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1,894,435

HOSIERY PRESS

Filed Nov. 27, 1925

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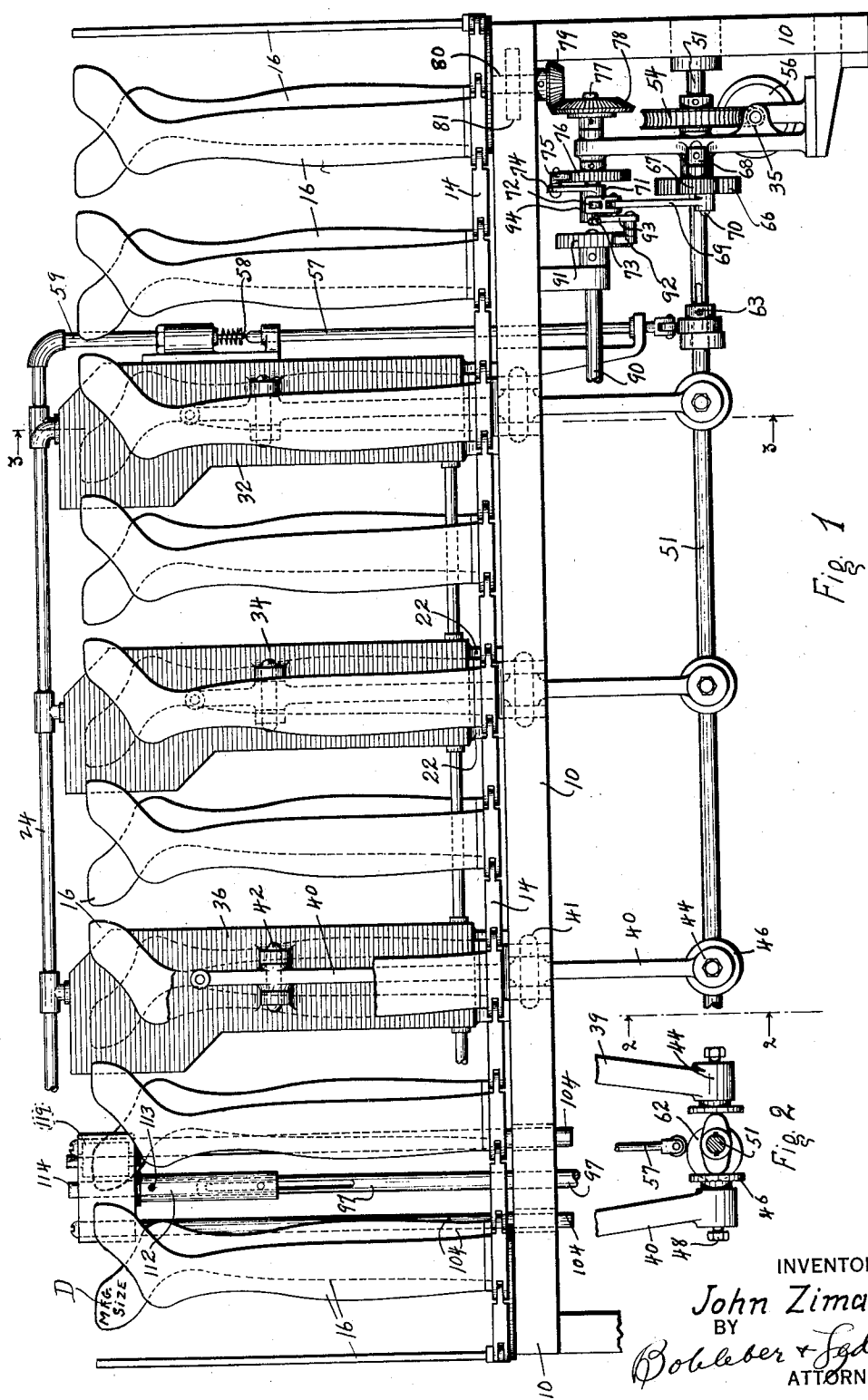


