No. 646,275.

Patented Mar. 27, 1900.

M. J. FISHER.

ROTARY STEAM PRESS.

(Application filed Feb. 20, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. I.

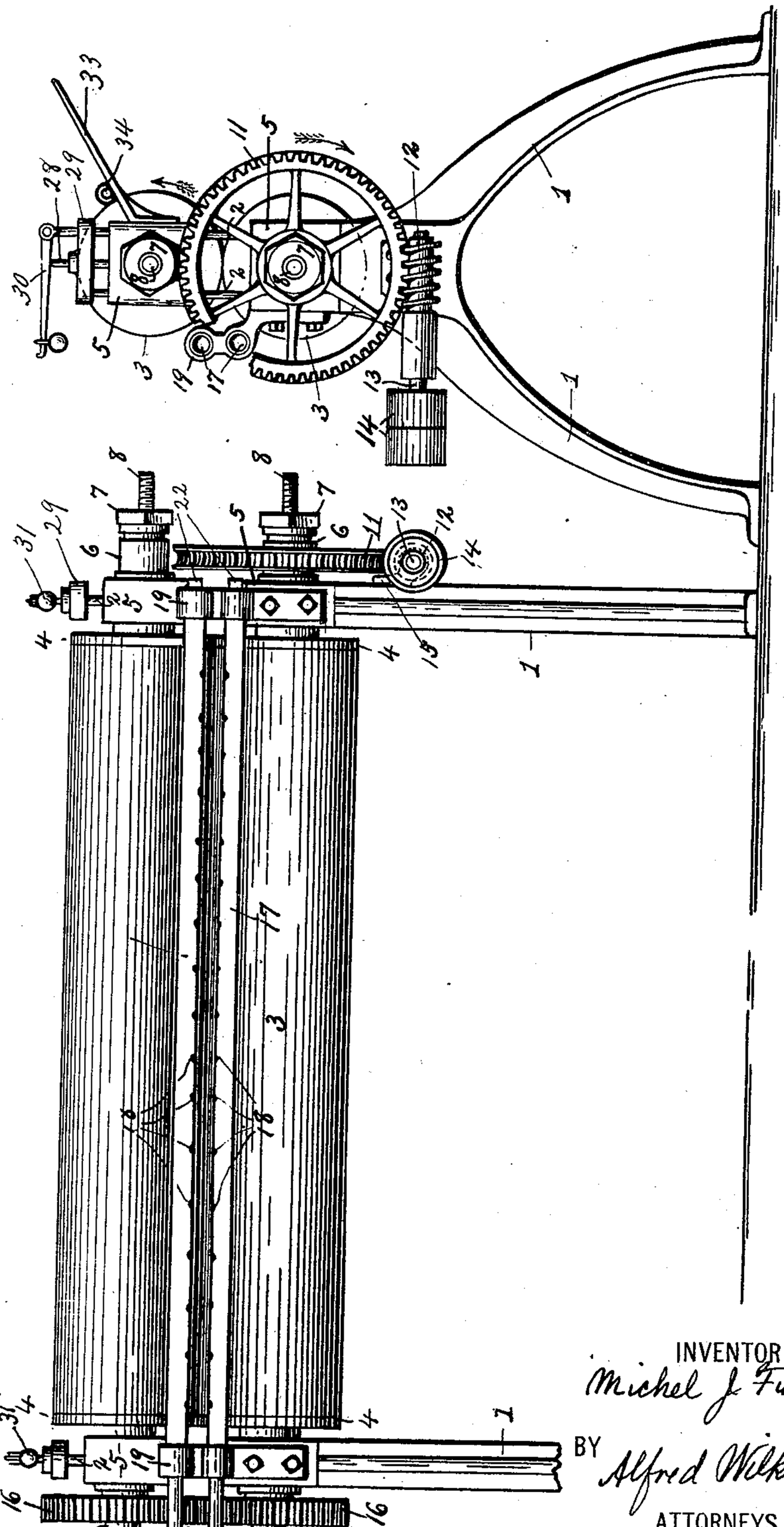

Fig. II.

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FIG. III.

