

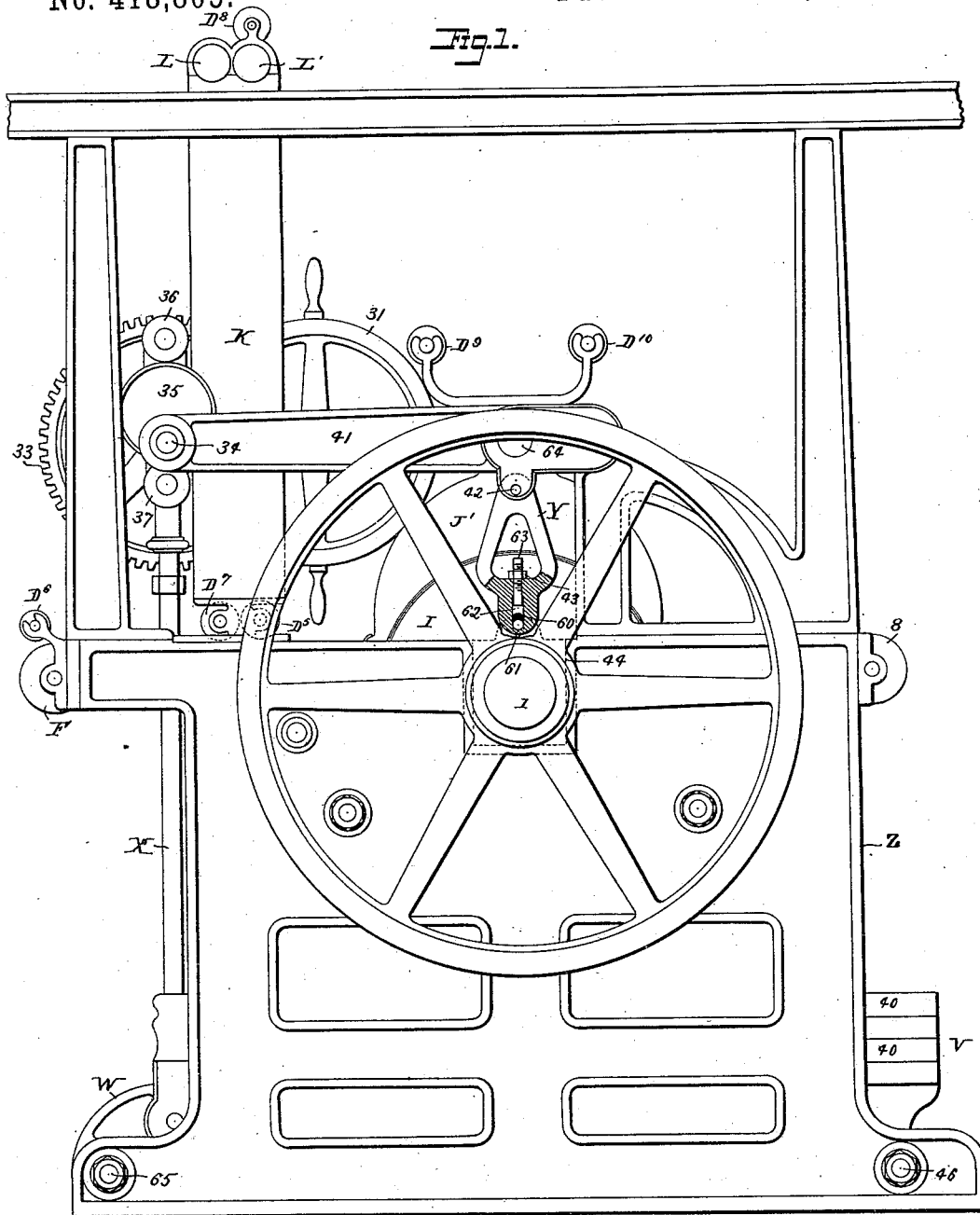
(No Model.)

2 Sheets—Sheet 1.

G. W. MILLER.
CLOTH PRESSING MACHINE.

No. 418,805.

