

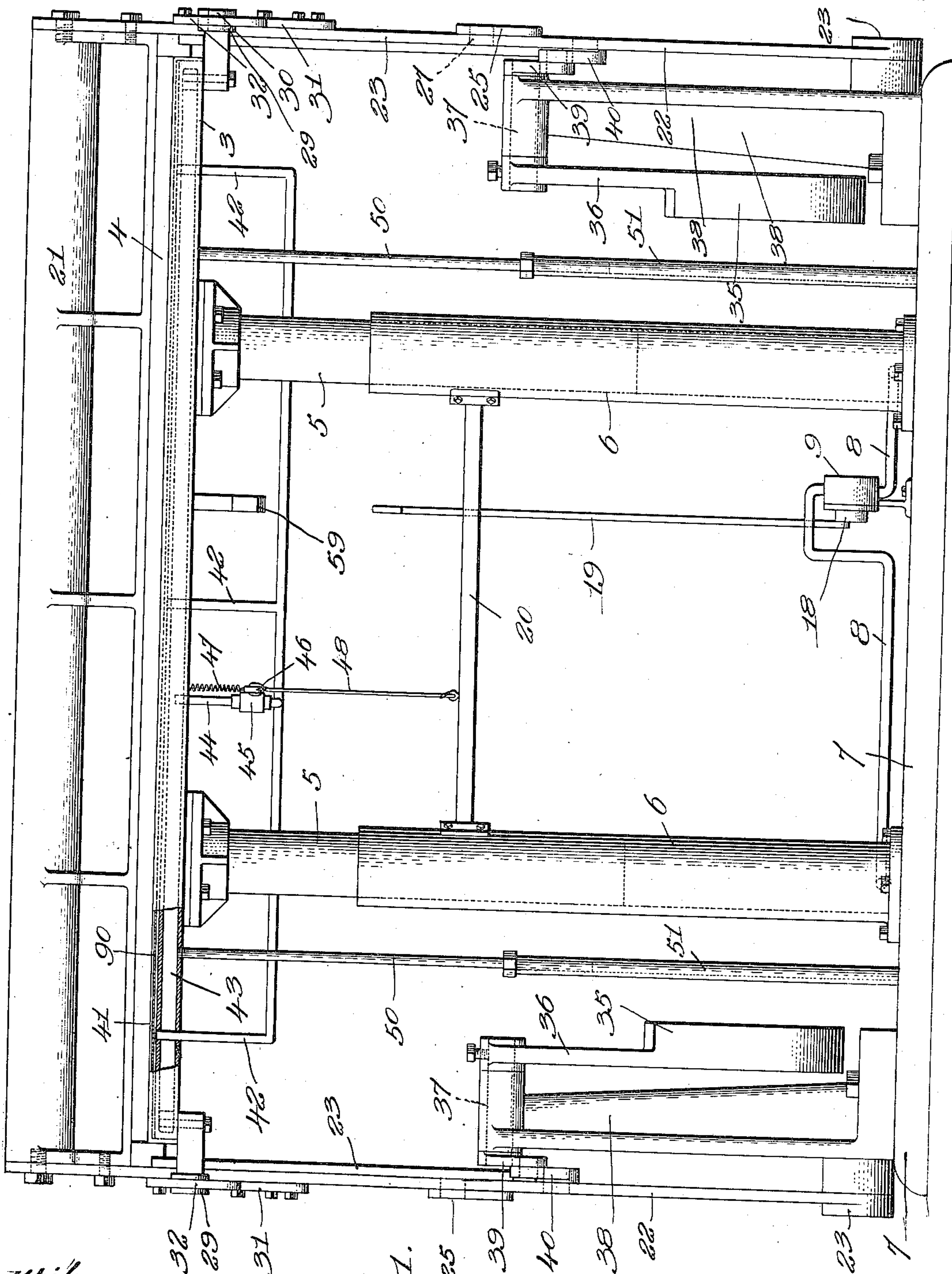
FABRIC PRESSING MACHINE.

APPLICATION FILED MAR. 14, 1910.

Patented July 4, 1911.

3 SHEETS—SHEET 1.

996,790.



witnesses:
Geo. S. Grumbaf.
Joseph M. Ward.

Fig. 1.

Trouverlons
Tom Patchett,
James W. Burke,
by Henry Ferguson atty.

