Nov. 10, 1953 S. ROSENTHAL 2,658,649

PANTS PRESSING MACHINE

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Fig. 1

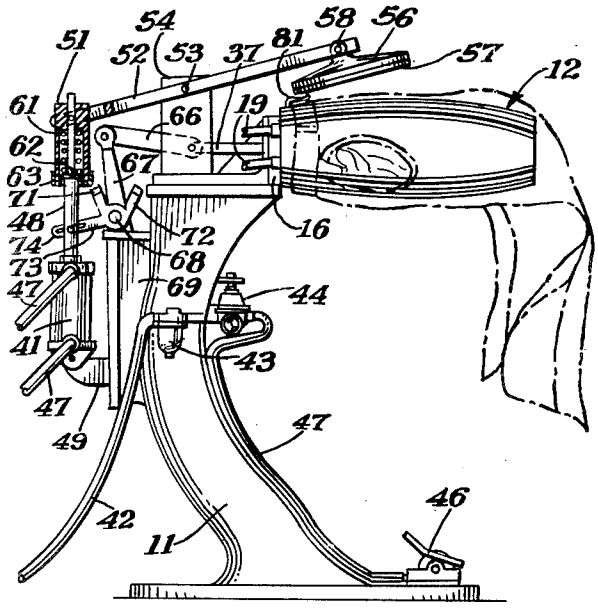


Fig. 2

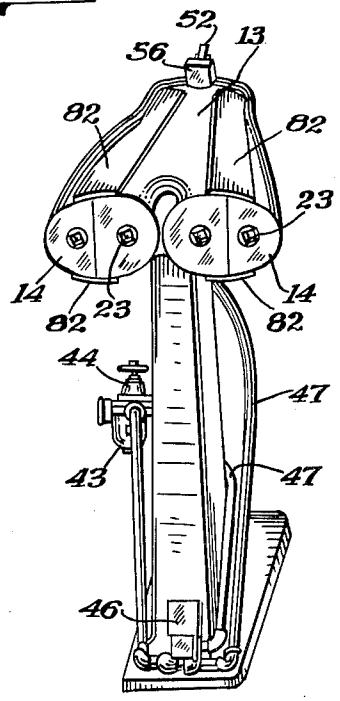


Fig. 3

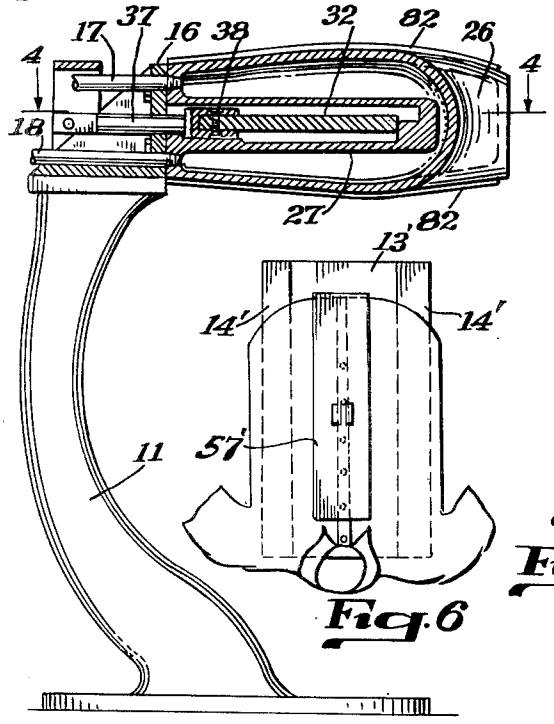


Fig. 6

Fig. 4

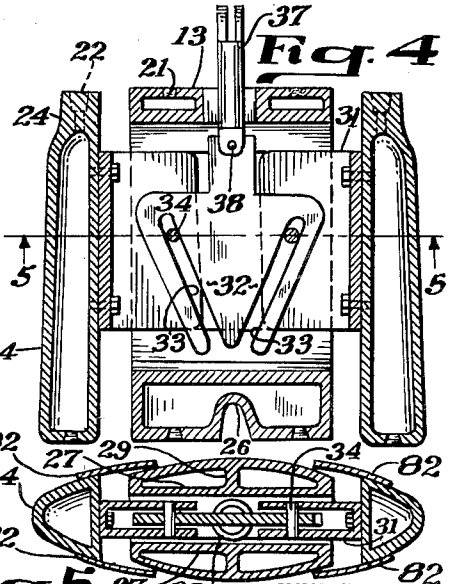


Fig. 5

