(No Model.) 2 Sheets—Sheet 1.

W. D. BUTZ.

PRESS FOR KNITTED OR WOVEN FABRICS.

No. 408,578. Patented Aug. 6, 1889.

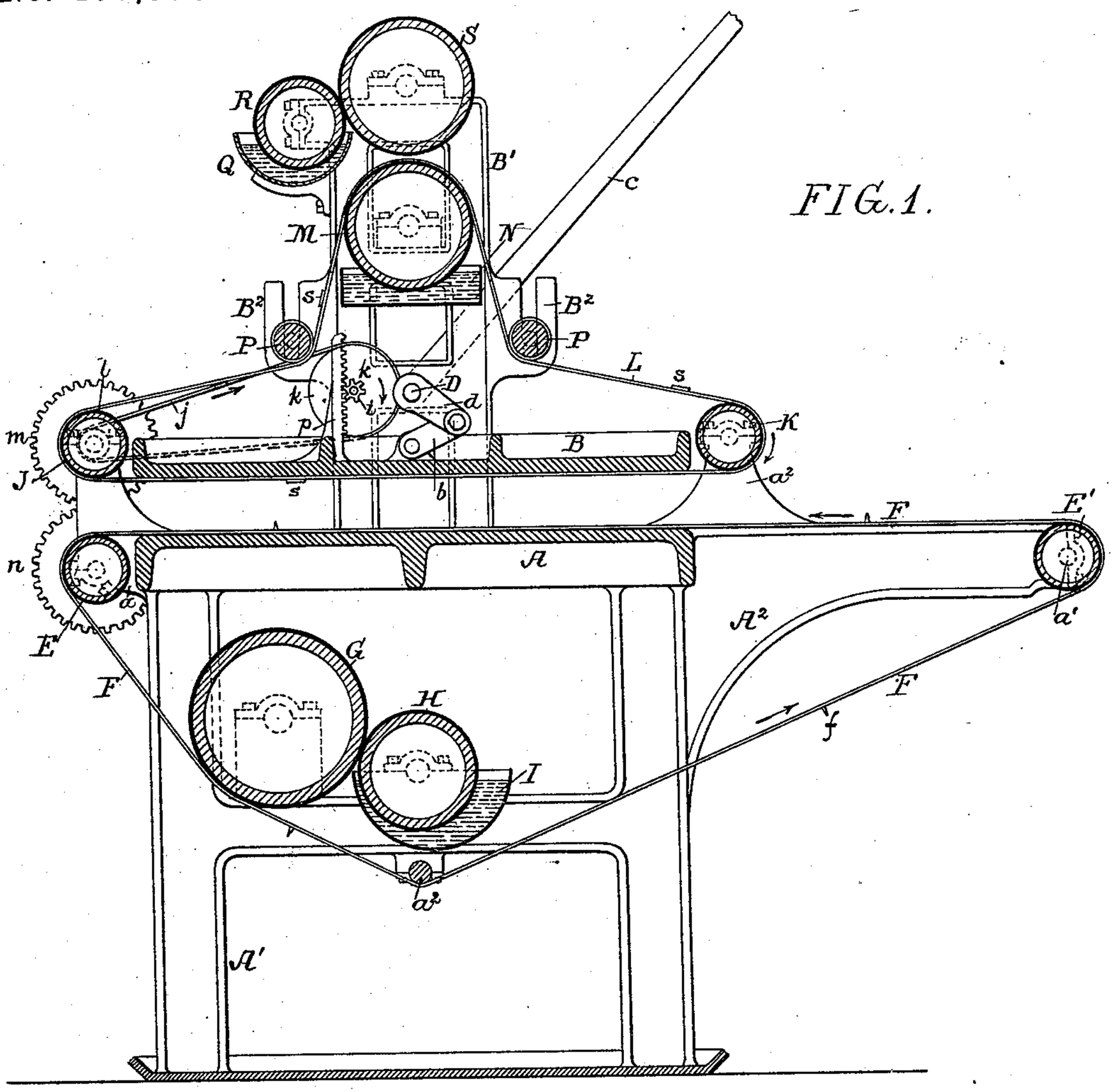


FIG. 1.