T. PATCHETT & J. W. BURKE.

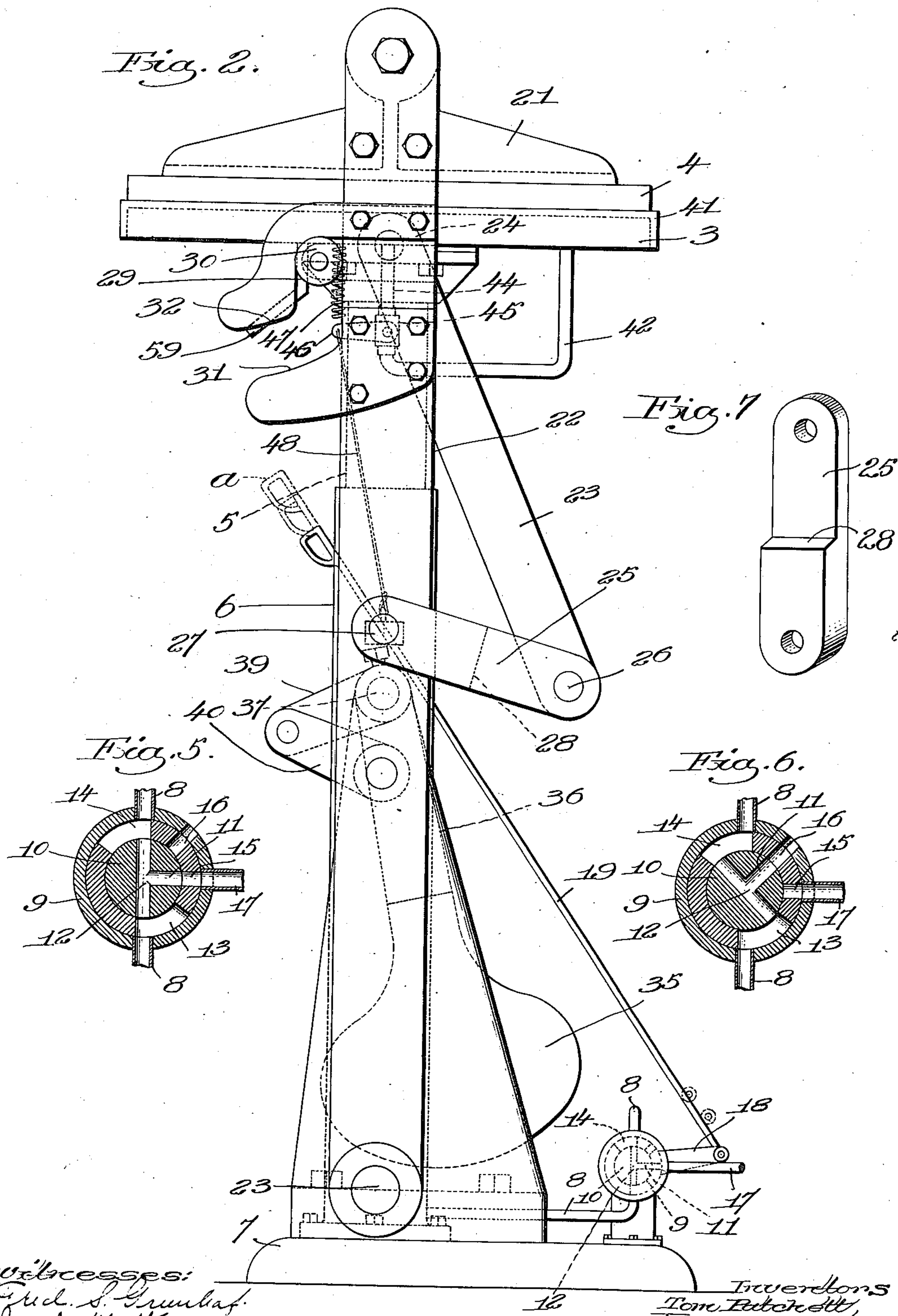
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3 SHEETS-SHEET 2.



Witnesses:
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3 SHEETS-SHEET 3.

Fig. 3.

