Nov. 18, 1952 C. G. WESTWOOD 2,618,084

OUTSIDE SHOULDER-PRESSING MACHINE
FOR GARMENTS AND THE LIKE

Filed July 26, 1947 2 SHEETS—SHEET 1

Fig. 1

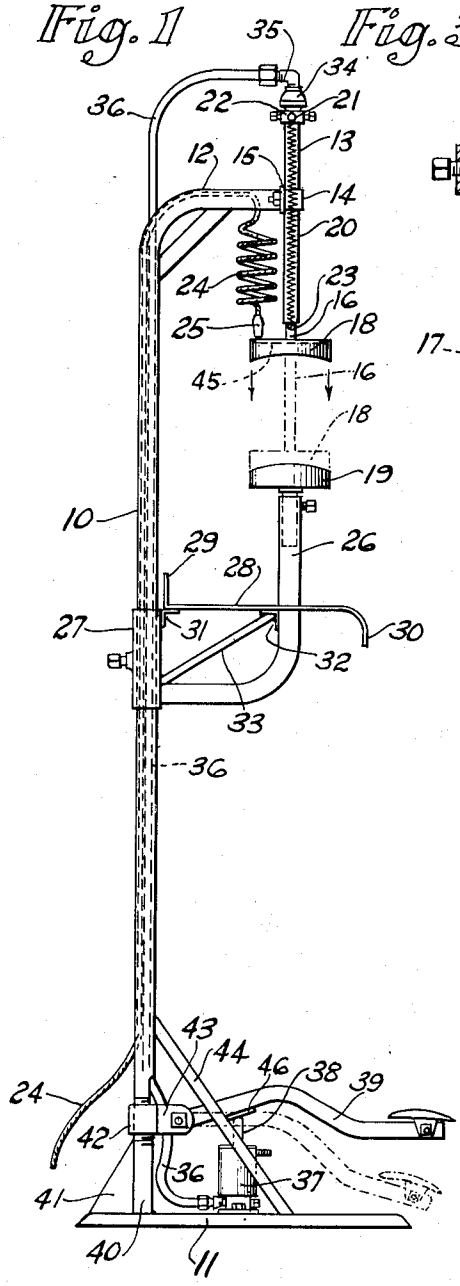


Fig. 3

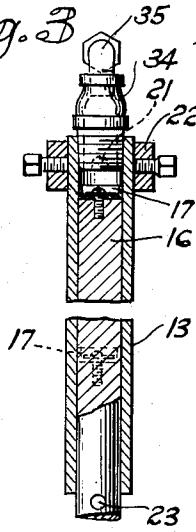
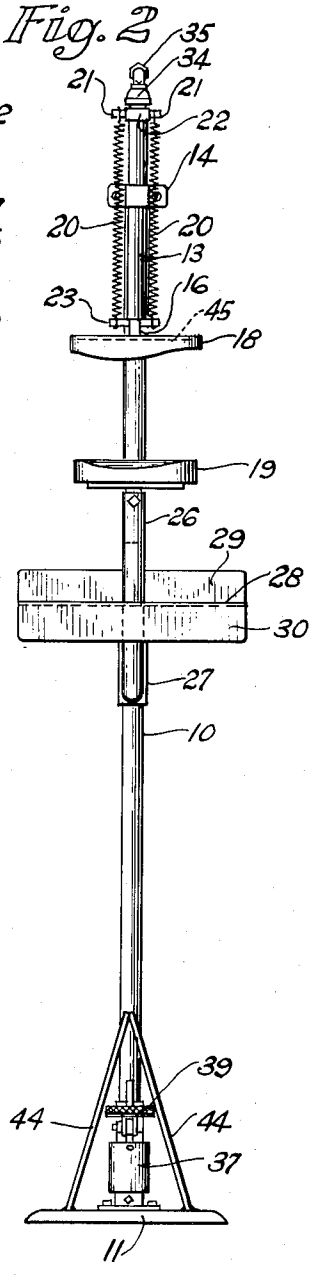