Fig. 1

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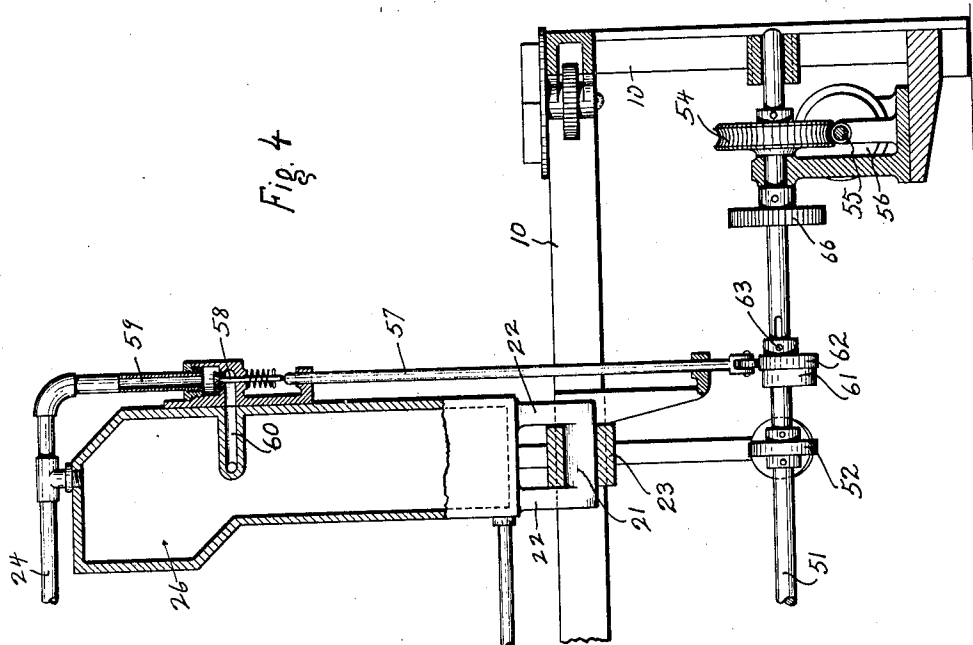
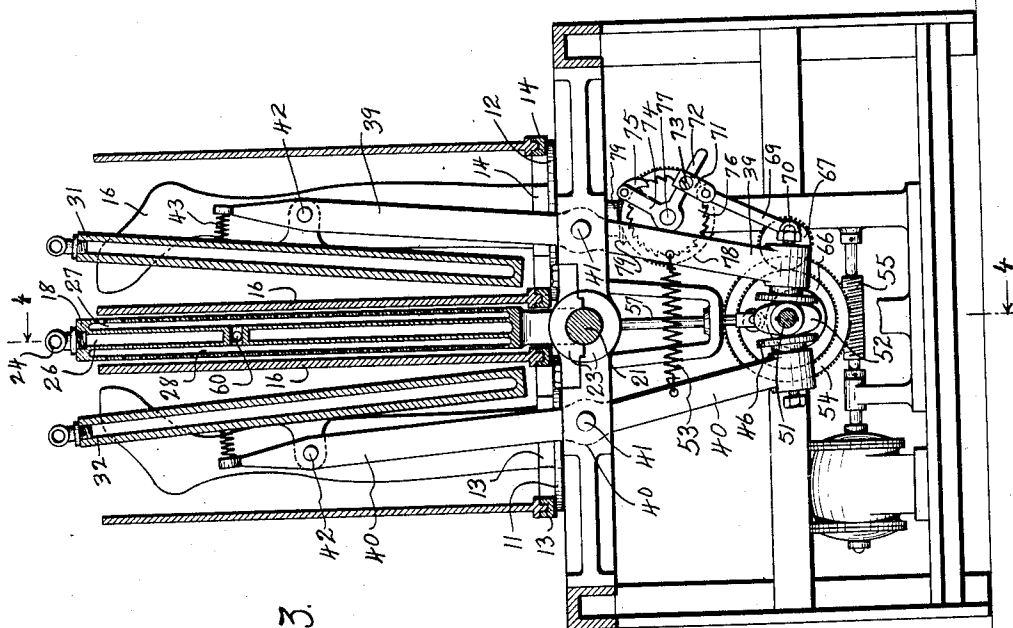
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6 Sheets-Sheet 2



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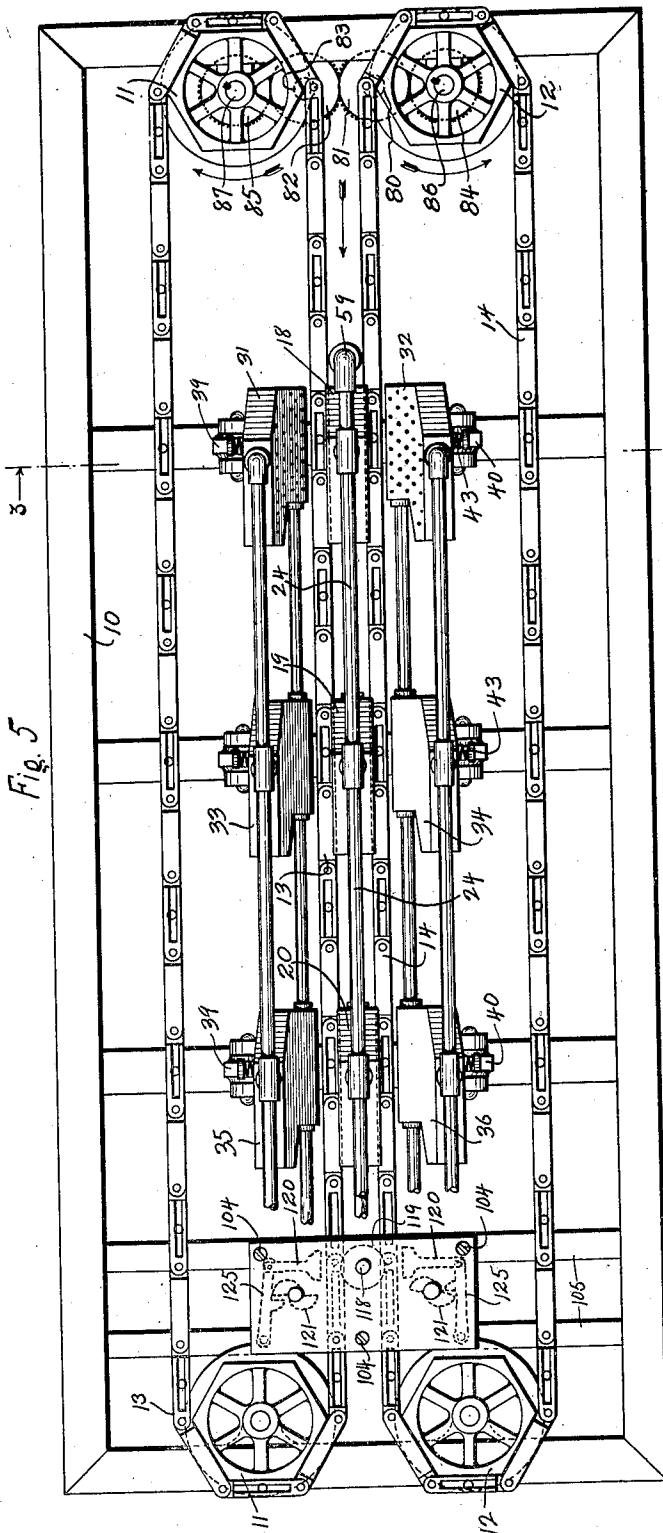
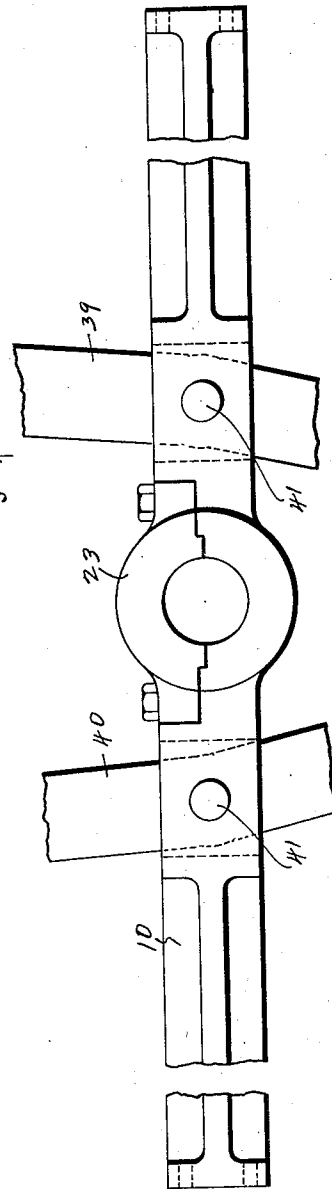
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HOSIERY PRESS