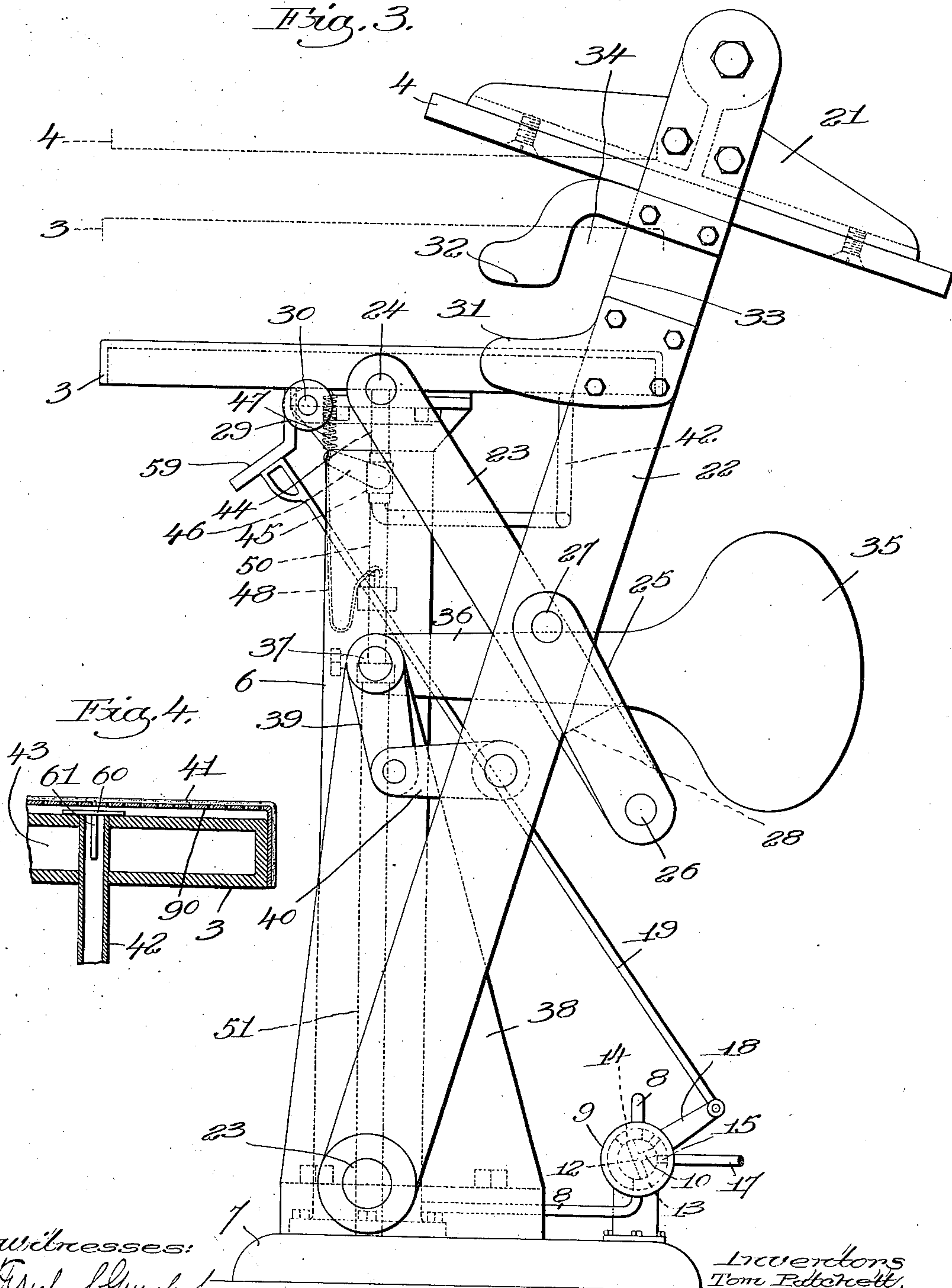


Fig. 4.

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UNITED STATES PATENT OFFICE.

TOM PATCHETT, OF STONEHAM, AND JAMES W. BURKE, OF WAKEFIELD, MASSACHUSETTS, ASSIGNORS OF ONE-HALF TO WINSHIP, BOIT & CO., OF WAKEFIELD, MASSACHUSETTS, A FIRM.

FABRIC-PRESSING MACHINE.

996,790.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed March 14, 1910. Serial No. 549,178.

