

(No Model.)

6 Sheets—Sheet 1.

D. GESSNER.
CLOTH PRESSING MACHINE.

No. 576,666.

Patented Feb. 9, 1897.

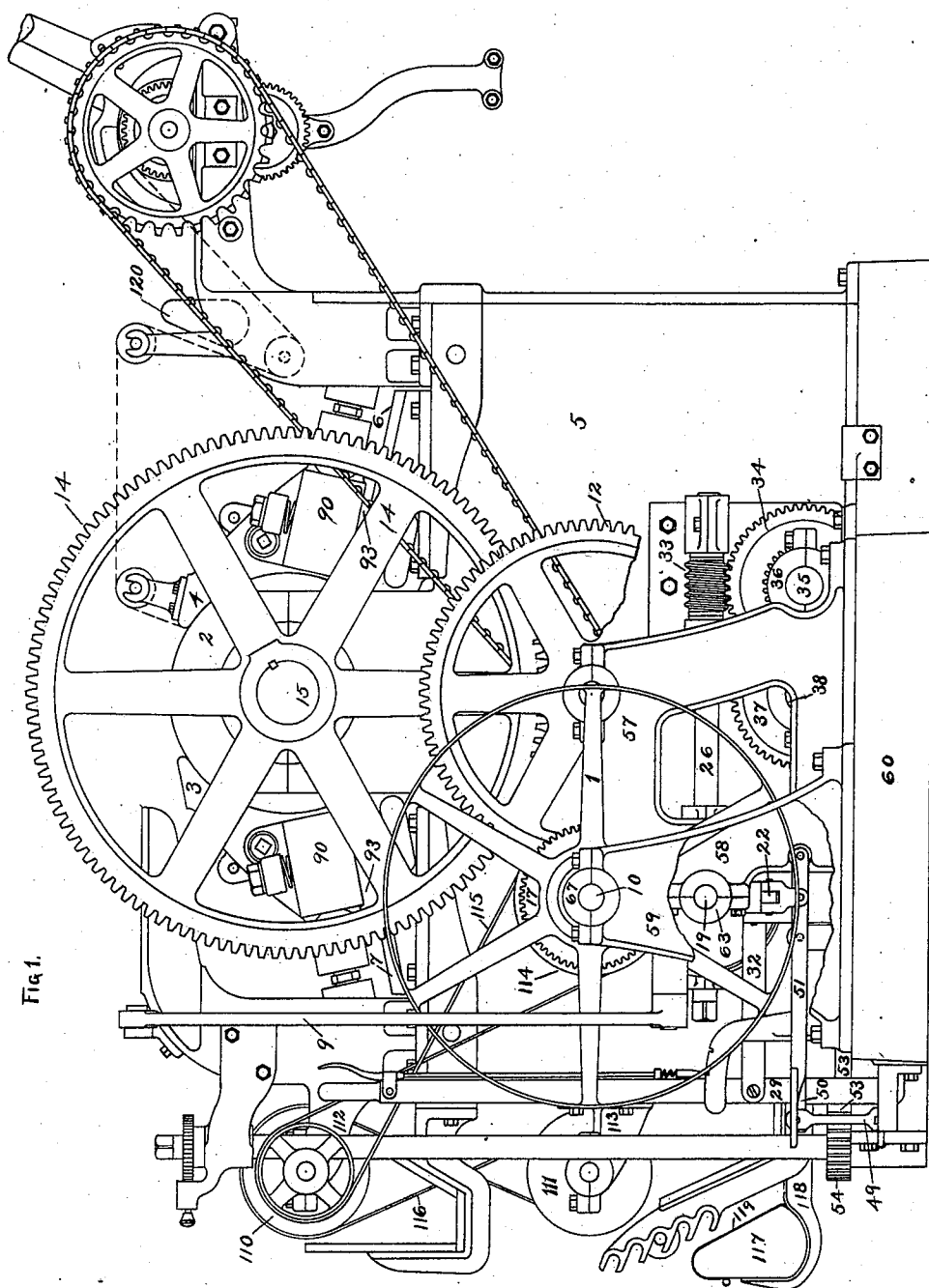


Fig. 1.

Witnesses

M. Wilson

Harry Lydecker.