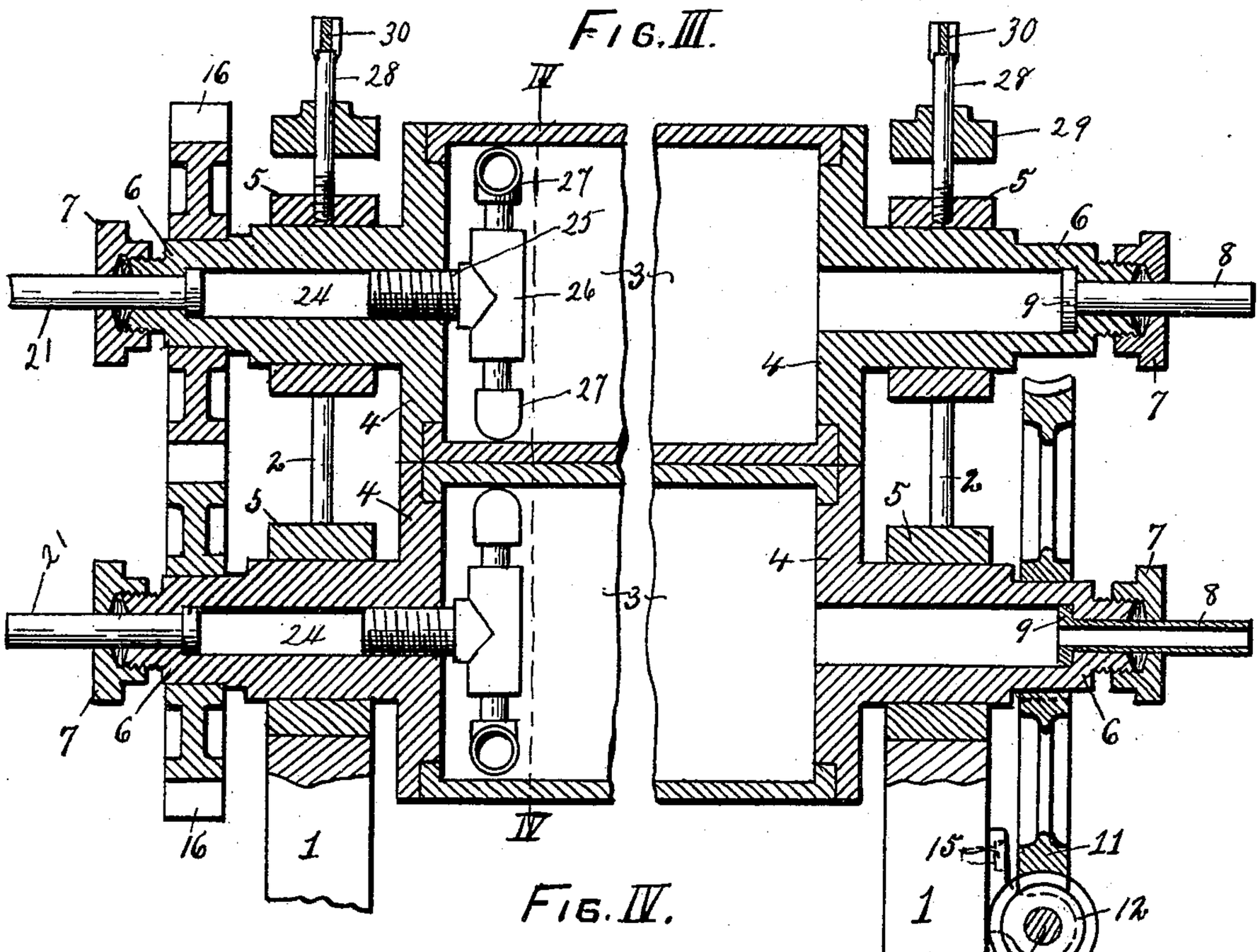