To all whom it may concern:

Be it known that we, TOM PATCHETT, a citizen of the United States, residing at Stoneham, county of Middlesex, State of Massachusetts, and JAMES W. BURKE, a citizen of the United States, residing at Wakefield, county of Middlesex, and State of Massachusetts, have invented an Improvement in Fabric-Pressing Machines, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to fabric-pressing machines which are adapted to steam and at the same time press garments.

The objects of the invention are to provide a machine of this type in which the movement of the pressing element and table relative to each other to press the garment is secured by power instead of by hand as is the case in some pressing machines now in common use; to provide a machine in which the table has a vertical movement toward and from the pressing element so that when the pressing element and table are separated from each other, the table is at a convenient height for the operative to place thereon the garments to be pressed; to provide a machine of this type in which the pressing element has a bodily movement toward and from the front of the machine so that when the table is in its lowered position the pressing element will be back out of the way of the operative and the table and pressing element may be brought together for pressing the garment without giving the table an undue vertical movement; and to otherwise improve machines of this type whereby the operation thereof is controlled by a valve or similar device, the manipulation of which demands no particular manual labor on the part of the operator.

We will first describe one embodiment of our invention and then point out the novel features thereof in the appended claims.

Referring to the drawings, Figure 1 is a front view of a machine embodying our invention showing the parts in position for pressing; Fig. 2 is a side view showing the parts in a similar position; Fig. 3 is a side view showing the table lowered and the pressing element thrown back which is the position of the parts when the garments are

being placed thereon or taken therefrom; Fig. 4 is a partial section through a portion of the pressing table; Figs. 5 and 6 are sectional views through the valve. Fig. 7 is a perspective detail view of one of the links of the connecting mechanism between the table and the presser element.

The machine herein shown comprises a table designated generally by 3 on which the garments to be pressed are placed, and a pressing element designated generally by 4 between which and the table the garments are pressed. The table 3 is mounted for vertical movement, and may be given such movement by any suitable means. We have herein shown a pneumatic or hydraulic device for this purpose which comprises two pistons 5 secured to the table and operating in stationary cylinders 6 carried by the base 7 of the machine. The pistons are adapted to be elevated in the cylinders by admitting some motive fluid to the latter, and while any suitable motive fluid may be employed, we prefer to use compressed air. The motive fluid is shown as being admitted through the lower end of the cylinders through inlet pipes 8 which lead to a controlling valve designated generally by 9, said valve having such a construction that when it is in one position the compressed air will be admitted to the cylinders, and when it is in another position said air will be exhausted from the cylinders. Any appropriate valve mechanism adapted thus to admit the motive fluid or exhaust it may be employed. That herein shown comprises an ordinary three-way valve having a rotatable plug 10 provided with the lateral port 11 and the cross port 12. The valve casing is provided with two ports 13 and 14 that lead to the two pipes 8, respectively, and it is provided with an inlet port 15 and an outlet or exhaust port 16. The inlet port communicates with a supply pipe 17 leading to a suitable source of fluid pressure supply. When the valve is in the position shown in Fig. 5, the port 11 communicates with the inlet port 15 and the port 12 communicates with the ports 13 and 14 which lead to the pipes 8 and fluid pressure will be admitted to both pipes and thus to the two cylinders. When the valve is in the position shown in Fig. 6, the port 11 is brought into register with the exhaust port 16. The ports 13, 14

are of sufficient length so that they are in communication with the port 12 in both positions of the valve, and as a result when the valve is in the position shown in Fig. 6, the cylinders are exhausted. The valve may be operated in any suitable way, and we have herein shown for this purpose an arm 18 connected to the plug 10 and having connected thereto a rod 19 by which the valve may be turned. This rod may conveniently be supported on a cross-bar 20 extending between the cylinders 6, as shown in Fig. 1.

While we have described in detail one form of valve, yet we wish it understood that any other suitable device for admitting the fluid pressure to or exhausting it from the cylinders may be employed without departing from the invention.