FIG. 2.

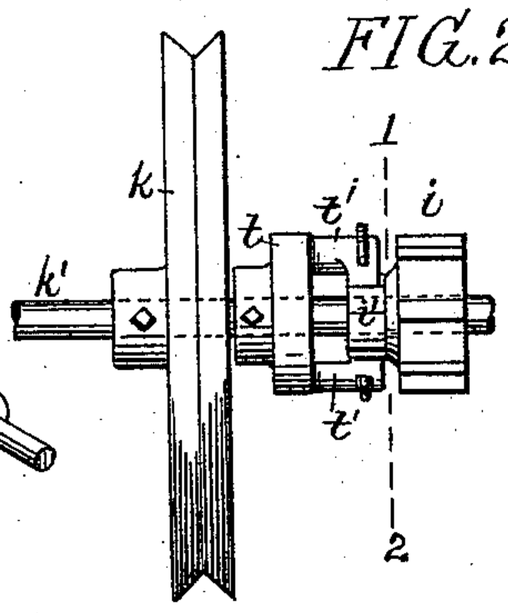


FIG. 3.

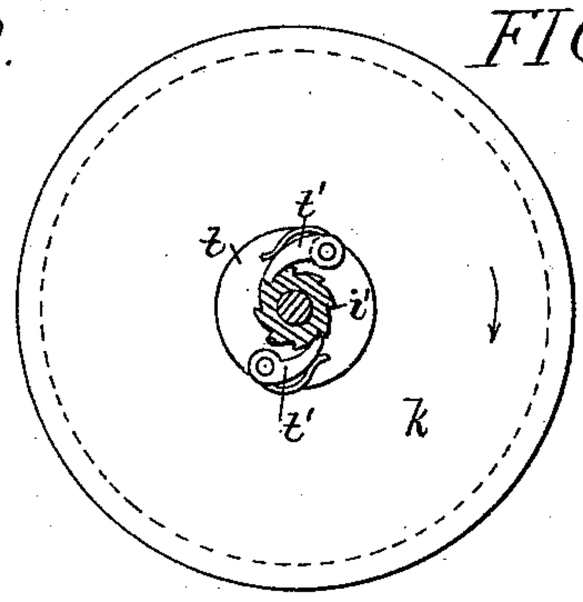
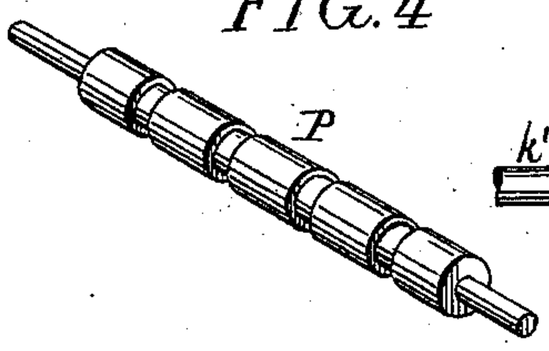


FIG. 4.



Witnesses:
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William D. Bonner.

Inventor:
Walter D. Butz
by his Attorneys
Howson & Howson

(No Model.) 2 Sheets—Sheet 2.