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6 Sheets-Sheet 3



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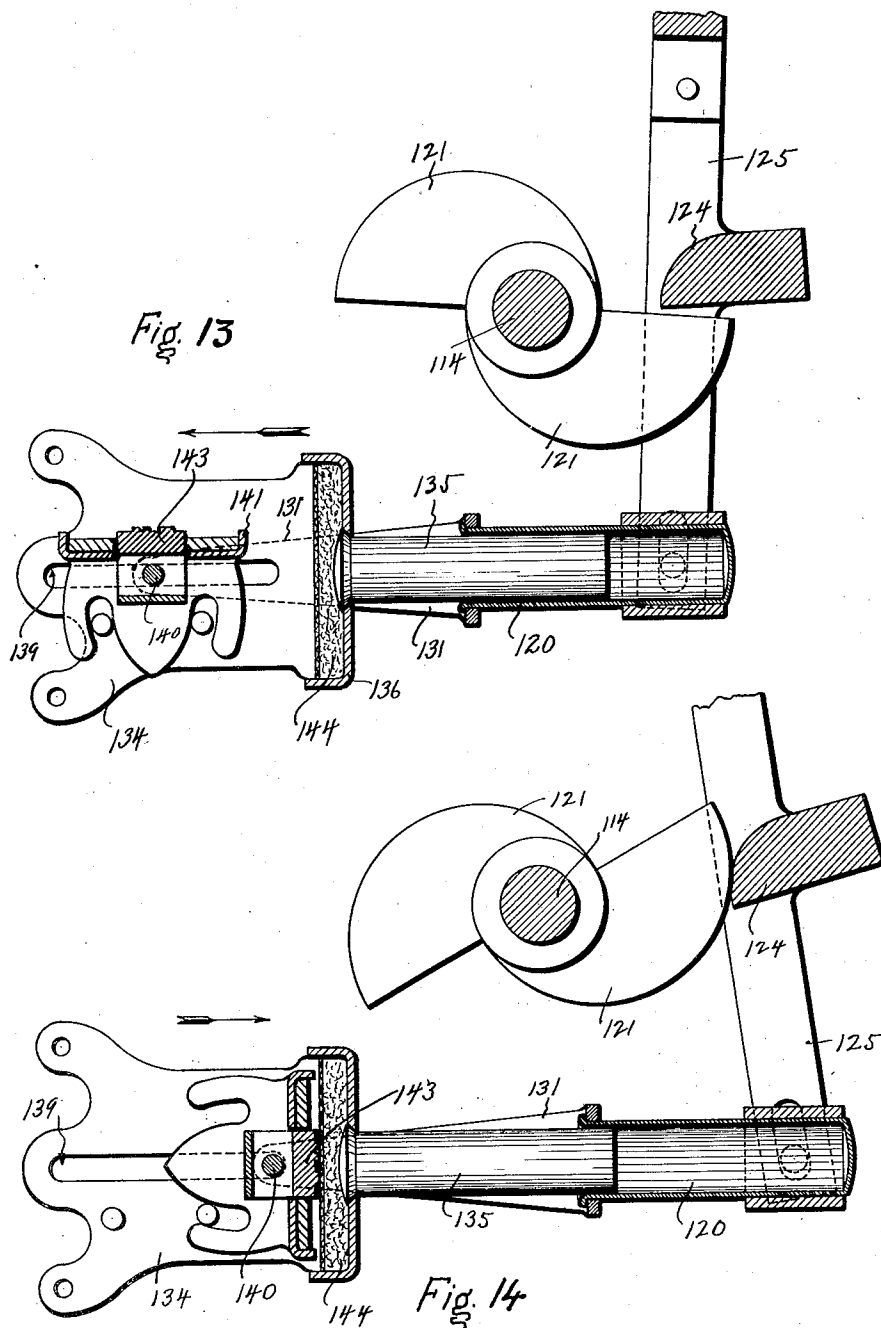
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HOSIERY PRESS

Filed Nov. 27, 1925

6 Sheets-Sheet 6



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HOSIERY PRESS

Application filed November 27, 1925. Serial No. 71,527.

This invention relates to garment presses and more particularly to hosiery presses and the like.

An object of the invention is to produce an improved combined press and printer capable of large production and able to rapidly dry, press, and print the manufacturer's name and size or other data on hosiery making them ready for packing and boxing.

Another object is to produce a hosiery press employing a number of press jaws arranged in sets through which the work is progressively carried and progressively treated so as to separately steam spray, dry, press, and print the work.