The pressing element 4 is secured to a head 21 which is mounted to move from its operative position over the table, as shown in Fig. 2, into its inoperative position, as shown in Fig. 3. While this movement of the head may be accomplished in various ways, we have herein shown the head as sustained by two supports 22 that are pivoted to the base 7 at 23 and which permit the pressing element 4 to have this swinging movement above described. We propose to give the supports 22 their swinging movement by the rising and falling movement of the table 3, so that the pressing element will be automatically brought into position when the table is elevated. For this purpose, we have connected the supports 22 to the table so that the rising movement of the table will swing the supports forward. A convenient connection for accomplishing this result is shown herein and comprises links 23 pivoted to the table at 24 and also pivoted at 26 to other links 25 which in turn are pivoted to the swinging supports 22 at 27. The links 25 are provided with shoulders 28 that engage the edge of the supports 22 and thus limit downward swinging movement of said links. When the table rises the links 23 will swing the arms 22 forward, and as the table nears the upper limit of its movement, suitable guides on the table cooperate with other guides on the swinging supports to guide the pressing element into its correct position in parallelism with the table and to hold it there while the pressing is being performed. In the present embodiment these guides are rolls 29 carried by pins 30 extending from the table and cam members 31 and 32 carried by the supports 22 and situated to engage the rolls as the parts move into operative position. The parts are so timed that as the table rises, the pressing element will be swung forward until it comes into parallelism with the table and thereafter the pressing element will remain stationary while the table continues its rising movement to press the gar-

ments thereon. This operation is provided so as to avoid any tendency to rub or wrinkle the garments due to any lateral movement of the pressing element and table relative to each other while the garment is being pressed.

It will be noted that each cam member 31 is so shaped that the upper cam surface thereof leads to the front edge 33 of the swinging support to which it is attached, while the cam member 32 is shaped to present an open throat or passageway 34 between it and the edge 33. The parts are so timed that as the table rises the supports 22 will have such a forward movement as to cause the rolls 29 to enter in between the cams 31, 32, and when the rolls bring up against the faces 33 of the supports 22, further forward movement of the pressing element is prevented. The rolls are so positioned that at this time the pressing element 4 will be parallel to the table, and the table and pressing element will have approximately the relative positions shown in dotted lines Fig. 3. During the further upward movement of the table, the rolls 29 move up in the spaces 34 and the pressing element will be held in its parallel position so that when the pressure is applied to the fabric there will be no rubbing action which would tend to wrinkle the fabric, but instead the pressure will be applied perpendicularly. During the first part of the downward movement of the table, the pressing element 4 remains stationary until the rolls 29 strike the cam surface of the member 31 and then the pressing element will retreat backwardly, as will be obvious.

We will preferably provide a counterbalancing mechanism for the head so that there will be no undue strain on the parts when the head is in inoperative position. The counterbalance herein shown is in the form of counterbalancing weights 35 that are carried by or formed as part of arms 36 that are fast to shafts 37 journaled in stands or bearings 38. Each shaft has fast therewith another arm 39 which is connected by a link 40 to one of the supports 22. The construction is such that when the head is in its inoperative position, as shown in Fig. 3, the counterweights 35 are effective in counterweighting the head, while when the head is in its operative position, as shown in Fig. 2, the counterweights are practically ineffective.

In devices of this nature, it is customary to provide for steaming the garment while it is being pressed. In the present embodiment we arrange for this by providing a special form of table. The face of the table is foraminous, preferably by making it of perforated sheet metal 90, and this foraminous face is slightly spaced from the table and is covered with a pad 41 of cloth. Means

are provided for introducing steam into the space between the top of the table and the facing 90 when the pressing is being done, so that the steam will find its way through the cloth cover 41 to the garment being pressed. Steam is delivered beneath the pad 41 at a plurality of points by means of steam pipes 42 which pass up through the table and are connected to some suitable source of steam supply. In the present embodiment, we have made the table hollow so as to provide within it a steam space 43 into which steam may be admitted for keeping the table hot, and if desired the steam for steaming the garments may be taken from this steam space 43 by means of a suitable pipe 44, as clearly seen in Fig. 1. Where this is done, we propose to project the pipe 44 into the steam space 43 so that the steam which is used for steaming the garments will be as dry as possible. It is only necessary to steam the garments while the pressing is being done. In fact, it would be a detriment to have steam issuing from the table at all times because it would interfere with the operative putting the garments on or taking them off from the table. We have, therefore, provided means for automatically admitting steam to the pipes 42 whenever the table is elevated, so that the steam will be delivered only when the pressing is being done. We accomplish this herein by providing the pipe 44 with a valve 45 which is operated by an arm 46 to which is connected a spring 47 that normally holds the valve closed and to which is also connected a cord or flexible connection 48 that leads to the cross bar 20. The valve 45 rises and falls with the table and just before the table reaches the upper limit of its movement, the cord 48 becomes taut and operates to open the valve 45, as will be evident from the drawings. As soon as the table begins to descend, the spring 47 closes the valve automatically. The steam is supplied to the steam space 43 through one or more pipes 50 which are shown as telescoping into other pipes 51 that are secured to the base 7 and which connect to a suitable source of steam supply. Any other suitable arrangement for delivering steam to the chamber 43 might be adopted, however, without departing from the invention.