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PANTS PRESSING MACHINE

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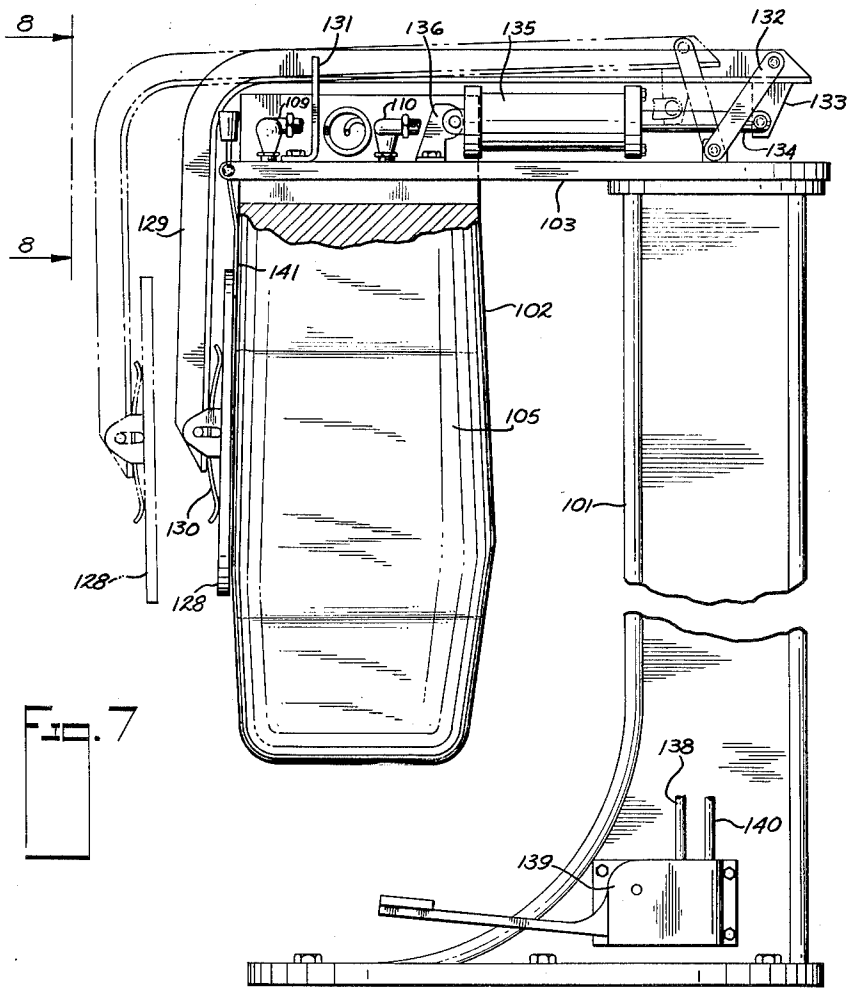


FIG. 7

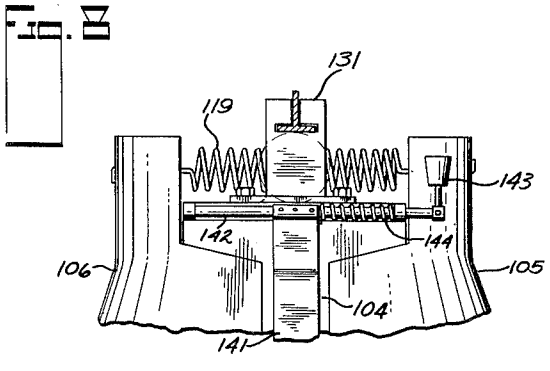


FIG. 8

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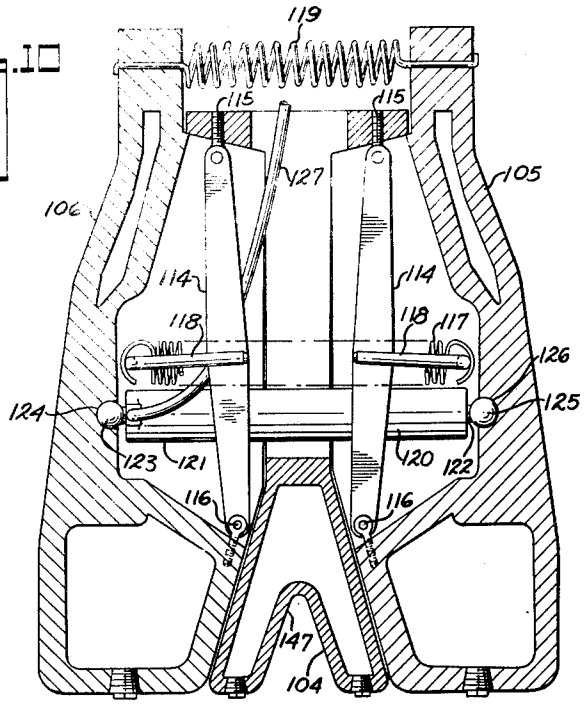
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PANTS PRESSING MACHINE