Fig. 2



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Fig. 4

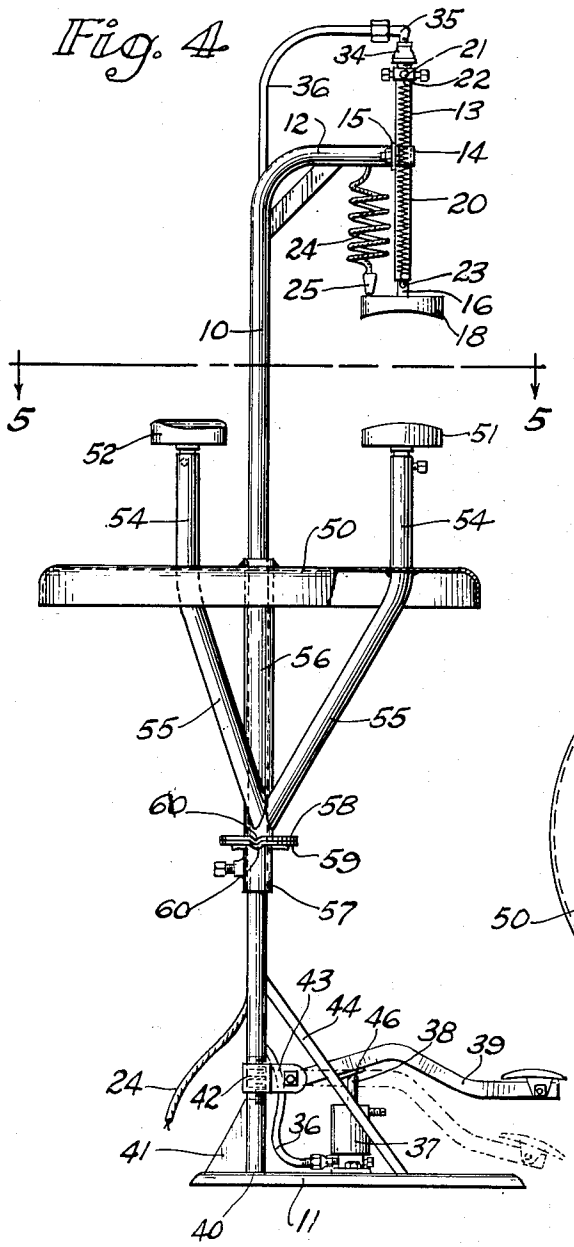


Fig. 6

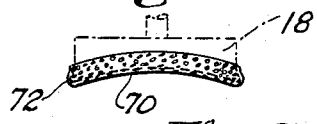


Fig. 7

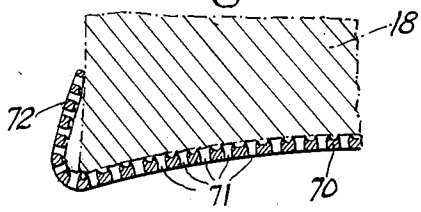
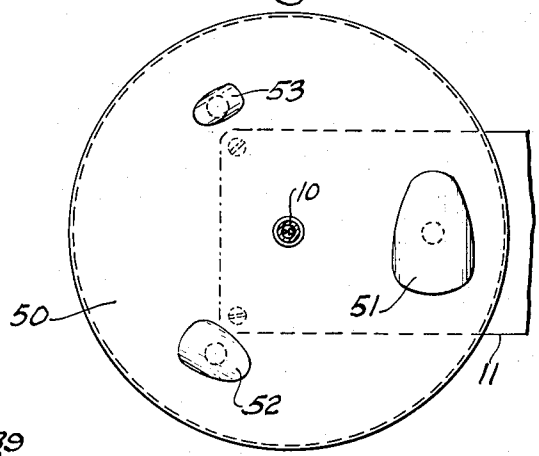


Fig. 5



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OUTSIDE SHOULDER-PRESSING MACHINE FOR GARMENTS AND THE LIKE

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Application July 26, 1947, Serial No. 763,879

11 Claims. (Cl. 38—43)

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This invention relates to improvements in garment pressing machines and particularly to outside shoulder-pressing machines for use mainly in garment-pressing establishments, as an adjunct to the regular machines there employed, for pressing those spots or places in garments, particularly the shoulders, which cannot be or are not satisfactorily pressed in the regular large machines and require the addition of hand ironing to complete the job, which is slow and expensive, or the use of inside steam puffers which, pressing from the inside of the garment, may not impart the same exterior finish to the material as over the remainder of the garment and are therefore unsatisfactory.