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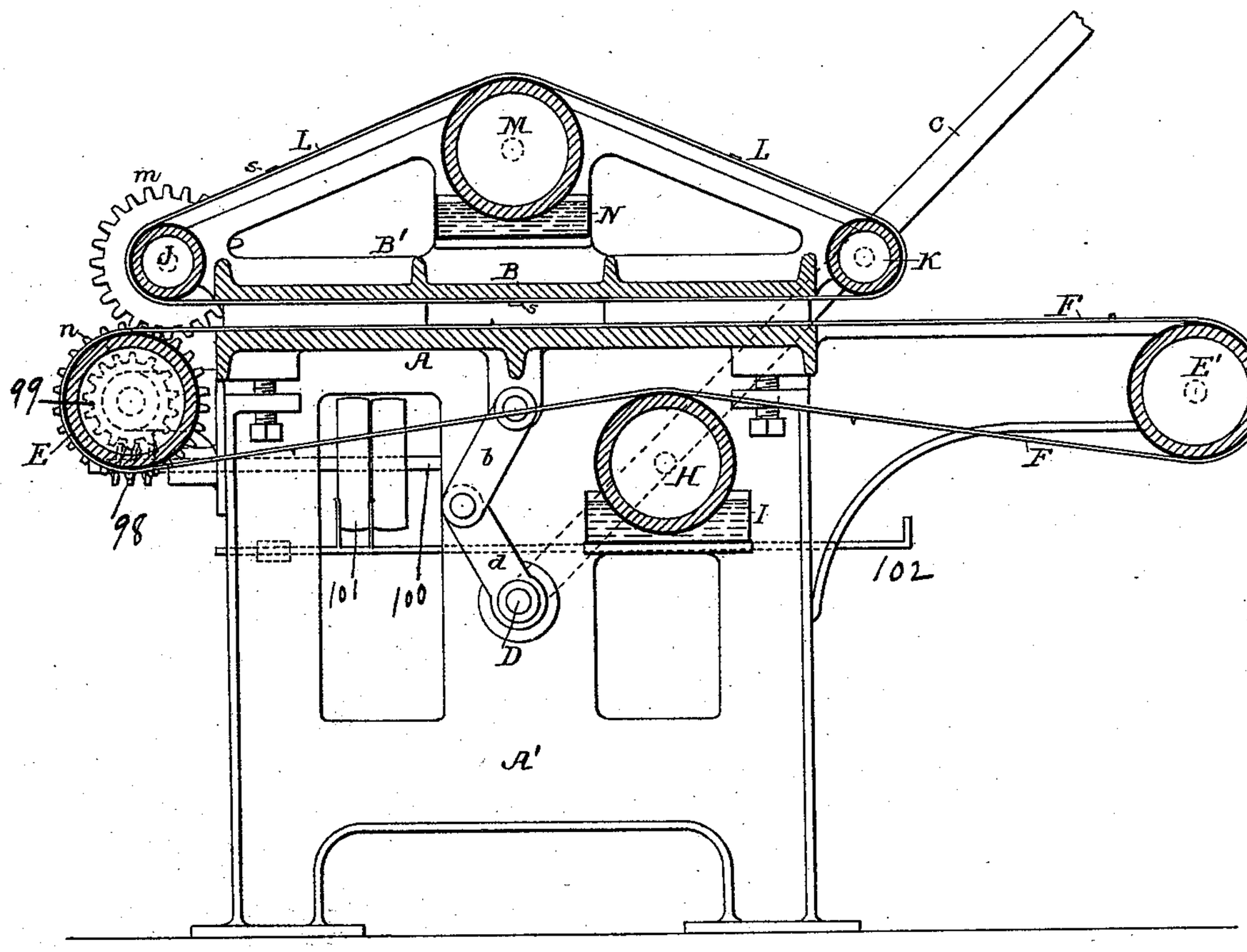
FIG. 5.



Witnesses:
Jno. E Parker
William D. Bonner.

Inventor:
Walter D. Butz
by his Attorneys
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UNITED STATES PATENT OFFICE.

WALTER D. BUTZ, OF NORRISTOWN, PENNSYLVANIA.

PRESS FOR KNITTED OR WOVEN FABRICS.

SPECIFICATION forming part of Letters Patent No. 408,578, dated August 6, 1889.

Application filed September 15, 1888. Serial No. 285,458. (No model.)

To all whom it may concern:

Be it known that I, WALTER D. BUTZ, a citizen of the United States, and a resident of Norristown, Montgomery county, Pennsylvania, have invented certain Improvements in Presses for Knitted and Woven Fabrics, of which the following is a specification.