Inventor

David Gessner

W. Clifford & Hall Attys

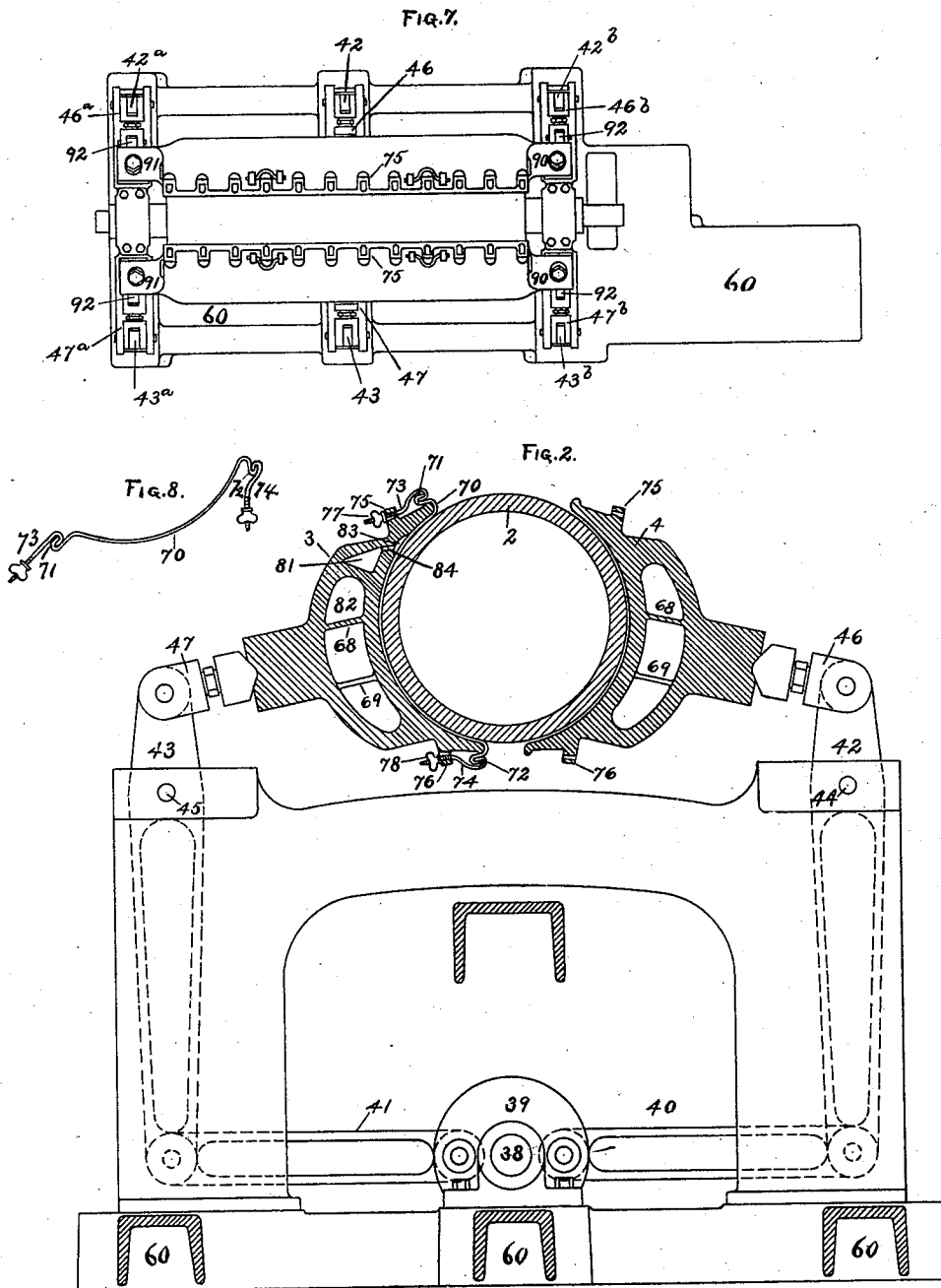
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Witnesses
M. Wilson
Harry Lydecker