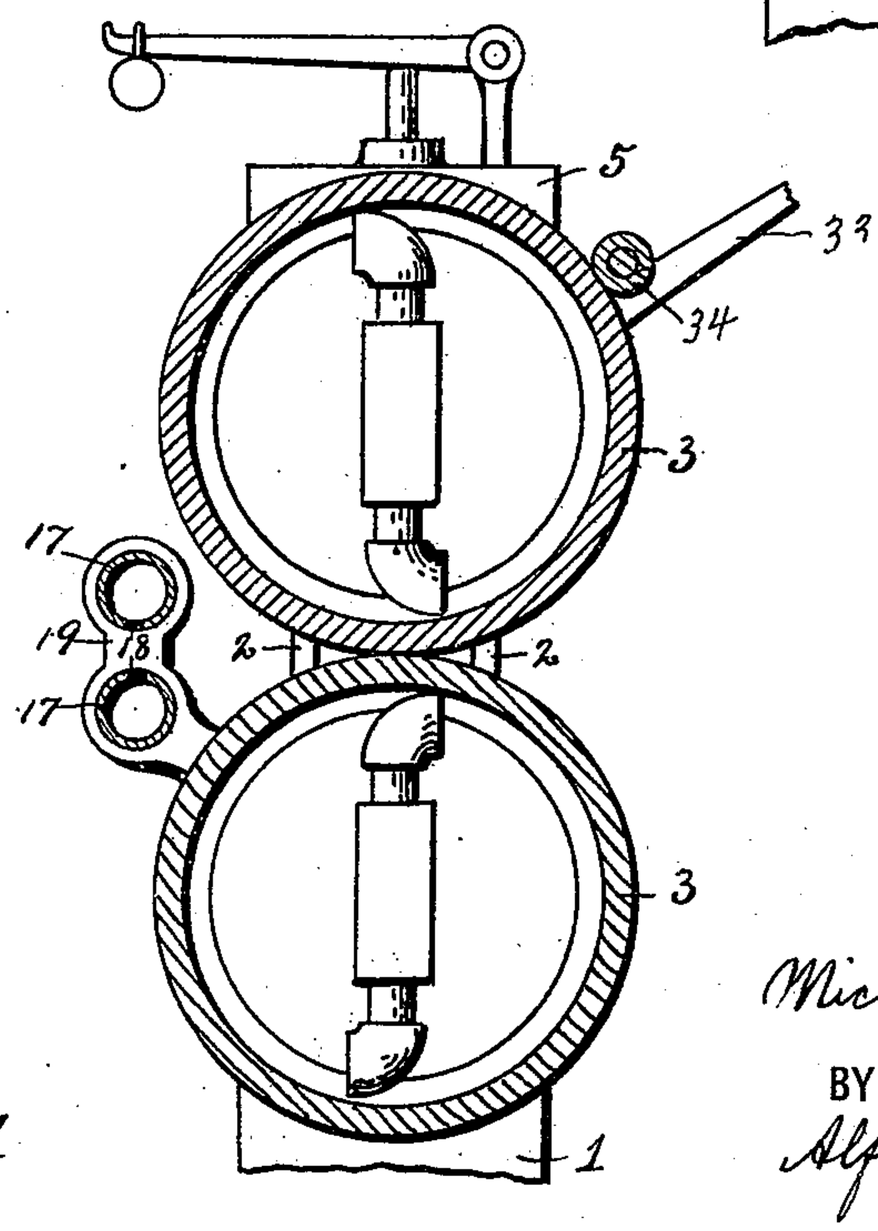