One object of my invention is to facilitate the damp pressing of knitted, woven, or other textile fabrics; and a further object is to provide for imprinting numbers, letters, or other marks on the goods simultaneously with the pressing operation. These objects I attain in the manner fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of my improved press. Fig. 2 is an enlarged side view of part of the same. Fig. 3 is an end view of the same and a transverse section on the line 1 2, Fig. 2. Fig. 4 is a detached perspective view of a roller forming part of the press, and Fig. 5 is a view of a modified form of press.

I will describe my improved press as designed for pressing hosiery; but it will be understood that it is applicable for pressing other knit goods or woven or other textile fabrics.

The chief difficulty with the presses now in use is that the application of sufficient force to properly press the goods causes such compression of the fibers that a shiny appearance is imparted to the goods when pressed, this being especially the case with woolen goods. In order to overcome this objection, I so construct the press that dampened belts or aprons may be used to raise the nap on the goods and facilitate the pressing of the same, such belts or aprons being preferably provided both at top and bottom, so that both sides of the goods may be acted upon simultaneously. I also utilize one of the belts, preferably the top one, to carry type, which can be inked on the movement of the belt, and can be used to imprint numbers, letters, or other marks on the goods as the platens of the press are brought together.

Referring to the drawings, A′ is the frame of the press; A, the lower platen, and B the upper platen, these platens being of any shape desired, the shape depending on the character of the goods to be pressed. On the frame A′ is a supplementary frame B′, having bearings for the shaft D, secured to which are one or more crank-arms *d*, each connected to the upper platen B by means of a link *b*, the arm and link forming a toggle. The shaft D can rock in its bearings, and is provided with a suitable handle *c*, so that on the downward movement of said handle the upper platen B will, through the medium of the toggle, be moved toward the lower platen, and when the movement of the handle is reversed the direction of movement of the platen will likewise be reversed.

At one end of the frame A′ are brackets *a* for the journals of a drum E, and a bracket A^2, extending from the opposite end of the frame, carries at its outer end bearings *a′* for the journals of a drum E′, and over these drums E E′ passes a belt or apron F, made of any suitable material, preferably of some absorbent fabric, which will take up and retain sufficient moisture for the purpose desired. This belt or apron F passes down and under a guide-roller a^2, having its bearings in the frame A′ of the press, and on the passage of the belt down to the roller a^2 from the drum E it comes in contact with a roller G, the journals of which have their bearings in the frame of the machine. This roller is covered with felt or other absorbent material, and is for the purpose of transferring the water, sizing, or other liquid to the belt. The roller G is in contact with a roller H, which has journals adapted to bearings in the frame of the machine, and is partly submerged in a tank I, containing the liquid with which the belt or apron F is to be moistened. As the belt is moved by the gearing described hereinafter, the liquid will be transferred from the tank I to the belt F, and from the belt F to the goods to be pressed.

In the upper portion of the bracket *a* are bearings for the journals of a drum J, and at the opposite end of the frame A′ is a standard a^2, having bearings for the journals of a drum K. These drums are situated at each end of the movable platen B, and over the drums passes a belt L, of absorbent material, this belt also passing over a drum M, preferably having an absorbent surface. The journals of the drum M are mounted in bearings in the supplementary frame B′, and the lower

portion of the drum M is contained in a tank N, in which is the moistening-liquid.

On each side of the frame B′ are vertically-slotted guides B^2, to which are adapted the journals of take-up rollers P P, the purpose of these rollers being to take up and give out the slack of the belt L due to the movement of the platen B toward the platen A, for it will be understood that the rollers J K are in the present instance secured to the frame A′ and do not move with the platen B. The drums J and E are geared together by spur-wheels *m* and *n*, and these drums act as drivers for the two belts L and F.

