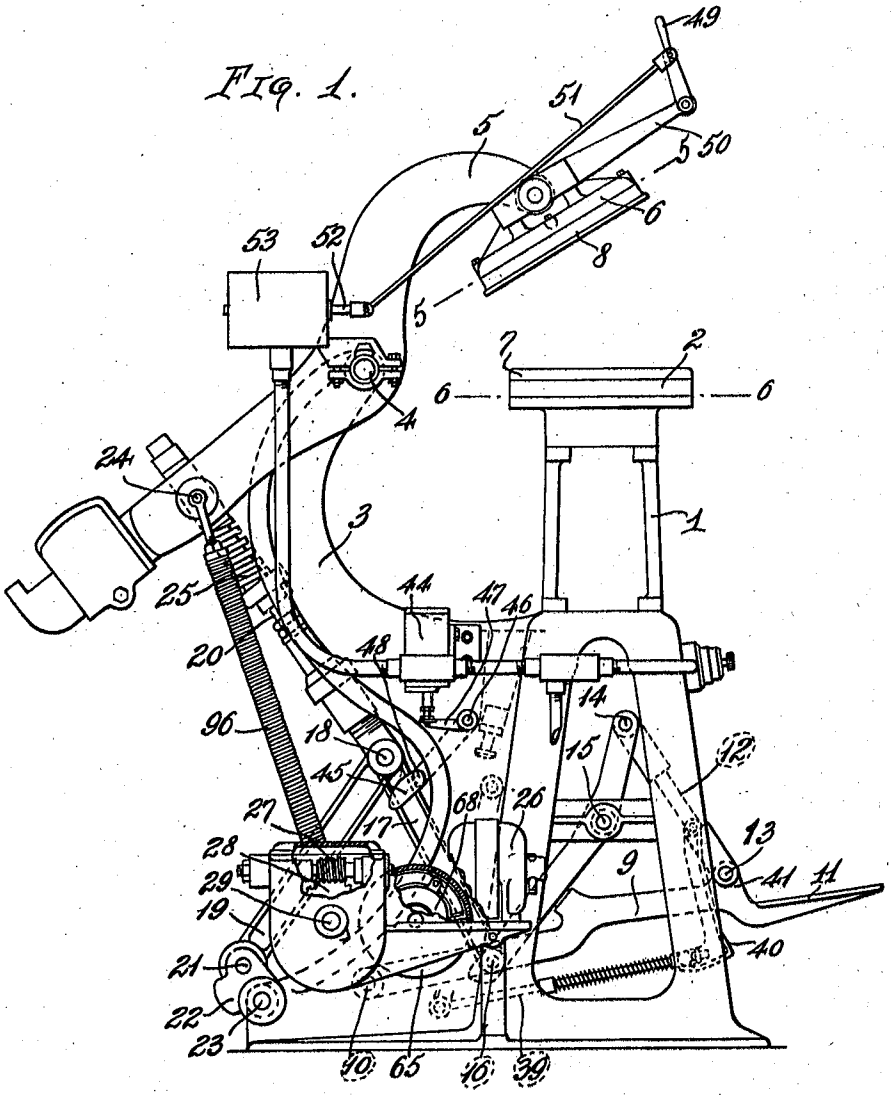
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E. J. CARROLL

ELECTRIC GARMENT PRESS

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Fig. 1.



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FIG. 2.