It is an object of this invention to provide a presser for the shoulders or the like which presses the material from the outside by a heated upper head pressing directly against the material on a suitable lower buck over which the garment is laid.

Further objects are, severally, in pressing machines, to provide a heated head adapted to reciprocate in a direction perpendicular to the buck, whereby the pressure at all times is exerted evenly and simultaneously over the area of the buck, and the heat and steam due to pressing the head and buck together is not shot out as a blast into the face of the operator; to provide a variable-stroke heated head, the stroke of which is under manual control of the operator; to provide a head, the amount and time of pressure of which on the garment on the buck is under manual control; to provide a long-stroke normally raised head under manual control whereby when change of garment is to be effected or a garment is first to be applied to the buck or the machine is temporarily not being used, the heated head is raised and out of the way of the garment or the hands of the operator; to provide a long-stroke fluid pressure cylinder, preferably hydraulically operated by a foot pedal, the piston of which cylinder carries the head, preferably heated electrically, and which is spring-returned, whereby the head may be operated in short or long strokes, fast or slow strokes, single or repeated pressing strokes, and with light or heavy pressure on the garment by the head, and to provide a simple, inexpensive, portable and manually operated machine which fills the gaps in the usual production lines of machines for pressing and may be readily added thereto and placed in any convenient or available location with respect to the machines already installed or to be installed, whereby the garments may be completely and satisfactorily pressed by production line methods without the interposition or addition of hand or puffer pressing.

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Another object is to provide a garment-pressing machine with a plurality of bucks and a single head.

Another object is to provide a pressing machine having a rotating table and a plurality of bucks thereon which are adapted to be brought under the pressing head means by the rotation of the table.

Another object is to provide a pressing machine with a plurality of bucks of variable size which singly may be brought into register with the head as desired for pressing particular spots or places in the garments that are otherwise difficult to press on a machine.

Still further objects and advantages will appear from the description and claims to follow, in connection with the accompanying drawings, wherein two forms of the invention are shown, by way of illustration but not of limitation, and in which—

Fig. 1 is a side elevation of a machine having a single set of head and buck pressers;

Fig. 2 is a front elevation of the same;

Fig. 3 is a vertical section through the upper end of the operating cylinder;

Fig. 4 is a side elevation of the second form of the invention, having a rotating table with a plurality of bucks thereon, the bucks being adapted to be brought under the presser head by the rotation of the table;

Fig. 5 is a horizontal section on the line 5—5 of Fig. 4, showing a plan view of the table and bucks.

Fig. 6 is an end view of the head with a snap-on grid plate applied thereto; and

Fig. 7 is an enlarged-scale corner section of the same.

Referring to Figs. 1 to 3, the machine here shown includes a metal pipe standard 10 attached to a suitable metal base 11. The upper end of the standard 10 is bent over, as at 12, with a welded brace across the bend, to provide a support for a long vertical metal preferably hydraulic cylinder 13, and preferably of brass and of relatively small diameter, the same being secured to the pipe by a clamping strap or member 14 attached by screws or bolts to a flat back member 15 preferably welded to the end of the pipe 12, which clamp provides for adjustment vertically of the cylinder 13.

The cylinder 13 is provided with a piston 16 preferably fitting the same throughout its length,

with a suitable packing washer disc 17 on the upper end thereof whereby leakage of the operating liquid from above and past the piston is substantially prevented. The upper pressing head 18, which co-operates with the lower stationary buck 19 of the presser in pressing the garments is rigidly mounted on the lower end of the piston 16 which projects from the lower end of cylinder 13 and is operated thereby for pressing. The piston 16 and head 18 are spring-returned to their uppermost position, preferably by long coil springs 20, one on each side of and outside the cylinder, their upper ends being secured to stationary pins 21 secured to the collar 22 which in turn is secured by set screws to the upper end of cylinder 13, as indicated. The lower ends of these springs 20 are secured to the projecting ends of a cross pin 23 through the lower end of piston 16 slightly above the head 18. This pin 23 serves also as a stop to the upward movement of the piston and head by engaging the lower end of cylinder 13.