Patented Jan. 7, 1890.



Witnesses
J. G. Hinkel, Jr.
W. S. McArthur

Inventor
Geo. W. Miller
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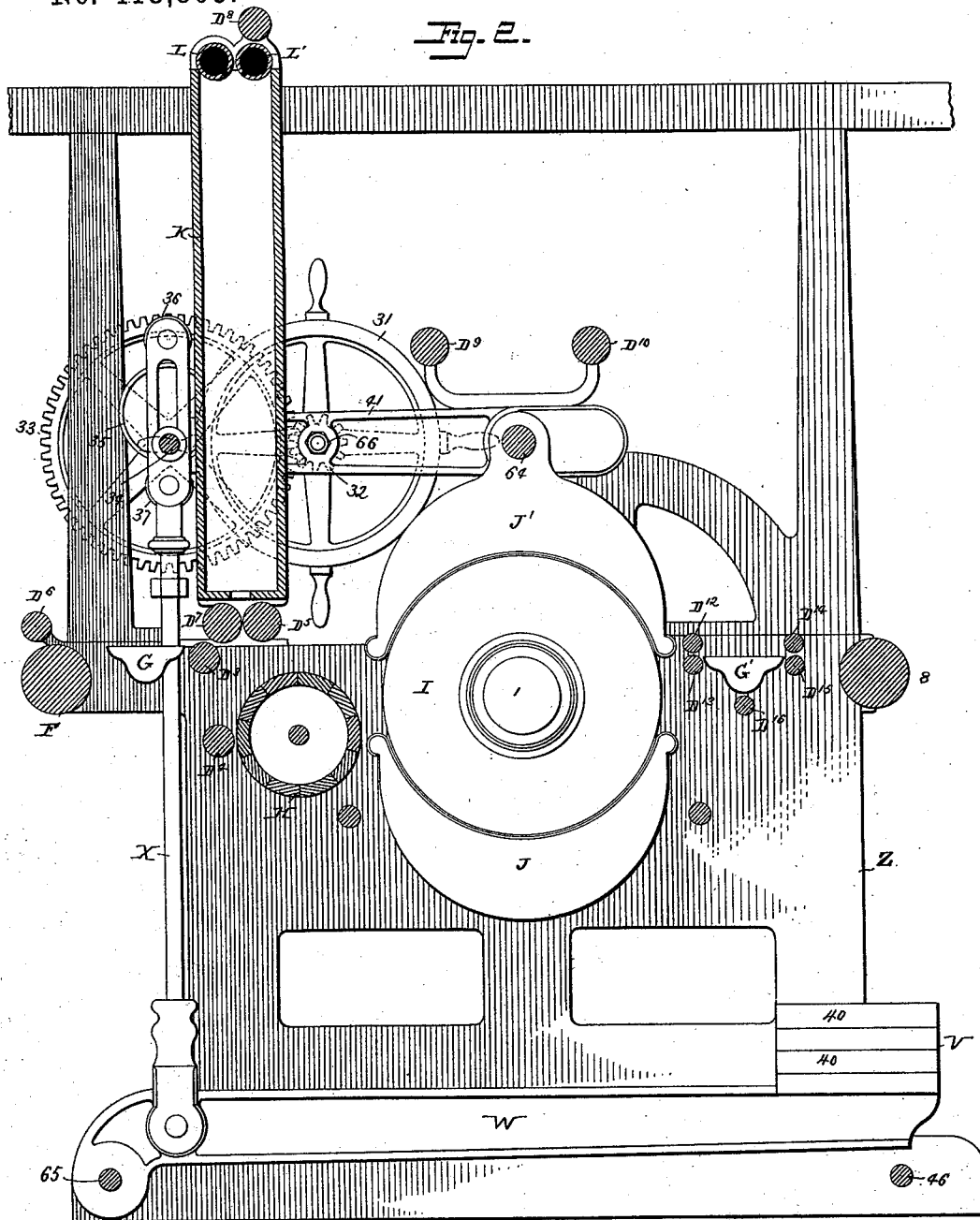
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UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF WOONSOCKET, RHODE ISLAND.