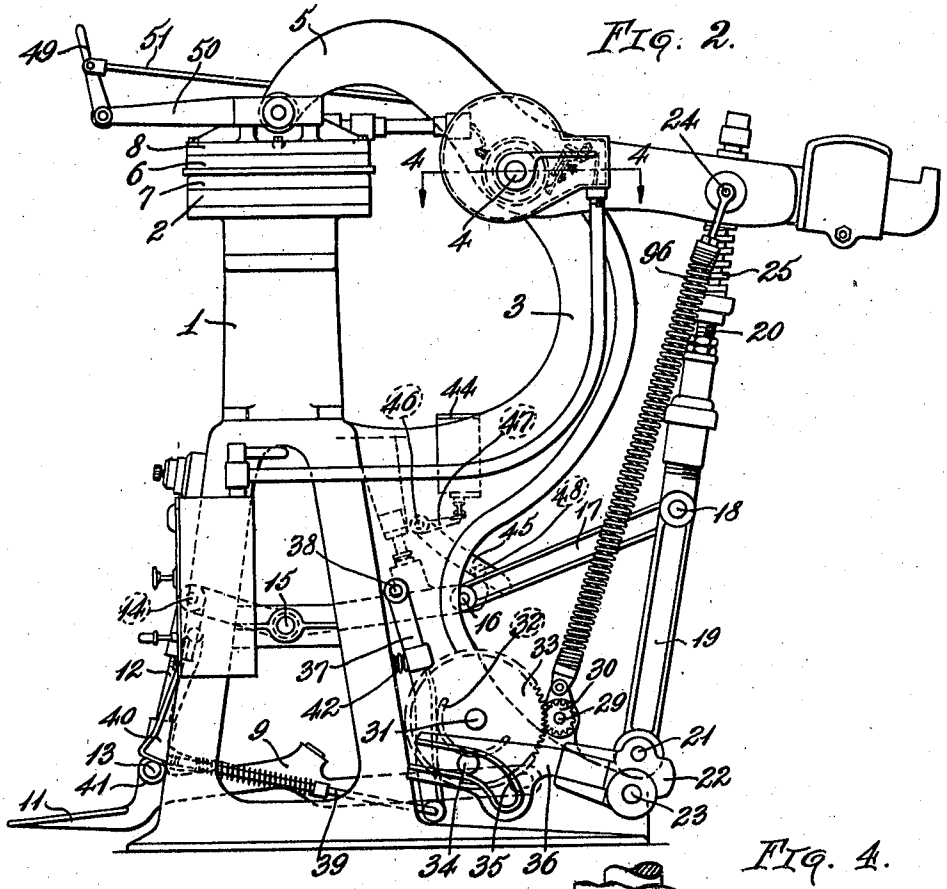


FIG. 3.

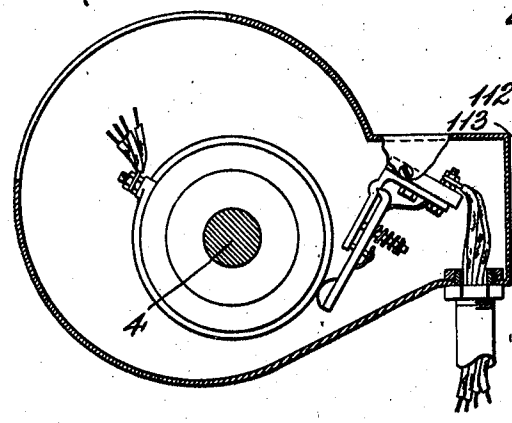
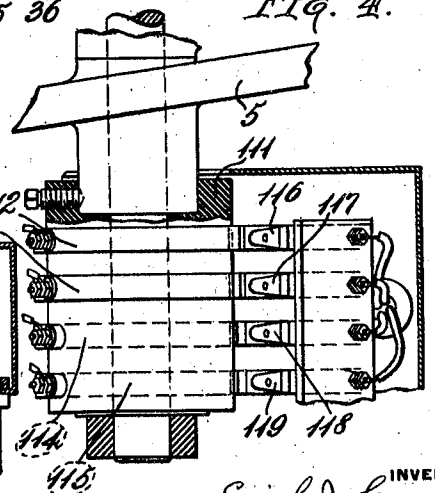


FIG. 4.



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FIG. 5.

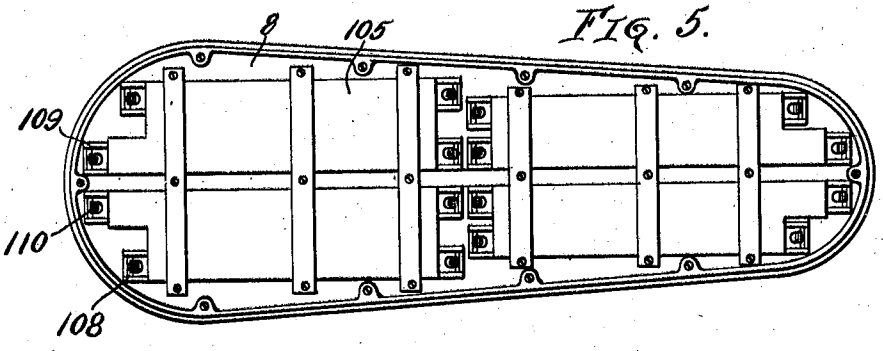


FIG. 6

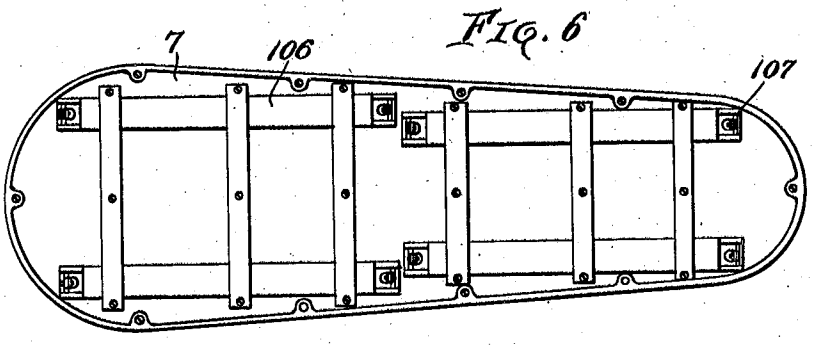


FIG. 7.