A further object of the invention is to produce a duplex printer for use in connection with hosiery presses, so that hosiery may be stamped and printed with the manufacturer's name or trade mark by the same machine which effects the pressing and drying operations.

Other important features and objects of the invention will be understood from the description to follow. The accompanying drawings show one form of the invention and changes in construction and operation are contemplated.

The figures

Figure 1 shows a side view of the full length hosiery press.

Figure 2 shows a fragmentary detailed view of a press lever actuating mechanism as taken on the line 2—2 of Figure 1.

Figure 3 shows a vertical cross-sectional view taken on the section line 3—3 of Figure 1, with the shaft, ratchet wheel and pawl of the printing mechanism omitted to show the ratchet mechanism for the intermittent drive.

Figure 4 shows a longitudinal cross section taken on the line 4—4 of Figure 3.

Figure 5 shows a plan view of the machine with the apparel or hosiery forms removed from the conveyors to better show the general plan of construction.

Figure 6 shows an enlarged fragmentary view of that portion of the frame which piv-

otally supports the press levers which open and close the pressing jaws.

Figure 7 illustrates the lower end of a resilient press lever actuating means employed in the machine.

Figure 8 illustrates an automatic steaming mechanism which supplies steam to one set of the press jaws.

Figure 9 illustrates an underneath view of one end of the machine on which the printing mechanism is mounted.

Figure 10 illustrates the disposition of the printing mechanism placed on one end of the machine.

The last four figures illustrate the automatic printer removed from the machine.

Figure 11 is a side view of the printing device in printing position but with the work removed therefrom.

Figure 12 is a side view of the printing device in printing position against the garment.

Figure 13 is a detailed view of the printer traveling from reinking position to the work to print it as taken on the line 13-14—13-14 of Figure 12.

Figure 14 is a view of the printer returned from the work and again engaging its type against the ink pad as taken on the line 13-14—13-14 of Figure 12.

Frame and conveyors

Referring now more particularly to the drawings for a detailed description of the invention and machine constructed in accordance therewith, there is shown a frame 10 on which is rotatably mounted a pair of conveyor wheels for example sprocket wheels 11, one each placed at each end of the frame 10. Likewise there is mounted on the frame a pair of sprocket wheels 12 of the same construction and these wheels are similarly placed, one on each end of the frame. A chain or conveyor member 13 is movably carried on the wheels 11 and a like conveyor chain 14 is carried on the other wheels 12. In this way, the conveyor chains 13 and 14 are spaced apart in parallel relation and the adjacent sections in the centre of the frame travel in the same direction and it will be shown how each adjacent portion of the chain

carries work through spaced sets of jaws and then through a printer to simultaneously finish the work on the two stockings every operation of the machine.

- 5 Garment forms, as for example hosiery forms 16, are mounted on the chains and the forms consist of hose plates, stretcher boards, or stocking forms 16, the lower end of each of which is fixed within the chain link 13 or
10 14 and stands vertically thereabove in spaced relation and caused to travel with the chain.

Press jaws and driving transmission

- 15 A plurality of sets of press jaws are mounted on the frame and the conveyor chains and hosiery forms pass therethrough. The jaws are preferably arranged in three spaced sets of three jaws to the set and the hosiery forms pass through first one and then the other.
20 To this end central stationary press bucks 18, 19 and 20 stand vertically in the frame and remain relatively stationary, though they are movably supported so as to accommodate unevenness in jaw pressure applied by two movable jaws to be hereinafter described. The
25 lower end of each central buck 18, 19 and 20 is provided with a bearing yoke Figure 4 consisting of a journal 21 carried on spaced arms 22 which connect the journal 21 with the
30 buck. The journal 21 is carried in a bearing 23 made a part of the frame 10 and thus the bearing 23 reaches around the journal 21 and lies between the arms 22 thereby holding the buck in upstanding position, but at the same
35 time permitting the buck to have slight relative swinging motion to accommodate itself to the jaw pressing action hereinafter described.

- 40 Steam pipes 24 connect the several bucks 18, 19 and 20 together so as to supply them with steam for heating and steam spraying the work. Each center buck is preferably made hollow with a steam heating chamber 26 and with adjacent steam spray perforated
45 chambers 27 and 28 by which steam is sprayed onto the work. A steam pipe 59 leads to a valve chamber in which a valve 58 is mounted and adapted to open up the flow of steam into a passage 60 thereby causing a
50 steam spray or steam cloud to be ejected onto the work. In this particular type of press, I perforate the one buck 18 only thereby spraying the work in the first set of jaws which leaves the two succeeding jaw sets to dry
55 and press the work.

- Swinging press jaws 31 and 32 are disposed on either side of the press buck 18. In the same way, swinging jaws 33 and 34 are mounted to either side of the press buck 19.
60 Likewise swinging press jaws 35 and 36 are adapted to cooperate with the last press buck 20. This arrangement provides three sets of jaws, each set of which is composed of three jaws, each set having two movable jaws
65 and one comparatively stationary jaw. The

sets of jaws are spaced apart to permit the goods or work to air itself in passing from one set to another during the rapid and progressive treatment of the work.

Suitable mounting and operating means 70 for the movable jaws 31 to 36 inclusive are provided by way of press levers arranged in spaced pairs and to this end press levers 39 and 40 are pivoted at 41 on the frame there-
75 by disposing the lower ends down within the frame of the machine. The upper ends of all levers 39 and 40 are pivotally connected by pins 42 to the outside swinging jaws 31 to 36 inclusive, and if desired, a compensating
80 spring 43 is interposed between the levers 39 and 40 and the jaws. The springs 43 aid in balancing and holding the outer swinging press jaws in proper position and compensate and even up surface engagement between
85 the buck and outside jaws as well and relieve the jaws of side strain in case of uneven work.