FIG. IV.



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MICHEL J. FISHER, OF UTICA, NEW YORK.

ROTARY STEAM-PRESS.

SPECIFICATION forming part of Letters Patent No. 646,275, dated March 27, 1900.

Application filed February 20, 1899. Serial No. 706,161. (No model.)

To all whom it may concern:

Be it known that I, MICHEL J. FISHER, of Utica, in the county of Oneida, in the State of New York, have invented new and useful Improvements in Rotary Steam-Presses, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention consists in a new and improved steam-press and finisher for knit fabrics, garments, &c.; and it consists of two steam-rollers or hollow cylinders through which live steam is passed during their operation, new mechanism for supporting and rotating the rollers in opposite directions, substantially in contact, to compress and finish the fabric, and a pair of perforated steam-pipes arranged a short distance apart and opposite the joint between the main rollers for steaming the fabric before it is pressed, a peculiar form of outlet for exhaust-steam and water of condensation, and in various other details of construction and operation by which a simple and effective machine is produced which is easily set up and taken down, so as to be convenient for transportation as well as operation.

My invention will be better understood by reference to the accompanying drawings, in which the same numerals indicate the same parts in all the figures.

Figure I is an end elevation of my improved press; Fig. II, a front elevation. Fig. III is an enlarged longitudinal section through the rollers, heads, collars, gears, &c. Fig. IV is a cross-section on line IV IV of Fig. III.

In the figures, 1 indicates the legs which constitute the supporting-frame, being connected together in pairs, one pair at each end of the press and carrying pairs of parallel slender rods 2 2 for supporting the rollers or hollow cylinders 3 3, fitted to the perforated heads 4 4, which are sustained and rotated in boxes 5 5, perforated to fit on the rods one above the other. The ends of the trunnions 6 6 are threaded for caps 7 7, which form packing-boxes for the steam-inlet pipes 8 8, formed with enlarged heads 9 9 on their inner ends. On the trunnion of the lower roller is keyed a gear 11 for rotating the rolls, to which power is applied by the worm 12, secured on one end of the short shaft 13, carrying pulleys 14 for the belt at its opposite end and sustained in bracket 15, bolted to the end of the frame. At the opposite ends the rolls are supported by a similar arrangement of rods, boxes, and heads, meshing gears 16 16 being secured on their trunnions, by which motion is communicated from one to the other, from the lower to the upper, as here shown, so that they will turn in opposite directions, compressing and finishing the fabric fed between. In front of the joint between the main rollers are arranged the steam-pipes 17 17, perforated at 18 18 and carried in supports 19 19, bolted to the front of the frame, for heating and moistening the fabric by steam as it enters the press.

8 8 are the steam-inlets to the main rollers; 21 21, the steam-outlets; 22, the inlet-pipes for the steam to the steam-pipes 17 17, and 23 corresponding outlet-pipes, with all of which pipes of any desirable construction are connected for the steam.

Within each roll, at its exhaust or outlet end, is secured the outlet of peculiar construction for the exhaust-steam and water of condensation. This outlet is screwed into the exhaust-opening 24, and consists of the piece of piping 25, to which is attached the T connection 26, carrying on its opposite ends the ordinary elbows 27 27, so arranged with their open mouths set reversely that as they rotate the exhaust-steam passes out through the upper, while through the lower passes the water of condensation, which is dipped up thereby from the bottom of the roller.

For maintaining a regulable but slightly-yielding pressure between the rollers pins 28 28 are provided, resting upon or secured to upper boxes 5 5 and extending upwardly through cross-heads 29 29, to which are also secured levers 30 30, resting on the pins and carrying adjustable weights 31 31 to regulate the pressure on said pins and between the rollers. To these upper boxes are also secured inclined supports 33, on which is carried a roller 34, having shoulders on each end to prevent longitudinal displacement, for supporting the cloth after it is pressed. The cloth is at the beginning given one turn around this roller, after which it is rotated and pushed up the inclines by frictional contact with the upper roller 3. Each press need not be lim-

ited to a single pair of presser-rollers, but a third roller may be arranged above to coöperate with upper roller 3, or an additional pair, for which, of course, other perforated steam-pipes and steam connections must be added.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a roller-press for fabrics and garments, the combination of rollers rotatably supported in suitable supports and having steam or hot-air inlet and outlet pipes at their respective ends for conducting steam or hot air through the rollers, means for rotating said rollers in opposite directions, parallel perforated steam-pipes suitably supported and arranged at a small distance from each other opposite the joint between said rollers, steam inlet and outlet pipes to said perforated steam-pipes, inclined supports carried on said roller-supports and extending rearwardly and upwardly therefrom, and a cloth-receiving roller resting on said inclined supports in contact with one of said steam-rollers by which it is frictionally rotated; substantially as described and shown.

2. In a roller-press for fabrics and garments, supporting-legs arranged in pairs at each end of the press, vertical parallel rods supported thereon, upper and lower boxes having circular openings fitted to said rods, steam-cylinders secured to perforated heads having trunnions fitted to rotate in the openings in said boxes and extending outwardly therethrough, steam-inlet pipes connected to said trunnions at one end and steam-outlet pipes to the trunnions at the opposite end for conducting steam through the cylinders, meshing gears secured to said trunnions at one end, a gear secured to one of said trunnions at the opposite end, means for communicating motion to said latter gear to rotate the cylinder, inclined supports secured to said upper boxes at each end of the press, extending rearwardly and upwardly therefrom, a cloth-receiving roller having shoulders at each end resting freely on said inclined supports and rotated frictionally by contact with said upper steam-roller; substantially as described and shown.