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Fig. 10



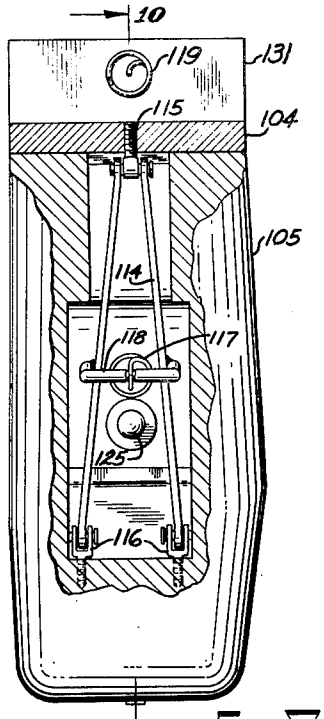


Fig. 9

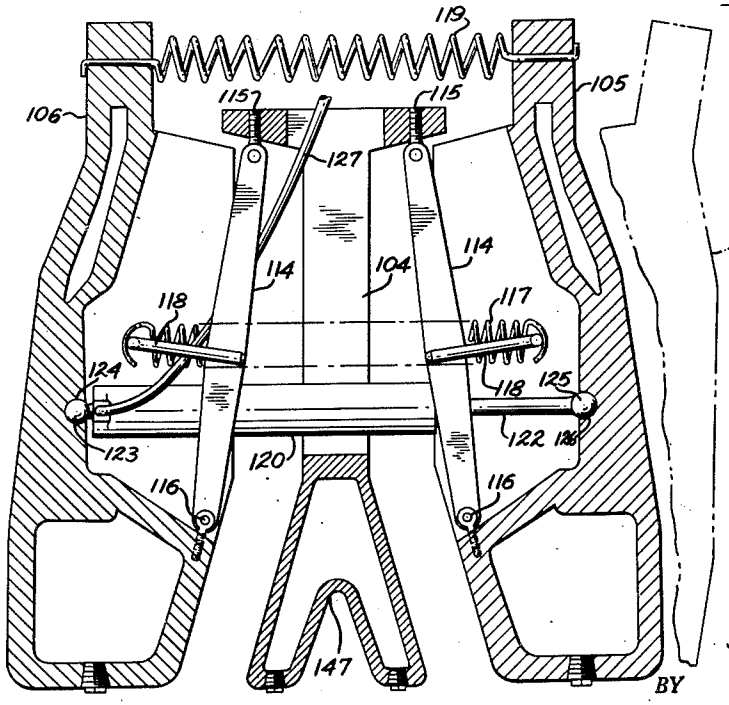


Fig. 11

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PANTS PRESSING MACHINE

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Fig. 12

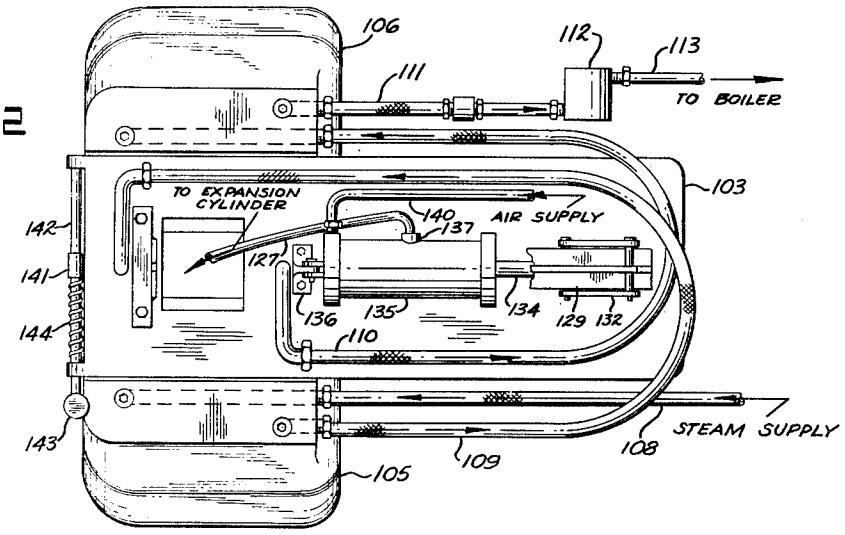
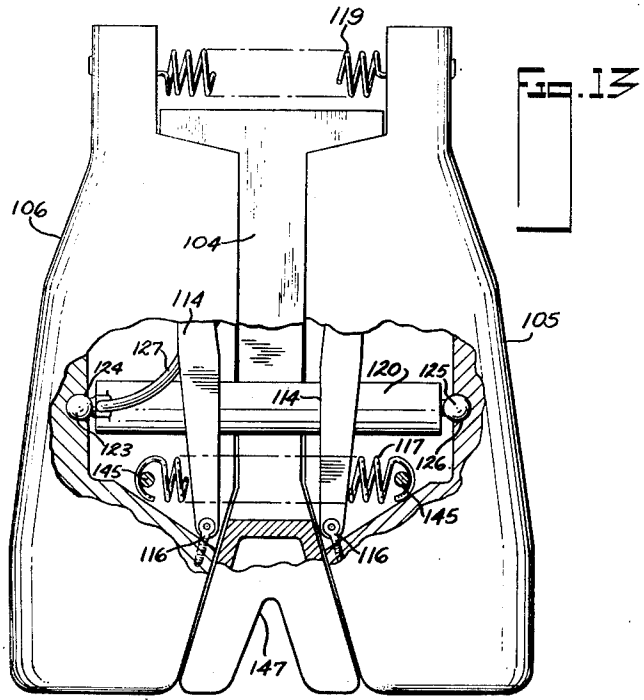


Fig. 13



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2,658,649

UNITED STATES PATENT OFFICE

2,658,649

PANTS PRESSING MACHINE

Samuel Rosenthal, Cleveland, Ohio

Application September 20, 1951, Serial No. 247,400

6 Claims. (Cl. 223—73)

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This invention relates to improvements in pressing wearing apparel, and is particularly concerned with a process and apparatus for pressing the top portion, that is, the waist and seat, of overalls, dungarees, and similar garments.