CLOTH-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,805, dated January 7, 1890.

Application filed December 12, 1888. Serial No. 293,330. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MILLER, a citizen of the United States, and a resident of 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 presses which is employed for pressing cloth and other fabrics and articles; and my invention consists in constructing the press, as fully set forth hereinafter, so as to facilitate the adjustment of the parts in the operation of steaming, present either face of the fabric to the steamer or steamers, and the back of the fabric at all times to the stretcher, and so as to vary the order in which the fabric is presented to the steamer or steamers and pressing devices, as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of sufficient of a cloth-press to illustrate my improvements; Fig. 2, a vertical sectional elevation.

The various parts of the press are supported between side frames Z Z, in which are the bearings for the various shafts hereinafter referred to, except the cylinder-shaft 1, which turns at each end in a box 44, adapted to slide in the bearings in the frame, and to the said shaft is secured the cylinder I, below which is the lower fixed bed J, and above which is the movable bed J', the said cylinder and beds being solid or hollow, as may be desired. As shown, each bed is hollow for the reception of steam for heating the same in a manner too well known to need description.

The cylinder-boxes are raised and lowered to carry the cylinder away from and toward the bed J by means of two levers 41, each pivoted at one end to one of the frames, and each connected with the box 44 below it through the medium of a link Y. Each link Y is hung to the lever 41 by a pin 42, and is provided with a slot 60 to receive a pin 61, extending between ears upon the box 44, the slot 60 being of such a length as to receive and permit the vertical movement above the pin 61 of a bearing-block 62. A screw 63 extends through the link in position to be

brought with its lower end against the top of the block 62, and is provided with a lock-nut 43. The upper bed J' is hung to a cross-bar 64, extending between the levers 41, and by turning the screws 63, so as to carry the blocks 62 downward upon the pins 61, the links Y may be lifted, and with them the levers 41 and the movable bed J', thereby carrying the latter from the cylinder when it is not required to press the fabric between the top of the cylinder and the said bed. This arrangement for lifting the bed J' by raising the levers 41 does not interfere with the vertical adjustment of the cylinder by means of such levers, nor with an independent adjustment or movement of the movable bed. Thus, while the bed J' may be elevated by means of the levers 41, raised by the action of the screw 63, when it is desired to throw the said bed out of operation it may be also lifted by raising the outer ends of the levers, when the bed will be carried from the cylinder until the pins 61 bear against the lower ends of the slots 60, when the bearings 44 and the cylinder itself will be raised by the continued lifting of the levers.

Any desired pressure may be applied to force the bed toward the cylinder and the latter toward its bed by weighting the levers 41, and this is effected by connecting said levers by means of rods X to other levers W, each pivoted to the lower part of one of the frames at one end by a pivot 65 and provided with a weight V at the opposite end. Each rod X is attached to the lever W at a point near to its fulcrum, so that the weight at the extreme end of the lever acts with a considerable leverage to depress the levers 41, and in order to vary this pressure as may be required for different kinds of goods and to invariably apply the same pressure to goods of the same character each weight V is made of a series of detachable sections or blocks 40, so that their number may be increased or decreased to secure the desired result.

It is important in pressing fabrics that the operator should have it in his power to quickly relieve the beds of pressure in some cases—as, for instance, when he discovers that the fabric is being torn or that the jacket is being

cut. For this purpose it has been common to so connect the levers 41 with the rods X as to permit a quick variation in the point of connection, allowing the rods and levers W to drop until the latter take their bearing upon stops—as, for instance, cross-bars 46—thereby relieving the levers 41 of pressure. Such a connection between the levers 41 and the rods has consisted of disks 35, placed eccentrically upon a cross-rod 34, carried by the levers 41, and upper and lower bearing-wheels 36 37 upon the rods X and upon opposite sides of the disks 35. By turning the shaft 34 to carry the larger radius of the eccentrics to a position above the shaft, as shown in the drawings, the levers are depressed and the rods X are raised, so as to throw the weight upon the levers, and by reversing the position of the eccentrics the rods X are permitted to descend, and the levers 41 are lifted and the cylinder and beds relieved from the load of the weight, and are also lifted vertically, as before described.