The lower end of each press lever 39 and 40 Figure 7 is provided with spring compensating means to enable the power driving
90 mechanism to apply even pressure, and for this purpose a sleeve 44 is carried on the lower end of each press lever. Within this sleeve is slidably mounted a cuff 45 integrally made with a cam face 46. A compression
95 spring 47 is confined between the movable parts 44 and 46 together with a screw adjustment device 48 to vary the compression of the spring. This press lever construction is duplicated for each set of press
100 levers throughout the machine.

The outer press jaws are automatically closed and opened on the work against the press buck, and power means for actuating
105 the jaws will now be described. A main drive shaft 51 is journaled in the frame beneath the press jaws and extends longitudinally through the frame and the lower ends of the press levers 40 reach down to this
110 main drive shaft. A cam 52 is fixed on the drive shaft 51 between each pair of press levers 39 and 40 arranged in pairs and the cam faces 46 are held in contact with their respective cams 52 by a tension spring 53
115 which has each end thereof attached to the lower ends of the press levers, the spring 53 functioning to normally hold the outer jaws in open relation away from the central press buck and to maintain the cam faces 46 and
120 cams 52 in working engagement as well. When the shaft 51 rotates, the cam imparts a swinging action to the press levers 39 and 40 which closes the outer jaws against the inner buck. The shaft 51 carries a worm
125 wheel 54 meshing with a worm pinion 55 driven by a motor 56 which continuously drives the power shaft 51 thereby periodically opening and closing the outer swinging
130 jaws against the central press buck, the said outer jaws being periodically swung in and

out by the rotating cam 52 and returned to open position by the spring 53.

Steam spraying means

Automatic steam spraying means are provided by which work, as for example the hosiery on the forms 16, is steam treated in the first jaw set 31—18—32, and to this end a valve rod 57 is caused to periodically reciprocate against the valve 58 to open it thereby permitting steam to flow from the steam feed pipe into double spray chambers 27 and 28 from which chambers the steam sprays outwardly through the foraminous press faces against the work held on the forms 16. The lower end of the valve rod 57 rides against a valve actuating cam having a plurality of cam faces 61 and 62. A collar and set screw 63 are carried on the cam 61—62 which locks the cam in position with either cam face 61 or 62 disposed beneath the rod 57. For example one cam face, say 62, is so designed as to provide a long period of opening for the valve 58 thereby affording a prolonged steaming period, while the other cam 61 may be designed to produce a steam spraying period of shorter duration. In this way, the steaming facilities may be regulated to the various kinds of work.

Intermittent drive transmission

The work conveyors are caused to move intermittently and progressively through the sets of jaws and to this end a transmission works off of the shaft 51 to produce an intermittent stop and start motion in the two conveyor chains 13 and 14. For this purpose a drive gear 66 is fixed on the shaft 51 and meshes with a driving pinion 67 carried on a bearing 68 on the frame. A connecting rod 69 has its lower end mounted on a crank pin 70 on the pinion 67 and has its upper end pivotally connected with a yoke 71 which is adjustably fixed on an arm 72 by a set screw 73. As the drive gear 66 rotates, it results that the arm 72 is actuated up and down through a degree of movement depending upon the position at which the yoke 71 is fixed to the arm 72.

The arm 72 is made integral with a bell crank arm 74 carrying a ratchet 75 on the upper end thereof which engages a ratchet wheel 76. The arms 72 and 74 together constitute a bell crank which causes a periodically timed start and stop motion to be imparted to the ratchet wheel 76. The ratchet wheel 76 is fixed to a shaft 77 upon which is also fixed a bevel gear 78 meshing with a bevel pinion 79. The pinion 79 drives a shaft 80 and a gear 81 is fixed thereon which engages a gear 82 likewise fixed on a shaft 83. Therefore the operation of the bell crank 72—74 imparts an intermittent rotary movement to the gears 81 and 82 which in turn mesh with intermittent drive gears 84 and 85

which are in turn fixed on shafts 86 and 87 journaled in frame bearings and which shafts 86 and 87 are themselves fixed to and adapted to drive the aforesaid sprocket wheels 11 and 12 and chains hereinbefore described.

In this way an intermittent stop and start rotary motion is imparted to the two pairs of ratchet wheels 11 and 12 by the continuously revolving gear 66. Therefore the chains 13 and 14 are likewise caused to intermittently start and stop thus carrying the work forms 16 through and between the jaws where the forms 16 pause a sufficient period to permit the outer jaws 31 and 32 and others to press the work, and the jaws are timed to open simultaneously with the next starting movement of the chains whereupon the work forms 16 are carried towards the next set of jaws. Each operating cycle of the power transmission advances the forms one step further and it will be later seen how two stockings are finished and printed by each advance of the conveyor.

The printer

A description of an improved duplex printing mechanism which is operated to print two stockings at a time will now be described. A printer drive shaft 90 is journaled in the frame and carries a ratchet drive gear 91 fixed on one end thereof. The ratchet wheel 91 is intermittently turned by a ratchet 92 pivotally mounted on the end of a crank ratchet arm 93 which is integrally formed on a hub 94 common to the bell crank arm 72—74 and common to said crank ratchet arm 93 just named. It results therefore that the connecting rod 69 performs the additional function of imparting a stop and start motion to the ratchet wheel 91 and shaft 90 which is connected with a printing mechanism later described. The shaft 90 at the other end of the machine Figures 10 and 11 carries a bevel gear 95 engaging a pinion 96 fixed on the lower end of a printer shaft 97 which itself carries a sprocket wheel 98 with a chain drive 99 running around another sprocket wheel 100 which is itself fixed to a second printer shaft 101. The two vertical printer shafts 97 and 101 reach to a duplex printer and actuate two printing plungers to be described. The first printer shaft 97 drives one unit of a printing mechanism for printing the work on one conveyor chain 14 while the other vertical shaft 101 drives a second printing mechanism to print the work on the other chain 13.