We have also provided means for automatically cushioning the downward movement of the table. It will be understood that in a large machine of this sort, the table has considerable weight and that it is of advantage to provide some means for cushioning its downward movement. We provide for this herein by an arrangement which closes the exhaust port of the valve 9 just before the table reaches the lower limit of its movement, so that the air which is confined in the cylinder constitutes a

cushion for the table. To accomplish this the table is provided with an arm 59 situated to engage the end of the rod 19 as the table descends. Referring to Fig. 2 the full line position of the rod shows the position when the valve is open to admit motive fluid to the cylinders. When the garment is pressed and the operative wishes to lower the table, the rod 19 is drawn upwardly into the dotted line position *a* thereby opening the exhaust valve. Before the table reaches the lower limit of its movement, the arm 59 engages the end of the rod and forces it downwardly thereby to close the valve, as shown in Fig. 3. As soon as the valve is closed further downward movement of the table will cease and the parts will be brought to rest in the position shown. To elevate the table again, the operative merely forces the rod 19 downwardly still more into the full line position shown in Fig. 2.

The operation of our improved device involves merely the placing of the garments on the table and the operation of the valve, which requires no particular manual effort on the part of the operative. Further, the machine takes up comparatively little room and the arrangement is such that when the table is lowered it is at a convenient height for the operative to place the garments to be pressed thereon or remove them therefrom. When the head 21 is in its inoperative position, as shown in Fig. 3, it is entirely out of the way of the operative and ample space is afforded for putting the garments in position.

It is desirable that the steam should be distributed as uniformly as possible throughout the space beneath the foraminous facing 90, in order that all parts of the garment may be uniformly steamed. To assist in distributing the steam, we have provided a deflector 60 at the outlet end of each pipe 42 which serves to deflect the steam laterally. This deflector is best seen in Fig. 4, and is in the form of a plate which will preferably be provided with a stem 61 adapted to enter the pipe 42 and serve as a means for positioning said plate. When the steam is admitted, the force of the steam will lift the plate against the facing 90, and said plate will operate to deflect the steam laterally.

It is not essential to the invention that the table should be given its vertical movement by pneumatic or hydraulic means as any other suitable mechanism for accomplishing this object might be employed. One of the features which is of importance is that the table is capable of rising and falling and may, therefore, be brought into a lowered position convenient for the operator to place the articles on, and may thereafter be elevated to accomplish the pressing, and another feature is that the pressing element has a lateral movement so that it is carried

back out of the way when the table is lowered, and still another important feature is the manner in which the pressing element is first moved into operative position in parallelism with the table before the latter completes its upward movement and then remains stationary while the table continues its upward movement, so that there will be no danger of wrinkling or displacing the garment by any lateral movement of the pressing element.

It will be understood, of course, that various changes may be made in the construction of the device without departing from the invention.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a fabric-pressing machine, the combination with a vertically-movable table, of a pressing element movable laterally relative to the direction of movement of the table into and out of operative position over the table, and means operated by the vertical movement of the table to give the pressing element its lateral movement and to hold it stationary during the pressing operation.

2. In a fabric-pressing machine, the combination with a vertically-movable table, of a pressing element above the table and movable laterally with relation to the direction of movement of the table into and out of a position in alinement and parallel therewith, and means connecting the table and pressing element whereby the latter receives its movement by the former, and is held stationary relative thereto during the pressing operation.

3. In a fabric-pressing machine, the combination with a vertically-movable table, means to elevate and depress the table, a pressing element located above the table, swinging supports for the pressing element, means for operating the swinging supports in timed relation to the vertical movement of the table to cause the pressing element to swing back out of line with the table when the latter is lowered and to swing forward into line with the table when the latter is elevated, said means holding the pressing element stationary relative to the table during the pressing operation.