Inventor
David Gessner &
Sifford & Pull Attys

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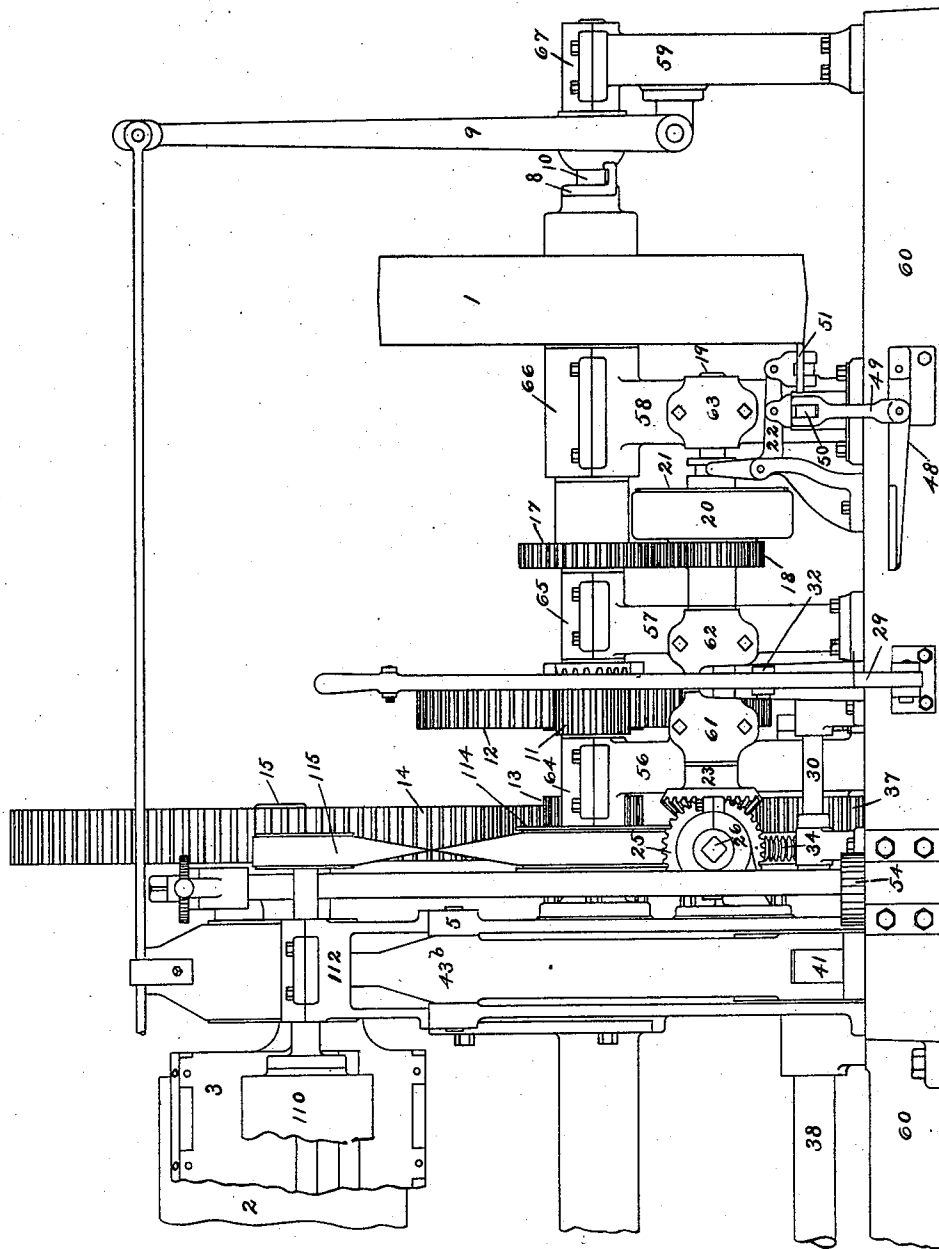
6 Sheets—Sheet 3.

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FIG. 3.



Witnesses
M. Wilson
Harry Lydecker.

Inventor:
David Gessner
Gifford & Price Attys

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FIG. 4.

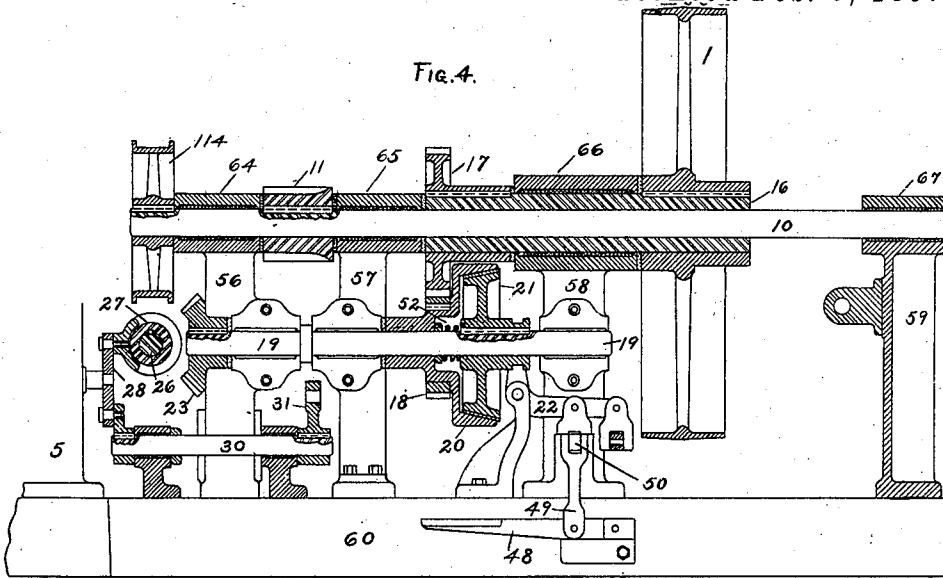


FIG. 5.

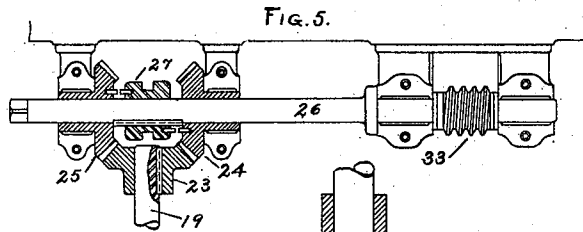


FIG. 10.

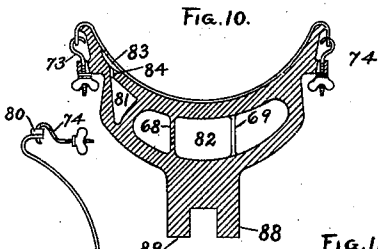


FIG. 11.