Heretofore the movements of the shaft 34 and its eccentrics have been effected by means of a hand-lever upon said shaft, and owing to the weight of the parts the operation of adjustment is not only difficult, but is apt, through carelessness or weakness of the operator, to result in sudden jarring or straining of the machinery of the apparatus. To avoid this, I provide the shaft 34 with a large gear-wheel 33 at one end, and upon a stud 66 upon one of the levers 41 I arrange a hand-wheel 31, carrying a pinion 32, engaging with the gear-wheel 33, so that by turning the hand-wheel the gear-wheel 33 may be revolved quickly, but gradually and rapidly, to revolve the shaft 34 and its eccentrics. I thus not only prevent the irregular movements before described, but also relieve the operator of much of the labor required to manipulate the machine in the ordinary manner.

It is desirable in some cases to press the cloth or other fabric or goods after steaming or at other times before steaming, and in some cases without steaming, and also sometimes to steam the goods both before and after pressure, and it is also desirable to vary the manner in which the goods are presented to the pressing devices. In order to permit these various operations to be performed in a single press, I provide the same with two steamers of any suitable construction upon opposite sides of the cylinder, and with guide-rolls arranged to permit the direction or course of the fabric to be varied. The steamer G is arranged between the friction-roll F at the front of the machine and the cylinder, and the other steamer G' is arranged between the cylinder and the take-up roll 8 at the rear of the machine, and the stretcher H is arranged in a position adjacent to the steamer G. At a point above the friction-roll F is a guide-roll D⁶. At the rear of the steamer G is a guide-roll D³, below which, in front of the

stretcher H, is a guide-roll D⁴, and back of the steamer G, above the guide-roll D³, are two parallel guide-rolls D⁵ and D⁷, which are at the lower end of a vertical air-box K, which is supplied with a current of air for cooling the fabric from perforated parallel air-tubes L L'. Above the air-tubes is a guide-roll D⁸, arranged to hold the fabric in line between the tubes as it passes from between the rolls D⁵ and D⁷ and through the air-box. Above the levers 41 turn two parallel guide-rolls D⁹ D¹⁰, and adjacent to the forward edge of the steamer G' are two parallel rolls D¹² D¹³, and back of the rear edge of said steamer are two parallel guide-rolls D¹⁴ D¹⁵. Below the steamer G' is a single guide-roll D¹⁶.

I will now proceed to describe the different ways in which the cloth may be conducted through the machine in consequence of the foregoing arrangement of parts.

First. The cloth passing up over the friction-roll F is conducted over the steamer G, past the guide-roll D³ and below the guide-roll D⁴, upward and over the stretcher H to and between the cylinder I and bed J, receiving one pressure, and then between the cylinder and the movable bed J', receiving a second pressure. After passing from the movable bed the cloth is conducted upward and round the guide-roll D⁹ to the folder or winding-roll. By this means the goods may be steamed before pressure, which is the usual manner of operating upon it.

Second. To steam the goods after pressing, the cloth is conducted from the guide-roll D⁹ around the guide-roll D¹⁰ between the rolls D¹² D¹³ and over the steamer G', and thence to the folder or winder.

Third. To steam the cloth before and between the pressing operations, it is conducted between the cylinder I and bed J in the first instance, thence over the guide-roll D¹³ and over the steamer G', thence round the roll D¹⁴ and between the rolls D¹² D¹³ back to the cylinder and between the latter and the bed J'.