The invention contemplates a special purpose laundry machine which is designed to perform the pressing operations referred to above with greater economy and dispatch than other machines heretofore constructed. The invention further contemplates a machine which will remove the wrinkles from the cloth in portions of the garment which have heretofore been neglected in laundry and cleaning work of this type, due to the inadequacy of the pressing equipment in current use.

This application is a continuation-in-part of my application, Serial No. 95,447, filed May 26, 1949, now Patent No. 2,629,524, dated Feb. 24, 1953.

The cleaning and laundry industry is highly developed and in industrial centers certain establishments specialize in handling work clothes; moreover, certain concerns rent working garments, including the laundry service thereon.

Garments such as overalls must be pressed after they are washed in order to be attractive and acceptable to the customers. Of course, standards in this line are not the same as those for dress and business clothes, but a reasonable degree of finish and neatness is required. However, laundry work of shop clothes is generally conducted on a contract basis, which is competitive as to price; hence, any economics that may be realized in the operative cycle of the washing and pressing are of great importance.

With the machines now in use, the leg portions of a pair of trousers may be pressed in an economical and efficacious manner. The upper portion of the garment, however, is much more troublesome, and, with known pressing equipment, requires from five to seven separate operations, depending upon the favored technique.

The present invention stems from a different approach to the problem, the new principle comprising the method of stretching the top portion of the garments on an expansible heated form of the general contour of the garment.

The principal object of the invention is to press garments in a more satisfactory manner than has been possible heretofore, to provide a machine which will facilitate a high rate of production, to minimize handling of the garment, and to realize greater speed and economy.

A further object of the invention is to provide

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a machine which will safeguard the buttoned, or otherwise attached, elements of the garment.

Another object of this invention is to provide a pressing machine having a heated expansible form which will uniformly stretch and heat the cloth while it is being pressed and dried.

A further object of this invention is to provide a pressing machine which is capable of pressing tubular garments in a single operation irrespective of the shape or size thereof.

Another object of this invention is to provide a pressing machine having a heated expansible form for pressing trousers and the like which has a manually manipulable clamping plate for holding the closure portion of the trousers while the power clamping plate moves into engagement therewith.

A still further object of this invention is to provide a pressing machine having a heated expansible sectional form, the movable parts of the form being suspended and held in position by flexible members in such a way that the shape of the form during the pressing operation is determined by the shape of the garment, thus achieving uniform stretch in the material which will return the garment to the original size.

The manner in which these objects are realized, as well as certain ancillary objects, will be apparent to those skilled in the art from the description herein of the preferred embodiment of the invention and the accompanying drawings, in which:

Fig. 1 is a side view of the pressing machine;

Fig. 2 is a view in perspective of the same from the front;

Fig. 3 is a view of a fragmentary portion of the machine illustrating the pressing head in section;

Fig. 4 is a horizontal section of the pressing head, the section being taken on the plane indicated by the line 4—4 in Fig. 3;

Fig. 5 is a transverse view of the pressing head taken on a plane indicated by the line 5—5 in Fig. 4;

Fig. 6 is a schematic plan view illustrating the pressing of a shirt;

Fig. 7 is a side elevational view of a modified form of the pressing machine;

Fig. 8 is a fragmentary front view of the top portion of the modified form of the machine looking in the direction of the arrows 8—8 in Fig. 7;

Fig. 9 is a side view of one of the forms partially cut away to show the supporting mechanism;

Fig. 10 is a cross-sectional view taken along line 10—10 in Fig. 9;

Fig. 11 is a cross-sectional view similar to Fig. 10 showing the forms extended to the pressing position;

Fig. 12 is a top view of the pressing machine with parts removed; and

Fig. 13 is a front view of the forms with a portion thereof cut away to show an alternate arrangement of the internal mechanism.

Referring first to Fig. 1, the machine preferably includes a base or stand 11 having a pressing head 12 mounted thereon at a height which will afford the most convenient manipulation of the garment. The pressing head 12 comprises a central form 13 and side forms 14, which constitute a partial torso confined generally to the usual shape of a pair of trousers from the waistband to a point slightly beyond the crotch. The inner form 13 may be fixed to the base 11 in any suitable manner, as, for example, through the angle bracket 16 and cap screws or bolts therefor. The side forms 14 are disposed in contiguous relation with the side walls of the central form 13 and are mounted for lateral movement relative thereto in order to distend the form within the garment and thus eliminate the wrinkles in the engaged portion of the garment. The form sections are hollow, each being connected to a source of steam through which they are heated.