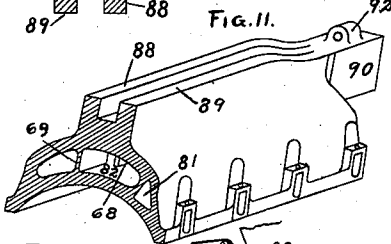


FIG. 6.

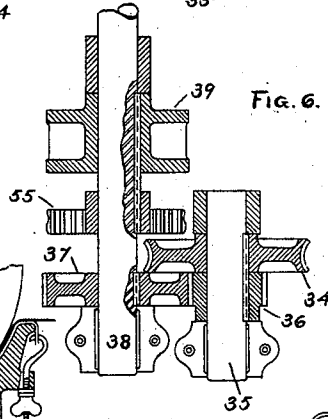


FIG. 13.

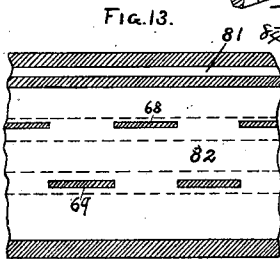


FIG. 12.

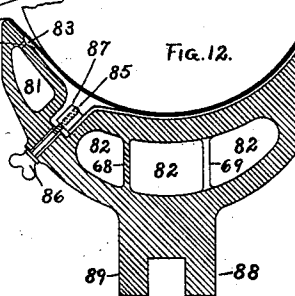
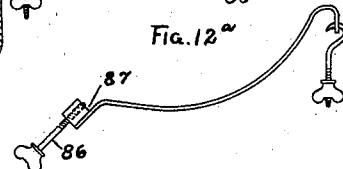


FIG. 12^a.



Witnesses

M. Wilson.

Harry Lydecker.

Inventor

David Gessner &
Clifford & Pile Atty's

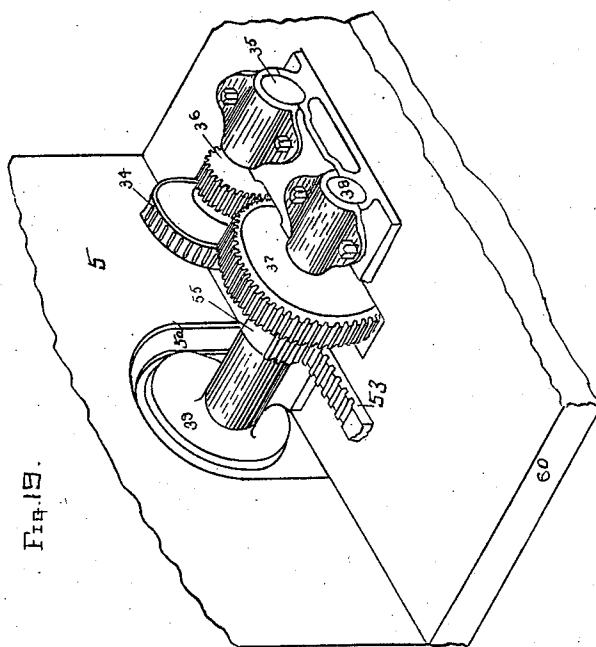
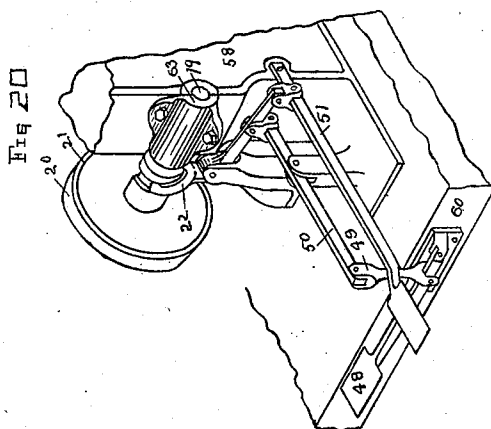
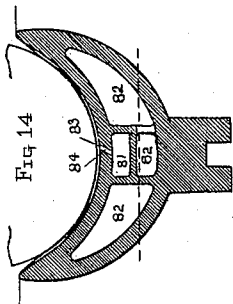
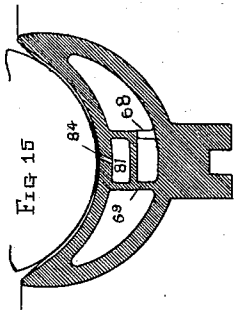
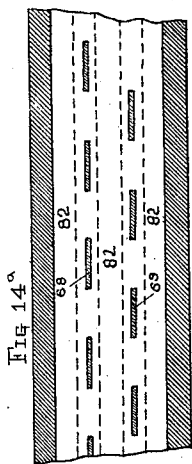
(No Model.)

6 Sheets—Sheet 5.

D. GESSNER.
CLOTH PRESSING MACHINE.

No. 576,666.

Patented Feb. 9, 1897.