Fourth. The cloth between the pressing operations, and also after pressing it, is in the first instance passed below the steamer G, over or below the roll D⁴, thence round the cylinder between the same and the bed and the movable bed, thence forward over the steamer G below and round the roll D⁶, and thence below the roll D⁷, between the latter and the roll D⁵, upward between the air-pipes, and round the roll D⁸ to the folder. By the arrangement of the rolls in connection with the steamer G either side of the goods may be steamed. Thus the cloth may be conducted over the steamer, as above described, so as to steam the lower side or face of the goods, or it may be passed below the steamer over the roll D⁴, forward round the roll D³, and thence over the steamer to steam the opposite face. In like manner the arrangement of rolls D¹³ D¹⁴ D¹⁵ in respect to the steamer G' permits either side of the

cloth to be presented to the latter. Thus one side is steamed by conducting the cloth over the roll D¹³, under and around the roll D¹⁴, and forward, or it may pass below the steamer to the roll D¹⁵, and thence over the steamer and forward.

By the arrangement of the stretcher H, as described, in connection with the cylinder and the guide-roll D⁴, the cloth may be guided either over or under the stretch-roll, according to the manner in which it is presented, it being essential, of course, that the face of the goods shall not be next to the stretcher.

It will be evident that in presses constructed differently from that described and illustrated the arrangement of guide-rolls and the number required will differ from that shown, and I contemplate such variations in connection with different styles of presses, it only being important in carrying out my invention that the guide-rolls be so arranged in connection with the parts described as to permit the cloth to be carried in different lines to steam either side, or to steam it before or after pressing, or between pressing operations, and so as to carry it across the stretcher-roll with the back face to the latter, whatever may be the position of the cloth as it approaches the stretcher.

I do not in this application claim the air box or tube K, arranged to receive the fabric as it moves out of the machine, and the air-pipes L L', communicating with the blower, or the rolls D⁵, D⁷, and D⁸, arranged adjacent to the said tube in the manner shown, as such parts are made the subject-matter of claims in another pending application of mine, Serial No. 291,329, filed November 20, 1888.

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

1. The combination, with the cylinder, fixed bed, and movable bed of a cloth-press, of bearings for the axis of the cylinder, two parallel levers from which the movable bed is suspended, and links connecting the said bearings and the levers, each link having a slot receiving a stud or pin connected with the bearing, a block vertically adjustable in said slot, and a screw for adjusting the block, substantially as set forth.

2. In a cloth-press, the combination, with the levers, the cylinder, its bearings, and the

links connecting the levers and bearings, of a pin extending from each bearing into a vertical slot in each of the links, a block in said slot above said pin, and an adjusting-screw extending through a threaded opening in the link and bearing upon the top of said block, substantially as set forth.

3. The combination, with the cylinder, levers 41, and weighted levers W of a cloth-press, of connecting-rods X, each provided with bearings 36 37, a shaft 34, carried by the levers 41 and carrying eccentrics arranged between said bearings, a cog-wheel upon said shaft, and a pinion engaging therewith and connected with a hand-wheel turning upon a stud supported by one of the levers 41, substantially as and for the purpose set forth.

4. In a cloth-pressing machine, the steamer G, the friction-roller F in front of the steamer, the roller D⁶ on the same side of the steamer as the roller F and above the same, and the guide-rollers D³ D⁴ on the side of the steamer opposite the roller D⁶, substantially as set forth.

5. The combination, with the cylinder, a co-operating bed, the steamer, and stretcher of a cloth-press, of guide-rolls D³, D⁴, and D⁶, substantially as and for the purpose set forth.

6. The combination, with the cylinder, its co-operating bed, and the rear steamer of a cloth-press, of the guide-rolls D¹² D¹³ between the steamer and the cylinder and parallel guide-rolls D¹⁴ D¹⁵, adjacent to the rear edge of the steamer, substantially as set forth.

7. A cloth-pressing machine having the pressing-cylinder, the stationary pressing-bed, the movable pressing-bed, a front steamer G, the guides for leading the cloth over the steamer to the pressing devices, an air-box K, and the guide-rolls D⁷, D⁵, and D⁸, arranged substantially as set forth.

8. A cloth-pressing machine having the pressing-cylinder, the pressing-beds, the forward steamer G, the air-box K, and the guide-rolls F, D⁶, D³, D⁵, D⁷, and D⁸, arranged 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:

CHAS. E. BALLOU,
A. J. PORTNER.