The exact shape of the forms may vary in accordance with the style of garment to be pressed, but it has been found that a torso block of the type illustrated herein is satisfactory for a wide variety of garments, since the flexible support of the parts of the form accommodates appreciable variation in the size and style of the garments. The inner form is provided with inlet and outlet steam pipes 17 and 18 (Fig. 3) and the outer forms are connected to the steam supply line through flexible hose sections 19 (Fig. 1), tapped openings 21 and 22 (Fig. 4) being provided in the castings for the fittings therefor. The forms are provided with pipe plugs 23 of the usual type for closing the core openings which, as shown, are preferably disposed in the forward end of the castings. The side walls of the outer forms 14 are rounded and taper toward the waistband, the inner end portion 24 thereof being of sufficient length to assure the support of the waistband of the garment. The inner form 13 is generally of the form of a rectangular parallelepiped, the upper and lower surfaces, however, being convex and the forward end being bifurcated to provide a vertical arcuate notch 26 for the reception of the crotch of the garment. The central form 13 is provided with inner walls 27 which define a transverse passage 28 for the reception of the operating mechanism for the side or outer forms 14. The walls 27 are united with the upper and lower walls of the form by longitudinal webs 29 which reinforce the structure against internal pressure.

The side forms are fixed to supporting and actuating channel plates 31, the inner ends of which are disposed within the transverse passage 28 in the form 13. A V-shaped cam 32 formed with converging slots 33 in the face thereof is mounted between the arms of the channel plates on pins 34. As will be apparent, forward movement of the cam urges the forms 14 apart as illustrated in Fig. 4, and reverse movement thereof effectuates the retraction or closure of the form so that the garments may be readily fitted thereover or removed therefrom. The cam 32 is coupled with

an actuating rod 37 by a pin or bolt 38 passing through a clevis in the end of the rod. The rod 37 is connected through linkage to a double-acting pneumatic cylinder 41 (Fig. 1). The units of the pneumatic system through which the cylinder is actuated and the cylinder itself may be of any commercial form, and therefore will not be described in detail herein. Preferably, the cylinder 41 is fed from a source of air under pressure through a line 42 which is provided with a water trap 43, a pressure-regulating valve 44, and a foot-operated reversing control valve 46. The valve 46 is connected to the cylinder through conduits 47 which are organized to effect the movement of the piston rod 48 in either direction and also effect the support of the piston in a raised or lowered position under the control of the operator. The cylinder 41 may be pivotally mounted on a bracket 49 fixed to the base 11, and the upper end of the piston rod is guided in a sleeve 51 which is pivotally connected to a clevis on the end of an arm 52. The arm 52 is fulcrumed intermediate its ends on a pin 53 supported in a bracket 54 extending upwardly from the base of the bracket 16. The outer end of the arm 52 supports a plate 56 provided with a pad 57 of felt or other yieldable material. The plate 56 is pivotally mounted on the arm through a pin 58.

The sleeve 51 supports a compression spring 61 which normally urges a shoulder 62 on the piston rod against a collar 63 secured to the lower end of the sleeve. The spring 61 is designed to outweigh the effort required to actuate the arm 52 but to yield when the pad 57 is firmly engaged with the form 13. Thus the initial distention of the piston rod 48 will move the pad into engaged relation with the face of the form and continued movement of the piston will be afforded by compression of the spring.

The piston rod 48 is also coupled to the cam 32 through a lost motion mechanism which is designed to effect the actuation of the cam plate 32 after the pad 57 is engaged with the form 13. The rod 37 for actuating the cam is pivotally connected to a link 66 which in turn is pivoted upon an arm 67 rotatable on a horizontal shaft 68. The shaft 68 is supported in suitable brackets 69 mounted on the frame 11. The arm 67 is disposed between a pair of forks 71 and 72 formed in a bell crank 73 which is freely rotatable about the shaft 68. The free ends of the forks are provided with lugs or offset portions designed for abutting engagement with the arm 67. The outer arm of the bell crank is formed with a slot therein for the reception of a pin 74 mounted in the piston rod 48. Thus, as the piston rod is elevated from its lower position (Fig. 1) the cam plate 32 will not be actuated until the arm 71 is brought into engagement with the arm 67, which, as pointed out above, is subsequent to the engagement of the pad 57 with the garment on the pressing form. When the cylinder is reversed to accommodate the removal of the pressed garment, the arm 72 will abut the opposed side of the arm 67 and effect the retraction of the cam.

A spring clip or similar clamp 81 may be provided at the inner end of the form to retain the waistband of the garment until the pad 57 is engaged therewith and the side blocks of the form are distended.

Plates 82 of sheet metal may be disposed over the gap between the inner and outer forms and secured to the inner form, to prevent garments from sagging between the forms as they close and being thus caught.

