withdrawn, so as no longer to press on the cylinder.

Different means may be employed for moving the slides 3 or other movable carriers for the ends of the straps. I prefer, however, to employ mechanism whereby the carriers may be brought to the limit of their inward position or thrown outward by a single quick movement, so as to apply the pressure or remove it in an instant to or from the fabric. Thus a shaft 5, turning in the side frames above the cylinders, carries eccentrics 6 7, the former receiving straps 8, connected to one of the slides, and the latter receiving straps 9, connected to the opposite slide. The two sets of said eccentrics are set in opposite directions, so that when the shaft 5 is turned in the direction of the arrow, Fig. 1, by means of an arm or handle 10 the carriers 3 3 will be separated and when the movement is reversed they will be brought together.

In order to maintain the pressing-beds at the desired temperature, they are made hollow for the reception of steam or other fluid, which passes to the beds at opposite sides of the cylinder through pipes 12 12 and can pass out through pipes 13 13, the adjacent beds being connected with each other through the medium of connecting-pipes 14. When steam is employed, the pipes 13 may be provided with cocks 15, that may be opened to discharge the water of condensation.

The fabric is passed between the cylinder and the series of pressing-beds either with or without an apron in the direction of the arrows, Fig. 1, and any desired pressure is applied simultaneously over the entire pressing-surface by turning the shaft 5, or is relieved at once by reversing the movement of the latter. By this means the machine may be employed as a substitute for that class of pressers heretofore made with flat pressing-beds where the fabric is pressed between stationary surfaces. Thus, the cylinder B being turned, the fabric is moved the desired distance while the beds are separated from the cylinder. The movement of the cylinder and fabric is then arrested, and the pressing-beds are brought with a strong pressure against the fabric and held in this position for the proper length of time, after which



they are moved away and the fabric is fed sufficiently to bring a fresh portion between the pressing-surfaces, after which the above-described operations are repeated.

5 To avoid the creasing of the fabric liable to result when there are joints in the pressing-surface—such as the joints between the pressing-beds—and also to avoid varying pressures at different points, which result  
10 from bringing a concave surface upon a convex one, except when the fabric is of the exact thickness that insures the parallelism of the two surfaces when the maximum pressure is applied, I interpose between the pressing-beds and the fabric a metallic apron 16, consisting of a flexible sheet secured at one edge  
15 to the side of one of the upper presser-beds, extending around the inner surfaces of the series, and secured at the opposite end to the edge of the other upper bed. As the upper beds are carried toward each other by the contracting of the surrounding bands 2, a uniform pressure is applied at all points, even if the fabric is of such thickness that the  
25 faces of the beds and cylinder are not absolutely parallel when the pressure is greatest.

It will be obvious that instead of a series of bands 2 a single wide band may be employed.

To properly adjust the slides or carriers 3,  
30 in the first instance the connecting-rods 17 between the carriers and the eccentrics may be screw-rods with reverse threads fitting sockets, so that by turning said rods the carriers may be moved toward or from the shaft  
35 5. The carriers may also be capable of adjustment to compensate for any springing at the center resulting from the great pressure. Thus each has a longitudinal slot *a*, partly separating the inner part from the body  
40 of the carrier, so that such part may be pushed out slightly by screws 18 to carry in the ends of the bands and take up the slack caused by any springing of the carriers, so that the beds are caused to bear uniformly at  
45 every point. The fabric, after passing between the pressing-surfaces, is suitably guided to a take-up roll D, around which it is caused to be wound by the frictional action of two parallel rollers 19 19, driven from  
50 any rotating part of the machine, so as to turn with them the roll D and the fabric wound thereon, the roll D rising as the body of fabric upon the same increases.

In order to insure sufficient frictional pressure between the roll of fabric and the supporting-rolls 19 19, the roll D is weighted by means of a frame 20, hung to pins or journals at the end of the roll D and supporting a heavy weight or plunger W. As the roll D  
60 must be removed from time to time when a sufficient body of cloth has been wound upon the same, the frame D is provided with sockets *x* for the reception of the journals of the roll, which sockets are open at one side to permit the journals of the roller to be entered therein, and are then closed by means of pivoted latches 21. As the heavy weight

of the frame and weight W would cause these parts to descend with a detrimental shock at once upon the removal of the roll, I restrain  
70 this action by fitting the weight W to a cylinder 22, with a restricted orifice permitting the escape and entrance of air, so that the frame may rise as rapidly as is required to accommodate the increasing diameter of the  
75 roll; but when the latter is removed the air will be so restricted in its escape that it will act as a buffer and prevent the rapid descent of the frame. One method of regulating the flow of air is by means of a channel *y* in the  
80 side of the cylinder, regulated by the adjustment of a screw-valve 23. Water or other fluid may be substituted for air to restrain the movement of the roller-carrying frame.

Instead of connecting the series of beds  
85 together edge to edge by means of a strap or straps, each bed may be provided with lugs 30, coinciding with those of the adjacent bed, and bolts 31 may be passed through the contiguous lugs, thus hinging all together in one  
90 chain, as illustrated in Fig. 4. In such case the upper separated beds may be provided with lugs hinged to lugs upon the carriers 3 3.

Without limiting myself to the precise construction and arrangement of parts shown, I  
95 claim—

1. The combination, with a pressing-cylinder, of a series of pressing-beds connected together and partly surrounding the cylinder and means for contracting said series upon or  
100 moving it from the cylinder, substantially as set forth.

2. The combination, with the cylinder of a cloth-press, of a series of pressing-beds surrounding the cylinder, the beds being connected together, movable carriers connected  
105 to the opposite separated beds of the series, and means for moving said carriers to and from each other, substantially as set forth.

3. The combination, with a pressing-cylinder, of a series of pressing-beds surrounding the cylinder, a strap or straps connecting said beds, carriers connected to the opposite ends of said strap, and means for moving the carriers to and from each other, substantially as  
110 set forth.

4. The combination of the cylinder of a press, a series of press-beds surrounding the cylinder, having chambers and pipe-connections between the different chambers of the  
120 bed, and inlet and outlet pipes, substantially as set forth.

5. The combination of a press-cylinder, a series of beds around the same, a strap or straps supporting said beds, and movable  
125 slides to which the ends of the strap are connected, substantially as set forth.

6. The combination of the press-cylinder, a series of beds around the same, a strap or straps, movable carriers therefor, shaft 5, carrying two sets of eccentrics set in opposite  
130 directions, and connections between each set of eccentrics and the carriers, substantially as set forth.



7. The combination of the press-cylinder, a connected series of press-beds around the same, and an intermediate apron connected at the ends to the end beds of the series, substantially as described.

8. The combination, with the supporting-rolls 19 19 and take-up roller D, of a weighted frame hung to said take-up roller, latches for holding the bearings of the roller in said frame, a cylinder for receiving the weight or plunger connected with said frame, and a re-

stricted passage limiting the flow of fluid to and from the said cylinder, substantially as and for the purpose set forth.

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

GEORGE W. MILLER.

Witnesses:

WALTER I. BALLOU,  
WILLIAM G. RICH.