Witnesses:
M. Wilson
Chas. J. Rathjen

Inventor:
David Gessner
by *Gifford & Bull* Atty's.

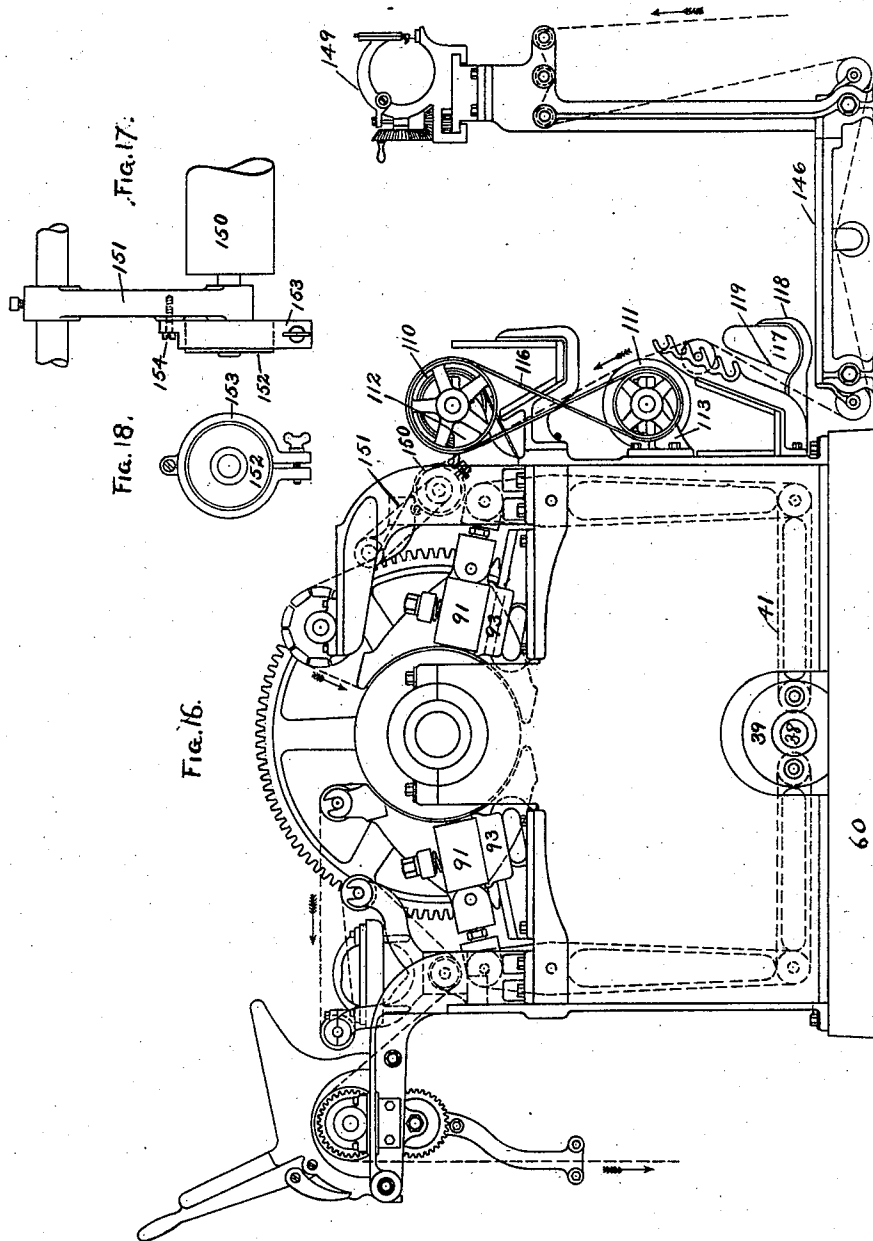
(No Model.)

6 Sheets—Sheet 6.

D. GESSNER.
CLOTH PRESSING MACHINE.

No. 576,666.

Patented Feb. 9, 1897.



Witnesses

Wm. Wilson
Harry Lebeck

Inventor:

David Gessner
Clifford & Full Att'y

UNITED STATES PATENT OFFICE.

DAVID GESSNER, OF WORCESTER, MASSACHUSETTS.

CLOTH-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 576,666, dated February 9, 1897.

Application filed December 18, 1894. Serial No. 532,138. (No model.)

To all whom it may concern:

Be it known that I, DAVID GESSNER, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Cloth-Pressing Machines, of which the following is a specification.