In operation, the machine is prepared for use by first heating the forms, preferably by circulating steam therethrough, although other forms of heating may be employed. A pair of trousers or a similar garment having a divided tubular portion therein is next slipped over the forms in the position indicated by the broken lines in Fig. 1. The garment is arranged on the form with the front uppermost, and with the divided sections thereof buttoned or held together by a slide fastener or so-called zipper. The garment is advanced on the form until the waistband is brought to the inner end of the form. This operation merely entails slipping the garment over the forms, and may be accomplished with ease and dispatch. The valve 46 may then be opened by actuation of the foot treadle associated therewith, this operation causing the pad 57 to descend against the closure of the garment, over the buttons or slide fastener, and thereafter effecting the lateral distention of the blocks 14. The pressure exerted by the clamping pad 57 will prevent mutilation of the slide fasteners, tearing of the garment, or strain upon the buttons or buttonholes. If the edges of the divided portion of the garment are arranged in parallel relation to each other and within the area covered by the pad, the pressing operation may be performed without the necessity of buttoning or otherwise closing the opening. The pressure and heat of the form against the garment dries and presses the material, and when this operation is concluded, the operator may actuate valve 46 to collapse the form and elevate the clamp in order to accommodate the removal of the garment from the form.

The valve 46 may be provided with a catch (not shown) to hold the valve open during the drying and pressing period.

Since the operation of applying and removing the trousers requires but very little time, a single operator can easily operate a battery of machines by assembling a garment on a first machine, operating the valve and setting the catch, turning to a second or third machine and repeating the operation, and finally returning to the first machine where he may release the valve catch and renew the cycle of operation.

Although reference is made in the foregoing description to pressing operations on the upper portion of trousers, it will be recognized that the principle of the invention may be utilized in pressing any divided tubular portion of a garment such, for example, as the body of a shirt, jacket, or jumper, the cuff of a sleeve or underwear of the type that is fashioned with buttoned edge portions.

In the application of the invention to such wearing apparel, the pad 57 may, if necessary, be modified as to length, and the forms 13 and 14 configured to conform to the style and size of the garment. This is illustrated in Fig. 6, in which the forms 13' and 14' press the shirt body and the pad 57' is long enough to hold down the edges of the shirt, which may be buttoned or unbuttoned. The actuation of the forms and pad may be as described above.

The pivotal connections between the outer forms and the cam are relatively free, and liberal clearance is provided between the channel plates 31 and the passage 28 so the outer forms may rock or float to a limited degree and thus conform to the pattern of the garment.

A modified form of my invention is disclosed in Figs. 7–13, inclusive, and referring first to Fig. 7, the machine preferably includes a base and stand 101 having a pressing head 102 mounted on

a beam 103 which is joined to the stand 101 to support the pressing head 102 at a height which will afford convenient manipulation of the garment and at a distance from the stand to provide clearance for placing the garment around the rear of the pressing head 102. The pressing head 102 is similar to the pressing head 12 in that it constitutes a partial torso shape having the general shape of a pair of trousers from the waist band to a point slightly beyond the crotch. The center form 104 is affixed to the beam 103 by cap screws or bolts. The outer forms 105 and 106 are disposed in contiguous relation with the side walls of the center form 104 when the forms are in the at-rest position for receiving the garment to be pressed. The forms 104, 105 and 106 are generally hollow for receiving steam under pressure for heating the forms to evaporate moisture from the damp garment placed thereon.

The steam connections for supplying the heating steam to the hollow forms are indicated in Fig. 12, the steam being supplied to the machine through supply conduit 108 which is connected to outer form 105. An interconnecting conduit 109 communicates with hollow form 105 and the center form 104. A second connecting conduit 110 joins the center form 104 and the outer form 106. A return conduit 111 is connected to the outer form 106 and conducts the steam condensate through the steam trap 112 to the boiler return 113. It can be seen that a continuous path is provided for the steam through each of the forms, it being necessary to incorporate the usual dip tube (not shown) in each form for removing the condensate therefrom. Since the forms 105 and 106 move relative to form 104 and to each other, it is essential that the conduits 108, 109, 110 and 111 be flexible to accommodate change in position.

The center form 104 is hollow to receive the operating mechanism which carries the outer forms 105 and 106 and produces the movement thereof laterally in relation to the center form 104. The forms 105 and 106 are suspended on linkages 114 which are swingably mounted to the center form 104 at the upper ends by eye-bolts 115. The eye-bolts 115 are threaded into the form 104 and provide swivel action for the linkages 114 by allowing rotation and swinging thereof. Similar eye-bolts 116 join the lower end of the linkages 114 to the side forms 105 and 106. Similar swivel action is obtained at the lower end of the linkages by the use of the eye-bolts 116 threaded into the outer forms 105 and 106. The linkages 114 function to carry the lower portion of the outer forms 105 and 106 in an arcuate path and restrain their movement in a vertical direction only.