Several vertical support posts, in this instance three posts 104, have their lower ends slidably mounted in beams 105 and are held at the proper height by set screws 106. By loosening all the three set screws 106, it is possible to vertically adjust the three posts 104 thereby raising or lowering a printing mechanism 107, the numerals 107 and 108 pointing

to the upper and lower plates or casing which encloses the duplex printer. While the several posts 104 are adapted to be adjusted up and down to regulate the height of the printer 107, suitable means are necessarily required to drive the printing mechanism at any adjusted height, and to this end, as an example of a driving means, the two shafts 97 and 101 may be provided with a spline or driving key-way 111 which engages a sleeve 112, the upper end of which is fastened by a pin 113 to a shaft 114. The shaft 114 is journaled in the casing or plates 107 and 108 and is adapted to periodically actuate the printer as will be described.

Reference is now more particularly made to Figures 11 to 14 inclusive. The lower plate 108 is made in two sections in order that the stocking form may pass through the printer. In fact the plate or plates 108 are provided with a slot or passage 117 for this purpose. A roller shaft 118 is mounted vertically between the two plates 107 and 108 and carries a printing backer or roller 119 against which the stocking forms 16 travel through the printer. This roller backs up the stocking form and supports the goods while being printed. One roller or backer 119 may be employed for two printing mechanisms. In Figures 11 to 14 inclusive, there is shown one printer only, but in plan view Figure 5 there is diagrammatically shown a duplex printing mechanism comprising the single roller 119 disposed centrally between two printing plungers 120, both plungers 120 being actuated by identical mechanism mounted within the casing 107-108. One set of mechanism is driven by the shaft 97 while the other set of mechanism is driven by the shaft 101. Two shafts 114 are shown in plan view Figure 5 and a cam 121 is fixed to each shaft. As aforesaid, one main drive printing mechanism shaft 114 is periodically actuated by the shaft 97 while the other printing mechanism shaft 114 is similarly periodically actuated by the shaft 101, and the chain 99 is employed to simultaneously drive them both.

The cam 121 on each shaft 114 is made duplex in form in that it has two cam faces 121 for the purpose of producing two complete printing operations for each turn of the shaft 114. The cams 121 cooperate with a cam follower 124 integrally formed with a fork 125, one end of the fork being mounted on a pin 126, which pin has one end thereof mounted in a bracket 127, the bracket itself being anchored to the plate 108. In other words, the bracket 127 and plate 108 constitute a frame to hold the pin 126 which pin carries the swinging fork or arm 125.

A spring 128 coils around the pin 126 and one end of the spring rests against the bracket while the other end 130 movably rests against the fork 125. The spring 128 functions to throw the printing mechanism into

printing contact with the work while the cams 121 act to withdraw the printing mechanism away from the work which winds up the spring 128 thereby accumulating sufficient tension in the spring to perform the next printing operation. The outer swinging end of the fork 125 is pivotally connected with the hollow plunger 120 and the purpose of the fork 125 is to reciprocate a type yoke 131 anchored to the tubular plunger 120.

A stationary ink pad frame 134 is shown fixed to the plate 108 by any suitable means. The tubular plunger 120 and yoke 131 travel back and forth as shown in Figures 13 and 14, the plunger being guided upon a pin 135 one end of which is anchored in an ink pad cup 136 integrally formed with the frame 134. As aforesaid, the frame 134 and pin 135 remain stationary while the yoke 131 is reciprocated back and forth by operation of the cam 121 and spring 128.

As is common in certain types of printing mechanism, the ink pad frame 134 is usually made with guide slots 139 in which is mounted a traveling pin 140. Both ends of this pin 140 are fixed in the yoke 131 so as the yoke reciprocates, the pin 140 travels back and forth in the slot 139. The frame 134 is usually made in the form of a yoke and fits inside of the movable yoke 131. A type plate 141 has upturned ends 142 which are pivotally mounted on the pin 140 and type 143 reading any desired data such as the size of the hosiery or the manufacturer's name is fixed in the type plate 141. As the yoke 131 is actuated back and forth, the pin 140 is guided in the slot 139 and thus causes the set of type or rubber stamp type to be first moved against the work on the form 16, as shown in Figure 12 and thereafter moved away from the hosiery and caused to press against an ink pad 144 as shown in Figure 14.

Operating means for the printer

It is necessary to both press and print the hosiery at the time the conveyor chains 13 and 14 have come to a complete standstill. In other words, the transmission which actuates the printer must be in motion at the time the conveyor chains 12 and 14 come to rest. With this in view, it is necessary to so operate the printer that both shafts 97 and 101 turn at the time the shaft 80 is at rest. This is accomplished by simply reversing the direction of the teeth on the two ratchet wheels 76 and 91 and so the ratchet 75 clicks over the ratchet wheel 76 at the time the ratchet 92 is engaging and turning the ratchet wheel 91. In this way, the shaft 90, which controls shafts 97 and 101, is turned when the shaft 80 stands still and vice versa.

With reference to gear 96 in Figure 10 and gear 67 in Figure 1, it is necessary that the former make one-half a turn each time the latter makes one complete turn. In this way

the printing machine 107 will be actuated to print the manufacturer's size or other data D, as shown in Figure 1, for each successive movement or step of the hosiery forms.

5 The hosiery forms in reality move at each operation just one-half the distance from one jaw set to the other jaw set. It may be desirable to have facilities for adjusting the chains so that the hosiery forms will stop
10 each time exactly in pressing position in each respective jaw set and the arm 72 and yoke 71 hereinbefore described are used for this purpose. In case the hosiery forms travel a little too far and protrude from the jaws on
15 the far side, then the yoke 71 is set somewhat further out towards the end of the arm 72 so as to produce a shorter movement of the ratchet 75 so as to acquire a smaller turning angle of the ratchet wheel 76 thereby simultane-
20 ously moving both chains a shorter distance and thus bringing the hosiery forms into proper alignment with the pressing jaws.