In the accompanying drawings, Figure 1 is an end view of the machine, looking at the end on which the driving mechanism is situated. Fig. 2 is a cross-section taken intermediate the two end frames with parts omitted. Fig. 3 is a front view of the driving mechanism. Fig. 4 is a sectional front view of the same. Fig. 5 is a detail of shaft 26 and connections. Fig. 6 is a detail of shafts 35 and 38 and connections. Fig. 7 is a plan with driving parts omitted. Fig. 8 is an end view of jacket detached. Fig. 9 is an end view of another form of jacket detached. Fig. 10 is a cross-section of bed-plate with jacket attached. Fig. 11 is a sectional isometric view of the bed-plate casting. Fig. 12 is a cross-section of another form of bed-plate with a jacket (shown in Fig. 12^a) attached. Fig. 12^a is a form of jacket detached. Fig. 13 is a longitudinal section through the bed-plate of Fig. 10. Figs. 14 and 15 are cross-sections of other forms of bed-plates. Fig. 14^a is a longitudinal section of the bed-plate of Fig. 14. Fig. 16 is a view of the machine from the end opposite to that from which Fig. 1 is taken, with the addition of a platform and sewing-machine attachment. Figs. 17, 18, 19, and 20 are details.

1 is the pulley by which the whole machine is driven.

2 is the cylinder.

3 and 4 are the bed-plates. The cylinder is mounted in fixed bearings in the end frames 5. Each of these end frames is preferably made of two members with a space 5^a between to receive the levers 42^a 43^a and 42^b 43^b for operating the ends of the bed-plates. The bed-plates are mounted on carriages 93.

6 and 7 are guideways or slides connected with frames 5, upon which the bed-plates move to and from the cylinder.

The cylinder is driven from the prime mover or pulley 1 by a chain of mechanism, which

is shown as consisting of the following members: Clutch 8, shifted into or out of action by the shifting-lever 9, drives shaft 10. Pinion 11, keyed on shaft 10, drives gear-wheel 12, connected with pinion 13, which drives gear-wheel 14, keyed to cylinder-shaft 15.

The bed-plates are reciprocated by a chain of mechanism connected with the pulley 1, which is shown as consisting of the following members: Pulley 1 is keyed to sleeve 16, which carries the gear 17, meshing with the gear 18, running loosely on shaft 19 and carrying one member 20 of a conical friction-clutch. (See Fig. 4.) The other friction-clutch member 21 is splined to shaft 19 and shifted by the shifting-lever 22. The bevel-gear 23 is keyed to the shaft 19 and meshes into the bevel-gears 24 and 25, running loosely upon the shaft 26. (See Fig. 5.)

27 is a clutch splined to the shaft 26 between the gears 24 and 25, with either of which it may be engaged by the operation of the shifting-lever 28, which is connected with the hand-lever 29 through the rock-shaft 30, finger 31, and the link 32.

33 is a worm fixed upon the shaft 26 and engaging with worm-wheel 34, (see Fig. 6,) keyed to the shaft 35, to which is also keyed the pinion 36, meshing with the wheel 37, keyed to the shaft 38, to which is also keyed the heads 39, to which are pivoted the links 40 and 41, pivoted to the levers 42 and 43, fulcrumed to the frame at 44 and 45 and bearing against the bed-plates through the links 46 and 47. (See Figs. 2, 3, and 16.)

The constant rotation of the prime moving pulley 1 in the same direction may be caused to either actuate or not actuate the bed-plates by shifting the clutch 21, Fig. 4. When actuating, it may be made to actuate them in either direction by shifting the clutch 27, Fig. 5.

The shifting-lever 22, by which the clutch member 21 is actuated, is moved to throw the clutch into engagement by the foot-lever 48, Fig. 4, connected with the shifting-lever 22, by the link 49 and the lever 50, so that the depression of the foot-lever 48 will force upward the long arm of the shifting-lever 22. The shifting-lever 22 is moved to throw the clutch out of engagement by the foot-lever 51,

Figs. 1, 3, and 20, the depression of which pulls downward the long arm of the lever 22. Therefore the attendant by pressing his foot on lever 48 will throw the clutch 21 into gear, and by pressing his foot on the lever 51 will throw it out of gear, the throwing out being assisted by the coiled spring 52, Fig. 4.

The extent to which the bed-plates are forced up toward the cylinder in the forward movement for pressing will be limited by a rack 53, Fig. 1, abutting against the adjustable notched stop-cam 54 and geared to the shaft 38 by the segment-gear 55, Figs. 6 and 19. In the forward movement for pressing, as soon as the end of the rack 53 strikes against the stop-cam 54, there will be a slip between the clutch members 20 and 21, by observing which the attendant can disengage those clutch members as soon as the bed-plates have been forced up to a point for pressing predetermined by the adjustment of the stop-cam 54. In Fig. 7 it will be seen that there are three sets of these mechanisms for each bed-plate. The levers 42 and 43 and their links 46 and 47 are arranged at the middle of each bed-plate. The levers 43^a and 42^a and their links 47^a and 46^a are arranged at one end of the bed-plates. The levers 43^b and 42^b and their links 47^b and 46^b are arranged at the other end of the bed-plates. The links 46 and 47 at the middle of the bed require only abutting connections with the bed-plates, as shown in Fig. 2; but the links 46^a, 47^a, 46^b, and 47^b are shackled to the backs of the bed-plates, or rather to the eyes 92 on the projections 90 91 at the ends of the bed-plates, as shown in Fig. 7. The distribution of the pressure at the middle of the bed-plates, as well as at or near the ends, effectually prevents the springing of the bed-plate and enables truss-rods to be dispensed with and a much greater pressure to be attained than was possible even with the assistance of truss-rods. To enable the bed-plates to withstand this pressure without collapsing, they are provided, as shown in Fig. 2 and elsewhere, with supports 68 69, extending at intervals across the interior steam-space in the line of pressure.