A spring 117 extends between arms 118 which are fixed to each linkage 114, respectively. The spring biases the linkages 114 toward each other and thereby bias the lower portions of the outer forms 105 and 106 into contiguous relationship with the center form 104. A second spring 119 connects the upper portions of the outer forms 105 and 106 and biases the upper portions of the outer forms toward the center form 104.

An air motor 120 having a cylinder 121 and piston rod assembly 122 is disposed between the outer forms 105 and 106. A ball-shaped end 123 is affixed to the cylinder 121 and engages the outer form 106 in a complementary socket 124 disposed slightly below the lateral centerline of the outer form 106. A second ball end 125 is mounted on the end of the piston rod 122 and engages the

socket 126 formed in the outer form 105 opposite to the socket 124. Introduction of air under pressure through the supply line 127 causes the piston to move in the cylinder, thus increasing the distance between the outer forms 105 and 106, causing them to move laterally relative to the center form 104.

A plate 128 for holding the closure portion of the trousers during the pressing operation is flexibly mounted on an arm 129 for movement toward and away from the center form 104. A leaf spring 130 having the usual arch is disposed between the plate and the arm for the resilience necessary to accommodate different thicknesses of garment material to be pressed.

The arm 129 is slidably mounted in a bracket 131 affixed to the beam 103. A linkage 132, pivotally joined to the arm 129 and the beam 103, respectively, carries the end of the arm 129 opposite to the plate in an arcuate path as it is moved laterally of the machine. The arcuate movement produced by the linkage 132 results in a vertical movement of the plate during the clamping process, the plate moving upwardly after the garment is engaged, thus insuring the proper position of the garment on the forms. An angle bracket 133, extending laterally from the arm 129, is joined to the piston rod 134 of the power cylinder 135. The cylinder 135 is pivotally mounted to the beam 103 by bracket 136. With the arrangement of parts as disclosed, the introduction of air to the cylinder causes the piston to move outwardly and the plate 128 to move against the center form 104.

A port 137 in the wall of the cylinder 135 intermediate the ends thereof furnishes communication to the interior of the cylinder for the air supply line 127 connected to the air motor 120. Air supply for the cylinder 135 is obtained through a foot-treadle control valve 139 from a source of pressurized air 138 through line 140. When the treadle valve 139 is operated, air passes through cylinder 135, thus actuating the piston which moves through its path of travel in the cylinder. When the piston passes the port 137, air enters the line 127 and is conducted to the air motor 130, sequential operation of the plate 128 and the separation of the forms 105 and 106 being obtained by the series connections through the cylinder 135.

A manual garment holding plate 141 having a thin cross section is disposed between the upper portion of the plate 128 and the center form 104. The plate 141 is rotatably mounted on the end of the beam 103 by a shaft 142 which extends laterally of the beam and has a handle 143 affixed thereto. A coil spring 144 biases the plate 141 away from the center form 104 when it is not in use.

In the alternate arrangement of parts shown in Fig. 13, the spring 117 is located beneath the air motor 120 and has the ends thereof affixed to the forms 105 and 106 by the pins 145. This arrangement of the spring relative to the air motor 120 facilitates the maintenance of the air motor 120 and balances the force required from spring 117 with the force required from spring 119, thus obtaining interchangeability of these parts.

The center form 104 has the lower end bifurcated to provide an arcuate notch 147 similar to notch 26 for receiving the crotch portion of the garment. The sides of the notch 147 are flared outwardly toward the side forms 105 and 106 to conform to the usual shape of that portion of a pair of trousers which is in engagement with the lower end of the pressing form. The center form 104 is hollow adjacent to the notch 147, the walls of the notch being relatively thin to provide heating by the steam at the required rate for pressing and drying the crotch portion of the garment as it is stretched by the movement of side forms 105 and 106.

In operation, the alternate form of this invention functions similarly to the preferred form in that the garment is slipped over the form until the waist band is brought to the upper end thereof and the crotch of the garment is in engagement with the notch 147. The crotch is held tightly against the inner portion of the notch 147 during the actuation of the treadle valve 139 which causes the plate 128 to clamp the closure portion of the garment against the center form, thus holding the divided portion of the garment against separation during the pressing and stretching operation while holding the crotch portion in contact with the notch 147. The garment is necessarily pressed and dried in the crotch portion since the movement of the side forms draws the inner portion of the legs thereof into tight engagement with the walls of the notch 147. By virtue of the sequential operation provided by the port in the side of the cylinder 135, the plate 128 is necessarily in clamping position before the air motor 120 actuates the outer forms 105 and 106 into stretching position. The provision of the auxiliary manual clamping plate 141 allows the operator to place the garment on the forms with the closure portion of the garment overlapping beneath the plate 141. The garment may then be held in position by using handle 143 to rotate the plate 141 into contact with the garment which will provide sufficient holding friction to maintain the garment in position while the treadle is operated to bring the plate 128 into clamping position. The use of the manual clamping plate eliminates the possibility of injury to the operator by catching the fingers between the power operated plate 128 and the center form 104. Further, it is possible to obtain the optimum overlap rather than an excessive overlap which is required to maintain the fingers clear while the power clamping means is operated without benefit of the manual clamping plate 141.