Several beneficial results are obtained from this outside arrangement of the springs. The stroke of the piston is relatively long. Not only must the piston and head be lifted and returned quickly, but the liquid transmission in the system must be returned to the base of the machine and the piston of the power cylinder and operating pedal there, to be described, must be raised after each downward stroke of the piston. Thus, considerable effort throughout a comparatively long range must be exerted by the springs. By using two springs on opposite sides of the piston, the pull is balanced and less lateral pressure on the piston develops. Besides, by using two springs, a safety measure is provided, since if one breaks, as springs are apt to do, the other is strong enough to return the piston and head and the garment is not burned or injured by the failure of the head to lift. Also, since they are simple coil springs, if one breaks, almost any substitute spring can be supplied or improvised for temporary use until a proper one can be obtained.

Again, by using the two springs as shown, the head 18 can be kept in rotative alignment with the buck below, as it must be to work properly, since they are both oblong in form (see Figs. 1 and 2) and transversely curved slightly on their meeting or cooperating pressing surfaces. The rotation of the head twists the plane of the two springs. This is resisted by the springs, and accordingly the head is turned back to its aligned position before being brought down to the buck 19. This arrangement renders unnecessary the grooving of the piston, an added expense and otherwise objectionable, and a set screw through the cylinder to preserve alignment of the head with the buck. The ability of the head to turn axially saves trouble in case a garment or something catches on an end thereof or accidentally strikes the same laterally. Also, such springs are readily made or obtainable and at relatively small expense, and require no machining to fit them for the work.

This head 18 is electrically heated, preferably by suitable electrical heating elements embedded or placed therein similar to that of flat irons and other similar parts which are well known to the art and therefore not shown, and may be connected in circuit with a source of power, such as the lighting or power circuit of the plant where the machine is used, by the conductor cable 24 and suitable switch plug 25, the cable being shown loosely coiled above the head to provide for the movement of the head and extending through the pipe 12 and standard 10 to the base below, where it may be supplied with a suitable connecting plug or other means for connecting it to the power circuit.

The lower presser head 19 or buck is secured by stem and set screw, as indicated, and may be vertically adjusted in the upper vertical end of pipe 26, which curves below to the standard 10 and is secured to a sleeve 27 thereon which is adjustably held thereto, as by a set screw as indicated. A substantially square sheet-metal table 28, with its inner edge 29 turned up to prevent contact of garments with the standard 10 and with its forward edge 30 turned down to provide a curved edge for overhanging garments or the like, is provided, the standard 26 passing therethrough. Angle iron bars 31 and 32 may extend the full width thereacross and a diagonal brace 33 be fitted therein. All these parts may be welded together at their contact points and to the sleeve 27 to provide a rigid support and bracket construction for the buck 19 and table 28 on the standard 10. The buck 19 receives the impacts from the head 18 and is rigidly supported therefor.

The upper end of the fluid pressure cylinder 13 is fitted with a coupling 34 and an elbow 35 connecting it to a tube 36, which may be of copper and sufficiently bendable to permit of some vertical adjustment of the cylinder 13 should it be desired after assembly. This tube leads down through the hollow standard 10 and is suitably connected to the fluid pressure supply, which in this instance is preferably an upright cylinder 37 rigidly located on the base 11 of the machine and having a suitable piston therein and a piston rod or stem 38 projecting upwardly therefrom which is operatively engaged by a foot pedal 39. The piston 16 of cylinder 13 is given a full downward stroke with a single depression of the pedal and remains so while pedal is depressed. On release of the pedal the head returns to the rest position.

The base construction may comprise the metal base plate 11 to which a short section 40 of pipe is welded, an angle web brace 41 being welded to both. A coupling 42 is threaded onto the upper end of this pipe 40 and the lower end of standard pipe 36 is threaded thereinto. Lugs 43 project from this coupling and the foot pedal is pivoted thereto as a fulcrum. Suitable braces 44 may extend from the base 11 to a point up along the pipe 10 and welded or otherwise secured in place.