The operative parts are mounted as follows: The shaft 10 and the sleeve 16, mounted upon it, have bearings upon the stands 56, 57, 58, and 59, all fixed to the same base-plate 60, which underlies the whole machine and to which end frames 5 are fixed. The shaft 19 has its bearings against the sides of the stands 56, 57, and 58 and is secured to those bearings by the caps 61, 62, and 63, by the removal of which caps the shaft 19 and the parts carried by it may be removed from the machine. At the same time the shaft 10 and its connected mechanism may be removed upward by the removal of the caps 64, 65, 66, and 67. Thus either the shaft 19 or the shaft 10 may be removed from the machine without dismounting the other, and at the same time they are prevented from springing by

being supplied with bearings arranged close up to the points at which the power is applied.

A means for securing the sheet-metal jackets 70 to their bed-plates is shown in Figs. 2 and 8. This consists in giving the edge of the sheet-metal jacket where it overlaps the edge of the bed-plate a reverse turn, as at 71 and 72, and providing a series of hooks, as 73 and 74, to engage at intervals with the reverse turn and secure it to a series of lugs, as 75 and 76, cast on the bed-plate. Set-nuts 77 and 78 may be provided on the ends of the hooks for adjustment.

One advantage of the reversed turn 71 or 72 is that it acts as a stiffener of the edge to distribute the strain of the hooks from one end of the edge to the other and prevent the sheet-metal jacket being rendered uneven on the surface by being drawn closer down opposite the hooks than at other points, as occurs when the edge is not stiffened. A somewhat similar result can be accomplished by substituting for the reverse turns reinforcing-bars, as 79 80, Fig. 9, being riveted at or near the edges of the sheet-metal jacket and being provided with perforations, which also extend through the jacket to receive the points of the hooks, as shown.

Bed-plate steam-chambers are shown in Figs. 2, 10, 11, 12, 13, 14, and 15. I have shown the bed-plate as containing a compartment separate from the general heating-compartment and intended for supplying steam to the cloth during its treatment. In Figs. 2, 10, 11, 12, and 13 this compartment is numbered 81 and is supplied with steam independently of the ordinary steam-heating-compartment 82. Adjacent to the compartment 81 the face of the bed-plate behind the sheet-metal jacket is grooved from end to end, as at 83, and the wall between this groove and the compartment 81 contains a series of perforations 84. The sheet-metal jacket is also perforated between the cloth and the groove 83. The steam from the compartment 81 passes through the perforations 84 into the groove 83, where it is equally distributed to the various perforations in the jacket and through them discharged onto the cloth.

In Fig. 14 the steam-compartment 81, the perforation 84, and the groove 83 are located in the middle of the bed-plate, and of Fig. 15 the same is true, excepting that the groove is omitted. In neither Fig. 14 nor Fig. 15 is any jacket shown; but if used the jacket will be perforated as described for the other figures.

The perforation of the jacket may be avoided, as shown in Fig. 12. In this case between the bed-plate chambers 81 and 82 a recess 85 is formed in the face of the bed-plate to receive one end of the sheet-metal jacket, so that that portion of the bed-plate adjacent to the heating-chamber 82 is faced by the sheet-metal jacket and at that portion adjacent to the steam-chamber 81 is unfaced by the sheet-metal jacket. The end of the sheet-metal

jacket extends into the recess 85 and is held there by a series of set-screws 86, which pass through holes in the bed-plate and are screwed into a bar 87, riveted to the edge of the sheet-metal jacket, Figs. 12 and 12^a. The bar acts as an edge-stiffener and may be replaced by a reverse turn similar to 71 of Fig. 2, as shown in Fig. 8. The recess 85 is wider than the thickness of the jacket, and the edge of the recess over which the jacket passes is rounded, as shown in Fig. 12. This affords play for the jacket and enables it to accommodate itself to the forces acting upon it.

The back of the bed-plate I construct as shown in Figs. 10 and 11, providing in line with the internal studs 68 and 69 the rearwardly-extending flanges or ribs 88 and 89, which are planed parallel with the face of the bed-plate. 90 91 are projections from the ends of the bed-plates containing the eyes 92, Figs. 7 and 11, to which the links 46^a, 46^b, 47^a, and 47^b are shackled. The bed-plate projections rest upon carriages 93, mounted on the guideways 6 7.

The brushes 110 111 are mounted upon brackets 112 and 113, Figs. 1, 3, and 16, secured to the outside of the machine, so that the brushes may be lifted off their bearings and reversed end for end with facility. The brush 110 is driven from the pulley 114 by the belt 115, and on the opposite side of the machine, Fig. 16, the brush 111 is driven from the brush 110 by the belt 116.