4. In a fabric-pressing machine, the combination with a base, of a vertically-movable table sustained thereby, a pressing element above the table, swinging supports for the pressing element pivoted to the base, means connecting said supports to the table whereby the pressing element is moved laterally as the table rises and falls, and means to limit the lateral movement of the pressing element when the latter reaches its operative position above the table, while permitting the table to continue its upward movement against the pressing element.

5. In a fabric-pressing machine, the combination with a base, of a vertically-movable table sustained by the base, swinging supports pivoted to the base, a pressing element carried by said supports, pneumatic means to elevate the table, means connecting said table with said supports whereby as the table rises the pressing element is swung into operative position above the table, and means to limit the swinging movement of the pressing element when it reaches its operative position, and hold it stationary during the pressing operation.

6. In a fabric-pressing machine, the combination with a base, of cylinders carried thereby, pistons in the cylinders, a table supported by the pistons, a pressing element above the table, a valve to control the admission of motive fluid to the cylinders and the exhaust therefrom, and means operated by the table as it descends to close said valve thereby to cushion the downward movement of the table.

7. In an ironing machine, the combination with a table having a foraminous face, of a pressing element situated above the table, means to elevate the table against the pressing element, means to deliver steam through said foraminous face, a valve controlling the delivery of steam, and means controlled by the movement of the table to open said valve when the table is elevated and to close said valve when the table is lowered.

8. In a fabric-pressing machine, the combination with a vertically-movable table, of a pressing element movable laterally relative to the table, means to move the table vertically toward the pressing element, and means operated by the movement of the table to move the pressing element laterally into a position over the table and in parallelism therewith during the first part of the upward movement of the table, said pressing element remaining at rest during the final upward movement of the table.

9. In a fabric-pressing machine, the combination with a vertically-movable table, of a pressing element, swinging supports for the latter to permit it to swing laterally into and out of operative position, means to give the table an upward vertical movement, and means operated by the movement of the latter to swing the pressing element into position over the table and in parallelism therewith during the first part of the upward movement of the table, said pressing element remaining at rest during the final upward movement of the table.

10. In a fabric-pressing machine, the combination with a vertically-movable table having a foraminous face, of a pressing element movable laterally relative to the table and normally occupying a position out of line with the table, means to move the table vertically toward the pressing element and

simultaneously move the pressing element laterally into a position over and parallel with the foraminous face of the table, and means to project steam through said foraminous face while it is pressed against the pressing element.

11. In a fabric-pressing machine, the combination with a vertically-movable table having a foraminous face, of a pressing element movable laterally relative to the table, means to move the table vertically toward the pressing element and simultaneously move the pressing element laterally into a position over and parallel with the foraminous face of the table, a valve to admit steam to said foraminous face, and means operated by the movement of the table to open said valve when the table is elevated against the pressing element.

12. In a fabric-pressing machine, the combination with a vertically-movable table, of a laterally-movable pressing element situated above the table, pneumatic means to elevate the table, means operated by the upward movement of the table to swing the pressing element into operative position, a valve controlling the operation of the pneumatic means, said valve having an exhaust port which when open permits the table to descend, and means for automatically closing the exhaust port to trap some of the motive fluid and thereby cushion the descent of the table.

13. In a fabric-pressing machine, the combination with a vertically-movable table having a work-supporting face, means to elevate and depress the table, a press-

ing element located above the table and having a pressing face all points of which act simultaneously against the table, swinging supports for the pressing element, and means for operating the swinging supports in timed relation to the vertical movement of the table to cause the pressing element to swing back out of line with the table when the latter is lowered and to swing forward into line with the table and with its pressing face parallel to that of the table when the latter is elevated.

14. In a fabric-pressing machine, the combination with a vertically-movable table having a work-supporting face, of a pressing element movable laterally relative to the direction of movement of the table and normally occupying a position out of line with the table and having a pressing face all points of which act simultaneously against the table, and means to move the table vertically and the pressing element laterally in timed relation to each other so as to bring the pressing element over the table with its face parallel with that of the table when the latter is elevated and to move the pressing element backwardly into its normal position when the table is lowered.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

TOM PATCHETT.
JAMES W. BURKE.

Witnesses:

FREDERICK S. GREENLEAF,
E. E. BOIT.