The head 18 and buck 19 for the usual shoulder-pressing are of suitable metal of the same size and shape, oblong, slightly narrower at one end than the other, something like a flat iron, with both ends rounded. They may be about five inches wide in the widest part and about eight inches long. They are usually slightly curved transversely on their pressing surfaces, the buck having the convex surface and the head the concave surface. The upper head may have a suitable grid plate on its pressing surface to act as a buffing agent to distribute the heat to prevent deterioration of synthetic materials in being pressed. The lower buck may be padded to give a cushion between head and buck. Such a cushion as usual may consist of a cloth covering with a resilient metal pad or cotton or the like underneath it. The top of the head 18 may be slightly dished (see dotted line 45) or have a slightly raised peripheral rim to catch any oil or pressure fluid that may seep from the cylinder 13 to prevent it reaching the garment.

A grid plate is a thin metal sheet **70**, Figs. 6 and 7, adapted to cover the pressing surface of the head and having fine perforations **71** punched therein close together over the entire surface. The punching protuberances on the inside slightly space the grid from the head. This grid is detachably held to the head by the spring edge **72** or otherwise to make it a snap-on device. This grid prevents direct contact of the ironing head surface with the garment being pressed.

In operation, the garment is draped over the buck **19** with the buck pushed up inside the shoulder to be pressed. The pedal **39** is then depressed by the foot of the operator standing in front of the machine. This depresses the stem of the cylinder **37**, a suitable wear plate **46** of ample area being secured to the lower edge of the pedal lever, and its piston forces the transmission liquid from the cylinder up through the pipe **36** and into cylinder **13**. This forces the head, which as explained is properly heated electrically, down on the outside of the garment by a right-line face-to-face movement of the head perpendicularly toward the buck. By this movement of the head the heat and steam, if any, from the pressing operation is dispersed all around and not gathered together and shot out as a blast into the face of the operator, and the finish due to the pressing is imparted to the outside of the garment over the pressed spots the same as over the rest of the garment.

In such pressing, the head moves practically in synchronism with the pedal, owing to the spring return by the springs **20**, and is in full control of the operator. At the start the heated head is raised up out of the way of the operator's hands in placing or materially adjusting the garment on the buck and in its removal therefrom. If repeated pressing impacts are needed in the same or adjacently adjusted spots on the garment, the head may not be raised to the full extent but short, quick strokes may be given the head by correspondingly operating the pedal. So, too, the head may be pressed on the garment and back for as long as desired by continuing to press on the pedal, and the amount of pressure is similarly controlled for light or heavy pressure impacts. Thus, the shoulders or other spots of the garment not reached and suitably pressed by the usual large presses may be quickly and readily pressed on this machine conformably in quality and appearance to the remainder of the garment.

If the garments have places or spots that haven't been pressed or suitably pressed on the large presses and cannot satisfactorily be reached by the shoulder buck **19** on the inside or where the garments are too small for such operation, the form of machine shown in Figs. 4 and 5 may be employed. In this form, instead of the table **28** and bracket support for the single buck **19**, a circular rotative sheet-metal table **50** with downwardly curved peripheral edge may be mounted on the standard pipe **10** and provided with a plurality of bucks, from the standard size **51**, preferably the same size as buck **19** in the first form, down to the smaller sizes **52** and **53**, as shown in Fig. 5. There are preferably three such bucks on the table located at 120° apart around the pipe **10** as a center.

These bucks are mounted as before on the upper ends of pipes **54** at the desired elevation above the table, the pipes passing down through the table **50**, to which they may be welded, and with their lower parts **55** bent slantingly inward toward the standard **10** to serve as braces for the bucks and table and where they are preferably

welded to the lower part of sleeve **56** which closely surrounds the standard **10**, but is rotatable thereon, the upper end of this sleeve being likewise welded to the table **50**. This sleeve is vertically supported on the standard by a short sleeve or collar **57** secured, as by a set screw bolt, to the standard **10** and therefore capable of vertical adjustment thereon. The lower end of sleeve **56** has secured thereto, as by welding, a bearing washer **58**, and the collar **57** is similarly equipped at the upper end with a washer **59**. These washers form the bearings between the sleeve **50**, with its table and parts attached, and the collar **57**, whereby the table may be manually turned to bring any of the bucks **51**, **52** or **53** under the heated head **18** of the machine. These washers **58** and **59** provide means for readily registering the bucks under the head. To this end, the washers are provided with radial V-indentations **60**, as indicated in Fig. 4, at 120° apart and located to register when one of the bucks is in proper operative position beneath the head.