The cloth is steamed horizontally or approximately so. Before it reaches the brushes the steamer 117, located upon a bracket 118, is so arranged as to throw the steam into the cloth from the side 119, so that the cloth is steamed in passing upwardly to the first brush. By causing the steamer to emit the steam from its side instead of from the top I dispense with the friction necessary for guiding the cloth in a horizontal direction. Similarly after the cloth leaves the pressing-surfaces it is steamed by the steamer 120, Fig. 1, emitting steam from the side adjacent to the cloth. By having the steamer at the rear of the machine to steam sidewise against the face of the cloth after the cloth has been pressed the effect is to remove the finish more on the face than on the back, which is an improvement over the effect of steaming vertically. The sidewise steaming against the face of the cloth at the front of the machine is in advance of the brushing, and the location of the steamer near the bottom of the machine takes it out of the way of the operator and prevents its drip from falling on other parts of the machine.

In Figs. 17 and 18 are shown in detail the mounting of the friction-roll 150 upon the extremity of a swing-finger 151, the friction being produced by the pulley 152, surrounded by the clamp 153, hinged to the swing-finger at 154. Thus in whatever position the roll 150 may be placed by the adjustment of the swing-

finger to cooperate with the brush 110 the friction will always be exerted.

The object of the friction on roll 150 (which is shown in connection with the machine in Fig. 16) is to act as a holdback upon the cloth between it and the pressing-surfaces.

I claim—

1. In a cloth-pressing machine, in combination, a cylinder, a bed-plate, a prime mover, mechanism containing a friction-clutch connecting the bed-plate and prime mover, a spring tending to separate the parts of the friction-clutch, a lever, assisting said spring and means for operating said lever in a direction to assist said spring, substantially as described.

2. In a cloth-pressing machine, in combination, a cylinder, a bed-plate, a prime mover, mechanism containing a friction-clutch connecting the bed-plate and prime mover a lever for connecting and disconnecting the parts of said friction-clutch and two levers, whereby said first-named lever is operated in opposite directions, substantially as described.

3. In a cloth-pressing machine, in combination, the cylinder-shaft, the end frames supporting the frame, the base-plate, the shaft 10 carrying the prime mover, connections between said shaft and the cylinder-shaft, the shaft 19, connections between said shaft and the bed-plate and stands connected with the base-plate of the machine having bearings, respectively for said shaft 10 and said shaft 19, arranged substantially as described; whereby either of said shafts may be removed independently of the other, substantially as described.

4. In a cloth-pressing machine, in combination, a cylinder, a bed-plate, a shaft 38, connections between the bed-plate and said shaft, a prime mover and the following mechanism for actuating said shaft, viz: the worm 33, the worm-wheel 34 engaging therewith, the gear 36 driven by said worm-wheel, the gear 37 driven by said gear 36 and mechanism whereby said worm is actuated from said prime mover, substantially as described.

5. A rotary cloth-press bed-plate provided with an internal steam-chamber and a series of internal strengthening-ribs arranged alternately in said chamber, substantially as described.

6. In a rotary cloth-press, in combination, a sheet-metal jacket and a bed-plate; said bed-plate containing a heating-chamber, a separate steaming-chamber provided with an opening toward the cylinder, a recess 85 between said chambers and perforations between said chambers to admit the fastening attachments for the sheet-metal jacket; said recess being constructed substantially wider than the thickness of the sheet-metal jacket and being rounded at the edge over which the sheet-metal jacket passes, substantially as described.

7. A rotary cloth-press bed-plate combining in a single casting, a steam-heating chamber, a steam-chamber provided with an opening toward the cylinder and a recess intermediate the two wherein one edge of a jacket may be secured, substantially as described.

8. A rotary cloth-press bed-plate containing a steaming-chamber, a grooved surface next the cloth and an opening connecting said steaming-chamber with said groove, substantially as described.

9. In combination with a rotary cloth-press bed-plate, having a longitudinal recess in its face, a sheet-metal jacket having one of its edges terminating in said recess, substantially as described.

10. In a cloth-press, in combination, the cylinder, two bed-plates on opposite sides thereof, two end-frame uprights each provided with a central support for the cylinder-bearing and a bed-plate support on each side thereof, an intermediate-frame upright extending across under the cylinder and bed-

plates, each upright consisting of two parallel members, a base-plate to which all of said uprights are connected, the bed-plate-operating levers and the fulcrum-pins for said levers, each of which is supported on each side of each lever in bearings on the opposite sides of one of said uprights, substantially as described.

11. In a cloth-pressing machine, in combination, the cylinder, the bed-plates on opposite sides of the same, three levers arranged behind each bed-plate, means whereby the pressure of said levers is imparted to said bed-plates at three different points, a shaft 38, three heads 39 mounted thereon, means whereby each of said heads is connected with two opposite levers and means whereby said shaft 38 is oscillated, substantially as described.

DAVID GESSNER.

Witnesses:

M. WILSON,
J. E. GREER.