Complete operation

25 In the operation and use of this pressing machine, the work such as hosiery is slipped upon the flat form 16 ahead of the first jaw set 31—18—32 and the motor 56 drives step by step the two inner adjacent parallel conveyor
30 chains carrying the hosiery progressively forward from the first jaw set where the work is dampened by steam spraying process. The hosiery pauses between the stationary press buck 18 and two outer pressing jaws 31
35 and 32 just long enough to be compressed and steamed. If desired, padding is secured to the working faces of the two moving jaws 31 and 32 for the purpose of embedding the work therein and steam treating both sides
40 by virtue of high pressure steam flowing around the padding to both sides of the work and the buck may also be padded.

The jaws are caused to simultaneously open with the inception of the forward starting movement of the conveyor chains and the
45 work again comes to a stop midway between the first and second jaw set. The work which is thoroughly steam treated in the first jaw set has opportunity to lose a large percentage of its steam by reason of the fact that
50 it passes through the air in movement towards the second jaw set. The steamed work is next received into the second jaw set and therein dried by the heat of the press jaws
55 33 and 34, against the press buck 19. The work passes on to the third jaw set 35—20—36 in dry condition and is there pressed, the last jaw set imparting a sheen and lustre to the work which cannot be accomplished by
60 one pressing operation obtained in ordinary single jaw machines. In this machine, the work is subjected to three pressing operations, namely, steaming, drying, and pressing.

65 The work next passes from the last jaws

into the printer 107 whereupon the manufacturer's size and trade mark data or other indicia D is stamped, printed or affixed to the toe of the hosiery. It results therefore that the work is finished and made ready for box-
70 ing in one machine.

The work is removed from the forms 16 after it has passed from the printer so that new work is fed into the machine at one end and removed at the other end if desired. 75

Raising and lowering the printer

The printer 107 may be raised or lowered in order to properly adjust it to the exact point where it is desired to apply the data
80 D on the stocking. What is more important, the printing mechanism may be lowered for the purpose of accommodating itself to shorter stocking forms as for example to sock
85 forms and the like where different classes of work is treated in the machine. This vertical adjustment is accomplished by loosening the set screws 106 and moving the printer to a lower or higher position as desired.

What I claim is:

90 1. A pressing machine comprising in combination, a frame, a plurality of pressing jaws arranged in sets mounted in spaced relation from each other, operating means for opening and closing the jaws, a conveyor
95 adapted to travel in relation to the sets of jaws and progressively carry work through the jaws from one set to the next by a stop and start action, a printer mounted on the machine through which the work passes,
100 means actuated by the operating means to work the printer by a stop and start action in synchronism with that of the conveyor, and means by which the printer is adjusted to a position operative on a selected portion
105 of the work.

2. A pressing machine comprising in combination, a frame, a plurality of pressing jaws arranged in sets mounted in spaced relation from each other, operating means for
110 opening and closing the jaws, two conveyors adapted to travel in relation to the sets of jaws and progressively carry two pieces of work through the jaws from one set to the next, and a central press buck common to
115 each jaw set and against which both pieces of work aforesaid are treated.

3. A pressing machine comprising in combination, a plurality of pressing jaws arranged in operative sets, means for opening
120 and closing the jaws, each of said pressing jaw sets comprising three jaws, each set of three jaws being spaced apart, two work conveyors operatively progressing from one jaw set to another, a press buck standing approximately stationary in each jaw set, and
125 said jaw set further comprising a movable jaw mounted on each side of the press buck.

4. A pressing machine comprising in combination, a plurality of pressing jaws ar-
130

ranged in operative sets, means for opening and closing the jaws, each of said pressing jaw sets comprising three jaws, each set of three jaws being spaced apart, two work
 5 conveyors operatively progressing from one jaw set to another, a press buck standing approximately stationary in each jaw set, said jaw set further comprising a movable jaw mounted on each side of the press buck,
 10 a printing support roller mounted between the two work conveyors, work holders mounted on each conveyor, and two printing plungers arranged to strike each work holder and strike toward the support roller, and
 15 operating means to work the conveyor and plungers in synchronism to stop the conveyor and subsequently reciprocate the printing plungers.

5. A pressing machine comprising in combination, a plurality of pressing jaws arranged in operative sets, each of said pressing jaw sets comprising three jaws, each set of three jaws being spaced apart, said jaw set comprising a stationary jaw disposed between two movable jaws, two conveyors operatively progressing from one jaw set to another, work holders carried by each conveyor, means for opening and closing the movable jaws, a duplex printer cooperating
 30 with the work holders on each conveyor, and a single printing support roller disposed between the duplex printer to support each work holder of both conveyors.

6. A pressing machine comprising in combination, a plurality of press bucks mounted in alignment, a single printer roller mounted in alignment with the bucks; two conveyors, one each adapted to travel to either side of the bucks which disposes said bucks inside
 40 the conveyors, and said conveyors, one each adapted to travel to either side of the roller which disposes said roller inside the conveyors; a pair of movable press jaws cooperating with each press buck with the conveyors traveling between a buck and jaw, a pair of printer plungers adapted to strike toward the aforesaid single printer roller which disposes the aforesaid conveyors between the roller and printing plungers, and means for operating the press jaws and the printing
 50 plungers.

7. A pressing machine as defined in claim 6, having operating means to drive the conveyors step by step through the jaws, means
 55 to close the jaws when the conveyors stop, and means to drive the printer plungers when the conveyors stop.

8. A pressing machine comprising in combination, a pair of movable jaws, a press buck mounted between the jaws, means supporting the buck in approximately stationary position permitting limited relative compensating motion, and operating means to simultaneously close the pair of jaws against the press buck.