The air motor 120 operating at substantially the lateral centerline of the outer forms with the swivel effect obtained by the ball ends 123 and 125 produces uniform stretching in the garment. Since the outer forms 105 and 106 are restrained in a vertical direction only, they are free to rotate or tilt to assume the shape of the portion of the garment in contact therewith. As indicated in Fig. 11, the outer form may take the dotted-line position 146 since no restraint is made on the final position other than the garment thereon. Further, the swiveling of the linkages 114 allows the outer forms 105 and 106 to move into non-parallel positions as required by the stretching operation. By having a completely flexible assembly, and by locating the lateral thrust line substantially at the lateral centerline of the outer forms, uniform stretching is obtained throughout the portion of the garment in engagement with the pressing form. The garment is thereby returned to the original size and all portions of the material are held in intimate contact with the heated form which decreases the drying time by improving the heat conduction from the heated form to the damp material of the garment.

The springs 117 and 119 have only sufficient biasing strength to overcome the friction in the mechanism and return the outer forms 105 and 106 to the position contiguous to the center form 104 when the air pressure is removed from the air motor 120. The finished garment may then be removed and a garment to be pressed may be installed on the device without further adjustment.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

What is claimed is:

1. A machine for pressing the top portion of trousers and the like comprising a heated center form configured to shape the central part of the trousers, and outer heated forms configured to shape the right and left parts of the said top portion of the trousers, said trousers being in circumjacent relationship to said forms, mechanism intermediate said outer forms for shifting said outer forms with respect to the center form into engagement with the trousers, a shiftable clamping plate for holding the closure portion of the trousers against the center form, and a second manual clamping plate intermediate said first clamping plate and the center form for holding said closure portion of the trousers while said first clamping plate is moving into engagement with the trousers.

2. A machine for pressing the top portion of trousers and the like comprising a heated center form configured to shape the central part of the trousers, and outer heated forms configured to shape the right and left parts of the said top portion of the trousers, said trousers being in circumjacent relationship to said forms, mechanism intermediate said outer forms for shifting said outer forms with respect to the center form into engagement with the trousers, a shiftable clamping plate for holding the closure portion of the trousers against the center form, power means for actuating said clamping plate, and a second manual clamping plate intermediate said first clamping plate and the center form for holding said closure portion of the trousers while said first clamping plate is being moved into engagement with the trousers by said power means.

3. A machine for pressing the top portion of trousers and the like comprising a heated center form configured to shape the central part of the trousers, and outer heated forms configured to shape the right and left parts of the said top portion of the trousers, said trousers being in circumjacent relationship to said forms, mechanism intermediate said outer forms for shifting said outer forms with respect to the center form into engagement with the trousers, a shiftable clamping plate for holding the closure portion of the trousers against the center form, power means for actuating said clamping plate, and a

second manual clamping plate intermediate said first clamping plate and the center form for holding said closure portion of the trousers while said first clamping plate is moving into engagement with the trousers, said second clamping plate being pivotally mounted on said center form.

4. A machine for pressing the top portion of trousers comprising a heated center form configured to shape the upper part of the garment including the crotch and a portion of each leg, and outer heated forms configured to shape the outer sides of said upper part of the garment and the outer sides of said leg portions, said trousers being disposed in circumambient relation to said forms, the center form defining an arcuate crotch section and divergent leg sections for stretching the crotch portion of the garment, linkage uniting the side and central portions of the forms, a fluid ram for moving the side portions relative to the central portion and relative to each other, and a clamp biasing the crotch of the garment into intimate engagement with the crotch portion of the center form.

5. A machine for pressing the top portion of trousers comprising a heated center form configured to shape the upper part of the garment including the crotch and a portion of each leg, and outer heated forms configured to shape the outer sides of said upper part of the garment and the outer sides of said leg portions, said trousers being disposed in circumambient relation to said forms, linkage uniting the side and central portions of the forms, a fluid ram for moving the side portions relative to the central portions and relative to each other, and a clamp biasing the crotch of the garment into intimate engagement with the center form thereby holding said garment in pressing relationship with the center form as said side forms move into pressing position.

6. A machine for pressing the top portion of trousers comprising a heated center form configured to shape the upper pair of the garment including the crotch and a portion of each leg, and outer heated forms configured to shape the outer sides of said upper part of the garment and the outer sides of said leg portions, said trousers being disposed in circumambient relation to said forms, linkage uniting the side and central portions of the forms, a fluid ram for moving the side portions relative to the central portions and relative to each other, a clamp biasing the crotch of the garment into intimate engagement with the center form thereby holding said garment in pressing relationship with the center form as said side forms move into pressing position, and actuating mechanism for moving the clamp through a path of travel for drawing the garment into crotch engaging position as the side forms move relative to the center forms.

SAMUEL ROSENTHAL.

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