3. In combination, in a press for knit goods and similar fabrics, pairs of supporting-legs, pairs of parallel vertical rods arranged thereon, cross-heads connecting the upper ends of each pair of rods, square boxes vertically perforated to fit on said rods at each end, the upper resting on the one immediately below it, circular openings in said boxes, heads having hollow trunnions fitted to said openings, said heads supporting between them hollow cylinders forming rollers substantially in contact, steam-inlets secured in said hollow trunnions by packing-boxes with screw-caps screwed on the outer ends of trunnions, a gear keyed on one of said trunnions at one end, a worm meshing therewith, means for operating said worm, and at the opposite end of said press gears in mesh keyed on the trunnions of both the upper and lower rollers to communicate reverse motion from one to the other, a vertical pin on the upper box on each side extending up through a perforation in each cross-head, a lever pivoted on said cross-head at one side and bearing on said pin, an adjustable weight on said lever, inlet and outlet pipes to each of said rollers for the steam, parallel, perforated, steam-pipes supported on the frame a short distance from each other and in front of the line of contact between the rollers, and inlet and outlet pipes to said steam-pipes.

4. In a steam-press for fabrics and garments, the combination of a pair of steam-rollers, suitable supports therefor, inlet and outlet pipes for conducting steam therethrough to heat the rollers, outlets for the steam and hot water connected to the exhaust-opening within the rollers at one end, having in combination a pipe secured in said opening, a T connection secured to said pipe and short angle-pipes or L's secured in the opposite ends of said T connections with their open mouths arranged reversely, said L's extending in opposite directions adjacent to the inner surface of the rollers.

5. In combination, in a press for knit goods, garments and similar fabrics, a suitable supporting-frame consisting of pairs of legs with pairs of slender rods extending upwardly therefrom, boxes with circular perforations therein threaded on said rods, a pair of hollow rollers having their ends fitted to said perforations and arranged substantially in contact to compress the articles passed between them, means for rotating said rollers in opposite directions, inlets and outlets to said rollers for steam, perforated steam-pipes arranged in front of the joint between said rollers a short distance apart, inlets and outlets for the steam to said pipes, and outlets for the steam and water arranged in the interior of each of said rollers at the outlet end, consisting of a T connection screwed into the exhaust-opening and short angle connections secured to each end of said T connection, having their open ends reversely arranged adjacent to inner surface of the rollers.

6. In combination, in a press for knit goods and similar fabrics, pairs of supporting-legs, pairs of parallel vertical rods arranged thereon, cross-heads connecting the upper ends of each pair of rods, two square boxes vertically perforated to fit on said rods at each end, circular openings in said boxes, heads having hollow trunnions fitted to said openings, said heads supporting between them hollow cylinders forming rollers substantially in contact, steam-inlets secured in said hollow trunnions by packing-boxes with screw-caps screwed on the outer ends of trunnions, a gear keyed on one of said trunnions at one end, a worm meshing therewith, means for operating said worm, and at the opposite end of said press

gears in mesh keyed on the trunnions of both the upper and lower rollers to communicate reverse motion from one to the other, a vertical pin on each of said upper boxes extending up through perforations in each cross-head, a lever pivoted on said cross-head at one side and bearing on said pin, an adjustable weight on said lever, inlet and outlet pipes to each of said rollers for the steam, a pair of parallel, perforated, steam-pipes supported on the frame a short distance from each other and in front of the line of contact between the rollers, inlet and outlet pipes to said steam-pipes, and in the interior of said rollers outlets for the steam and water of condensation consisting of T-pipes screwed in the steam-outlet, and short elbows with expanded mouths forming buckets on each end thereof secured to said T-pipe and extending radially with their mouths close to the inner surface of the respective rollers.

In testimony whereof I have hereunto signed my name.

MICHEL J. FISHER. [L. S.]

Witnesses:
WALTER N. KEMAN,
EDWARD H. REES.