9. A pressing machine comprising in combination, a pair of movable jaws, a press buck mounted between the jaws, means supporting the buck in approximately stationary position permitting limited relative compensating motion, operating means to simultaneously close the pair of jaws against the press buck; a conveyor consisting of two parallel sections traveling in the same direction, the aforesaid buck being disposed between the two conveyor sections and common thereto; and work
 75 holders carried by each conveyor section.

10. A pressing machine comprising in combination, a pair of movable jaws, a press buck mounted between the jaws, means supporting the buck in approximately stationary position permitting limited relative compensating motion, operating means to simultaneously close the pair of jaws against the press buck; conveyor sections consisting of two parallel sections traveling in the same direction, the aforesaid buck being disposed between the two conveyor sections and common thereto; work holders carried by each conveyor section, a printer support against which rests work holders of each conveyor, a pair of stamp pads adapted to drive against the work holders resting in contact with the printer support, and operating means to work the conveyor and plungers in synchronism to stop the conveyor and subsequently reciprocate the printing plungers.

11. A pressing machine comprising in combination, a pair of movable jaws, a press buck mounted between the jaws, means supporting the buck in approximately stationary position permitting limited relative compensating motion, said buck being provided with a central heating chamber and double faced foraminous steam spray chambers, and operating means to simultaneously close the pair of jaws against the press buck.

12. A pressing machine comprising in combination, a frame, a press buck mounted vertically thereon, spaced arms and a journal fixed on the lower end of the buck, a bearing on the frame in which the journal is placed, a press jaw disposed on each side of the buck, and means to open and close the jaws.

13. A pressing machine comprising in combination, a frame, a press buck mounted vertically thereon, spaced arms and a journal fixed on the lower end of the buck, a bearing on the frame in which the journal is placed, a press jaw disposed on each side of the buck, a press lever for each jaw pivoted on the frame and having its upper end attached to the respective jaw and with its lower end reaching down into the frame, and a single operating means placed between the lower ends of the levers for actuating the jaws.

14. A pressing machine comprising in combination, a frame, a plurality of sets of press jaws spaced apart above the frame, each set of jaws consisting of two movable jaws with an approximately stationary buck placed

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therebetween, a bearing holding the buck in adjustably movable compensating position in respect to the press jaws, a pair of press levers pivoted on the frame for each jaw set with the upper ends attached to the press jaws and the lower ends reaching downwardly under the frame, a longitudinally disposed power shaft journaled under the frame reaching by all the press levers, and means driven by the shaft by which the levers are actuated.

15. A pressing machine as defined in claim 14 further characterized by an intermittent drive mechanism for a conveyor, a conveyor with work carriers connected with the drive mechanism caused to travel through the jaws step by step.

16. A pressing machine comprising in combination, a frame, a plurality of sets of press jaws spaced apart above the frame, each set of jaws consisting of two movable jaws with an approximately stationary buck placed therebetween, a bearing holding the buck in adjustably movable compensating position in respect to the press jaws, a pair of press levers pivoted on the frame for each jaw set with the upper ends attached to the press jaws and the lower ends reaching downwardly under the frame, a longitudinally disposed power shaft journaled under the frame reaching by all the press levers, a cam fixed on the shaft between the lower ends of each pair of press levers, a pair of conveyor chains, garment forms attached to the chains and passing through the jaws, and intermittent drive means operating off the shaft to advance the forms through the jaws.

17. A press of the character defined in claim 8 further characterized by making a large spreading end on the jaws and buck with the other ends reduced in size, hosiery forms adapted to pass through the jaws with the foot-end registering with the large end of the jaws and buck, and traveling means carrying the forms through the jaws.

18. A press comprising in combination, co-operating press jaws, a conveyor, garment forms attached to the conveyor and adapted to travel through the jaws, a printer through which the forms travel, a motor, a first transmission driven by the motor and connected with the printer, means in the transmission to actuate the printer when a form stops therein, a second transmission driven by the motor and connected with the conveyor, means in the second transmission to advance the forms step by step at the end of the printer actuation, a jaw operating means connected with the motor and press jaws, and mechanism forming a part of the jaw operating means by which the jaws are opened simultaneously with the completion of the printer operation and simultaneously with the starting motion of the forms.

19. A press as defined in claim 18 further characterized by ratchet drive mechanism in-

corporated into the first and second transmissions by which the printer operates when the conveyor is at rest.

20. In a press, heated triple jaws disposed in upright position with one jaw occupying a central position, a pivot support for each jaw pivoted adjacent the lower end of the jaws, and operating means to open and close the two outer jaws against the inner jaw.

21. In a press, heated triple jaws disposed in upright position with one jaw occupying a central position, a pivot support for each jaw pivoted adjacent the lower end of the jaws, operating means to open and close the two outer jaws against the inner jaw, and the pivot for the central jaw permitting said jaw a limited movement to compensate for unevenness in work when the two outer jaws close thereon.

22. In a press, heated triple jaws standing upright, a central one of which has a pivot of limited action, the central jaw having two pressing faces to receive work, a full pivot support for each outside jaw pivoted adjacent the lower end of the jaws, a pair of upright levers each of which has its upper end attached to an outer jaw, the lower ends of the levers being spaced apart, and operating means disposed between and engaging the levers to swing both outer jaws toward the central jaw to press the work therebetween and to retract the outside jaws from the work, the central jaw yielding on its limited pivot for unevenness of work being simultaneously pressed on both faces.

23. A press comprising a pair of spaced movable press jaws, a buck mounted between the spaced movable press jaws and having oppositely disposed pressing faces, said buck being provided with a heating chamber to receive a heating medium, said buck also being provided with a double faced foraminous spray chamber adjacent each oppositely disposed pressing face, and operating means for the pair of press jaws to open and close them in relation to the buck.

In testimony whereof I affix my signature.

JOHN ZIMARIK.

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