On the drum J is a belt-wheel *l*, over which passes, in the present instance, a belt *j*, which also passes over a pulley *k*, the shaft *k′* of which has its bearings in the frame of the machine. Loose on the shaft *k′* is a pinion *i′*, which gears into a vertical rack *p*, secured to the platen B, as shown in Fig. 1, and on the hub of the pinion *i* are ratchet-teeth *i′*, while to the shaft *k′* is secured a collar *t*, provided with spring-pawls *t′*—two in the present instance—so that on the raising of the platen the spur-wheel *i* will be rotated and its ratchet-teeth will engage with the pawls *t* and turn the shaft *k′*, and consequently the drums J and E, which impart movement to the moistening-belts. On the depression of the platen, however, the teeth *i′* will slip past the pawls and allow the platen to descend without operating the belt.

It will be evident that other common forms of gearing may be used for this purpose without departing from my invention—for instance, that shown in Fig. 5. In some instances, instead of using these belts L and F for dampening purposes they may be used to carry dye to the goods, so that the latter may be dyed at the same time that they are pressed.

I have shown in Fig. 1 a series of printing-rollers R S, with an ink-tank Q, which is mounted on the supplementary frame B′, a portion of the distributing-roller R being submerged in said tank, while the inking-roller S bears against said distributing-roller, so as to apply the ink uniformly to type *s*, which are secured at intervals to the belt or apron L and are of such height as to come in contact with the roller S when passing under the same. These type may either denote the size of the goods, the maker's name, or other matters, the printing being effected simultaneously with the pressing of the goods.

In some instances instead of having the small type shown the belts may be provided with larger type, in order to print designs upon the goods, dispensing with the usual hand-block system.

The rollers P P at the points where the type pass under them are grooved, as shown in the perspective view Fig. 4, so as to permit the passage of the type without contact with the rollers. I prefer in most instances to use rubber type as being the most convenient and best adapted for the purpose.

I may provide a series of pins *f* on the lower belt F, as shown in Fig. 1, the hosiery-boards, which are provided with perforations, being placed in position over these pins, so as to insure the accurate marking of the goods.

In treating hosiery the stockings are mounted on the usual boards and placed in position on the endless belt F. The upper platen then descends and presses and marks the hosiery under it, the upward movement of the platen causing a movement of the belts in the direction of their arrows, so that the stockings on the belt F will be fed in between the platens, and the stockings that have been previously pressed will pass out at the opposite end, this operation being repeated indefinitely.

In some instances I may press the stockings first with the boards in position on the pins of the belt and press them a second time without the use of the boards, the ends of the toe and heel portions of the stockings in this case being hooked over the pins of the belt to keep the stockings in proper position.

In Fig. 5 I have shown a modified form of press in which the upper platen is stationary and the lower one movable, the belts in this case being driven by worm-gearing 98 99 from a shaft 100, having pulleys 101 for receiving a driving-belt, and a belt-shipper 102, of any ordinary construction, being used to throw the belt from the fast to the loose pulley, and vice versa.

I claim as my invention—

1. The combination, in a press, of the fixed and movable platens, operating devices for said movable platen, with upper and lower dampening belts or aprons between said platens, and means for driving said belts, substantially as described.

2. The combination, in a press, of the stationary and movable platens, and operating devices for said movable platen, with a dampening-belt between said platens, driving-gear for said movable belt, and an operating device for said driving-gear attached to the movable platen, substantially as described.

3. The combination, in a press, of the fixed and movable platens, operating devices for said movable platen, moistening-belts passing between said platens, operating devices for the belts, liquid-tanks, and rollers for distributing the liquid upon the moistening-belts, substantially as described.

4. The combination, in a press, of the fixed and movable platens, and operating devices for said movable platen, with an endless belt passing between said platens and carrying type, and inking mechanism for said type, substantially as described.

5. The combination, in a press, of the fixed

and movable platens, operating devices for said movable platen, upper and lower endless belt-drums geared together, and devices whereby said drums are actuated from the movable platen, so that on the operation of the platen the belts will be moved simultaneously, substantially as described.

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

WALTER D. BUTZ.

Witnesses:
HENRY HOWSON,
WILLIAM D. CONNER.