The upper surfaces of the bucks **51** to **53** are transversely convexed to agree with the concave curvature of the head. Both head and bucks, like those of the other machine, are of metal, and may be covered and padded in the same way. The remainder of the parts of this machine may be and are shown the same as those in the first form described and are numbered accordingly.

In use, if a smaller buck than usual is desired to accomplish the desired pressing operation, the operator may readily turn the table by grasping or pressing it along the edge or otherwise to bring the desired buck into position beneath the head, the co-operating grooves **60** in the washers **58** and **59** insuring proper registration or indexing thereof. Otherwise the operation is the same as set forth for the first form described and need not be repeated here.

It will be understood that, while the hydraulic operation is shown and described for both forms, a suitable oil being preferred for the liquid, the same may be readily operated by a gaseous medium, such as compressed air, with which most plants are supplied, by connecting the tube **36** with the compressed air supply and substituting a suitable three-way or other valve means for the cylinder **37** and controlling the same by the foot pedal. Also, while machines with shoulder and similar small heads and bucks are shown, various features of the invention are of more general application and may be used with larger presses, heads and bucks.

Without further elaboration, the foregoing will so fully explain the gist of the invention that others may, by applying current knowledge, readily adapt the same for use under varying conditions of service, without eliminating certain features which may properly be said to constitute the essential items of novelty involved, which items are intended to be defined and secured by the following claims.

I claim:

1. A garment-pressing machine comprising a buck and a cooperating head, a fluid-pressure cylinder, a rotatably disposed piston for said cylinder and carrying said head in working alignment with said buck, control means for said fluid-pressure cylinder, and coiled springs on opposite sides of said cylinder, said springs being connected at one end adjacent the upper end of said cylinder and at the other end to said piston, said springs being tensioned to return said piston into said cylinder when the fluid pressure therein is

relaxed and to rotate the same into proper working alignment if said head becomes rotatively displaced.

2. A garment-pressing machine comprising a vertical hollow standard, a base for said standard, a bracket on said standard, a buck supported by said bracket, a head disposed in operating relation above said buck, a cylinder and a piston for workably supporting said head over said buck, the upper end of said standard being extended laterally to carry said cylinder and said piston, a pedal-operated fluid valve on said base, a connection leading from said valve to said cylinder through said hollow standard, said valve and connection and cylinder comprising a fluid system to operate said piston when said valve is actuated, and spring means for effecting the return stroke of said piston and the return of said head to raised position after a pressing operation.

3. A garment-pressing machine comprising a vertical standard, a base for said standard, a bracket on said standard, a buck supported by said bracket, a head disposed in operating relation above said buck, a cylinder and a piston for workably supporting said head over said buck, an extension on the upper portion of said standard to carry said cylinder and said piston, a fluid valve on said base, a fluid connection leading from said valve to said cylinder and said piston to operate said piston when said valve is actuated and to move said head toward said buck, and spring means for effecting the return stroke of said piston and the return of said head to raised position after a pressing operation.

4. A garment-pressing machine comprising a vertical standard, a base for said standard, a bracket on said standard, a buck supported by said bracket, a table mounted on said bracket adjacent said buck, a head disposed in operating relation above said buck, a cylinder and a piston for workably supporting said head over said buck, an extension on the upper portion of said standard to carry said cylinder and said piston, a valve, a fluid connection leading from said valve to said cylinder and said piston to operate said piston when said valve is actuated and to move said head toward said buck, and means for effecting a return stroke of said piston and the return of said head to raised position after a pressing operation.

5. A garment-pressing machine comprising a vertical standard, a base for said standard, a bracket on said standard, a buck supported by said bracket, a head disposed in operating relation above said buck, a cylinder and a piston for workably supporting said head over said buck, said piston being axially and revolvably movable in said cylinder, an extension on the upper portion of said standard to rigidly carry said cylinder, a valve, a fluid connection leading from said valve to said cylinder and to said piston to operate said piston when said valve is actuated and to move said head toward said buck, and spring means for effecting a return stroke of said piston and the return of said head to raised position after a pressing operation, said springs being on opposite sides of said cylinder and said piston and connecting at one of the ends to said cylinder and at the other end to said piston.

6. A garment-pressing machine comprising a vertical standard, a base for said standard, a bracket on said standard, a buck supported by said bracket, a swivelly supported head in working alignment with said buck, and means for carrying said head including an extension on said

standard, a cylinder substantially rigidly carried by said extension, a piston revolvably and axially movable in said cylinder, said head being connected to said piston, means for exerting pressure in said cylinder to effect a pressing stroke of said head toward said buck, and spring means on opposite sides of said cylinder and said piston and connected thereto to effect a return stroke of said head when the pressure is released in said cylinder, said springs tending to keep said head aligned with said buck although allowing limited swivelling of said head.

7. A garment presser of the class described, comprising a frame structure, a horizontal buck on said frame structure, a heated head disposed in operating relation above said buck, a fluid pressure cylinder also carried by said frame structure, a relatively long-stroke piston in said cylinder carrying said head, a source of fluid pressure to operate said piston in said cylinder to effect a pressing operation, means returning said head when the pressure is relaxed in said cylinder, and pressure control means for controlling the pressure in said cylinder to operate said head at will in long or short strokes against said buck, said frame structure mounting said cylinder and head in widely spaced relation from said buck.

8. A garment presser of the class described comprising a frame structure, a horizontal buck carried by said frame structure, a heated head disposed in operating relation above said buck, a fluid pressure cylinder also carried by said frame structure, a piston in said cylinder carrying said head, a source of fluid pressure to operate said piston in said cylinder to force said head against said buck to effect a pressing operation, means to raise the head when the pressure is relaxed in the cylinder, and control means for controlling the pressure in said cylinder to variably operate the head in light or heavy pressure strokes against said buck.

9. A garment presser of the class described, comprising a horizontal buck of a size for insertion inside the shoulder of an upper body garment or the like, a heated presser head of corresponding size disposed in operating relation above said buck, a cylinder, a piston in said cylinder, a source of fluid pressure to operate said piston in said cylinder, said head being connected to said piston, said head being forced down against said buck when pressure is applied to the fluid in said cylinder, spring means to raise the head when the pressure in said cylinder is relaxed, the upper rest position of said head being substantially spaced above said buck, and pedal-operated control means for said source of fluid pressure to effect a variable pressing stroke according to the movement of said pedal means and the pressure transmitted by said source of fluid pressure.

10. A garment presser of the class described, comprising a base and a standard thereon, the upper end of the standard extending laterally, a cylinder carried by said extended end of the standard, a piston for said cylinder, a heated presser head of relatively small size carried by said piston, a horizontal table rotatably mounted on said standard, a plurality of bucks on said table of different sizes adapted to be inserted inside the shoulders of other garment parts to be pressed, the said bucks being spaced apart on said table and in position to be brought axially and severally beneath said head by rotation of said table, indexing means to definitely locate said bucks under said head in the rotation of said

table, a pedal control means for controlling the pressure in said cylinder to operate said head in short or long strokes suitably to press the garment on said buck, and means to return the head in raised position when the pressure is relaxed by said pressure control means.

11. A garment presser of the class described having puffer-sized buck and cooperating pressing head, including a base, a standard carried by said base, the upper end of said standard extending laterally, a long vertical hydraulic cylinder adjustably fixed to said laterally extending end, a piston in said cylinder, said pressing head being carried at the lower end of said piston, said pressing buck being vertically disposed below said head, a bracket adjustably secured to said standard and rigidly supporting said buck in axial alignment with said head and cylinder, a pedal-operated hydraulic pressure-producing means on said base, a pressure connection therefrom through said standard and connecting with the upper end of said pressing cylinder whereby said head may be operated against said buck with a variable stroke or pressure, the rest position of said head at the top of its stroke being substantially separated from said buck, and

springs adjacent opposite sides of the cylinder extending therealong and connecting to said cylinder at their upper ends and to said piston below said cylinder at their lower ends, said springs raising the said piston in the cylinder when the hydraulic pressure is relaxed and rotatively aligning said head with said buck.

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