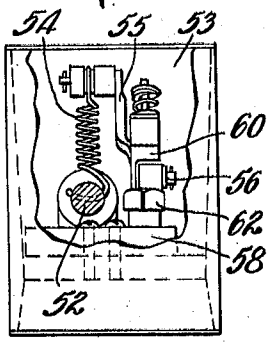
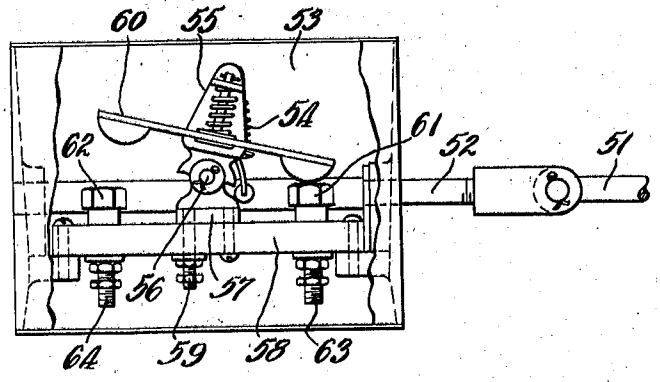


FIG. 8



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Fig. 10.

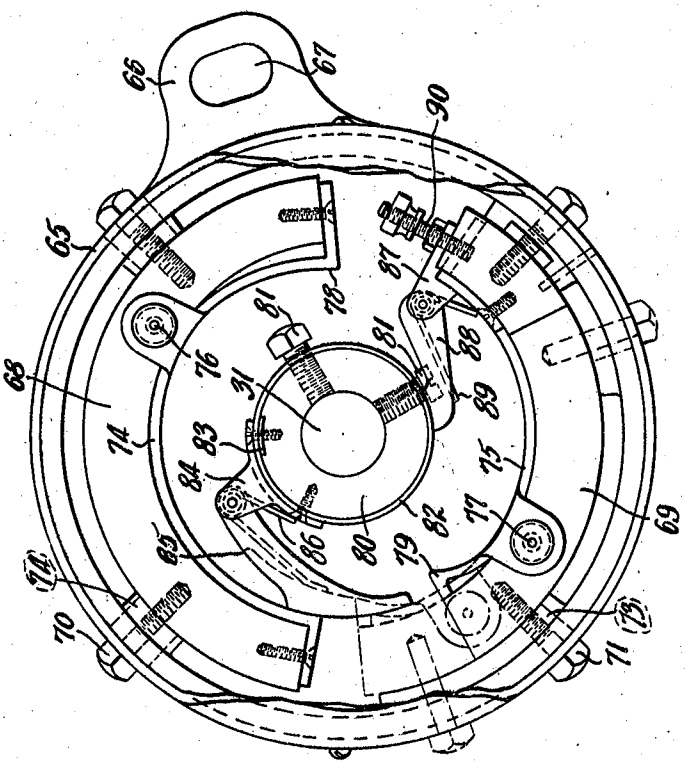
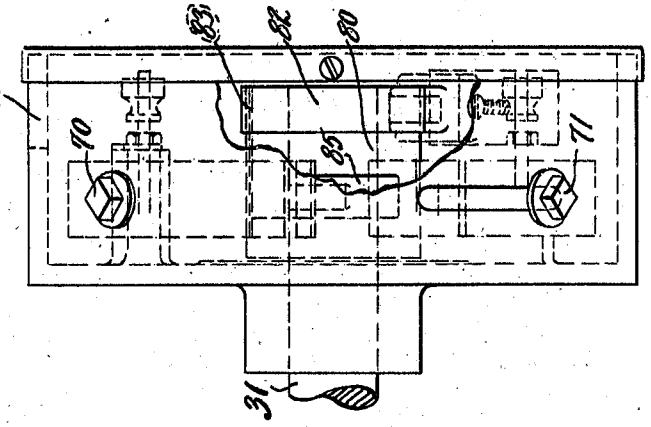


Fig. 9.



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FIG. 11

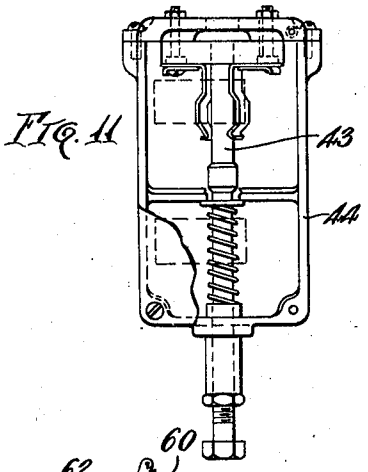


FIG. 13

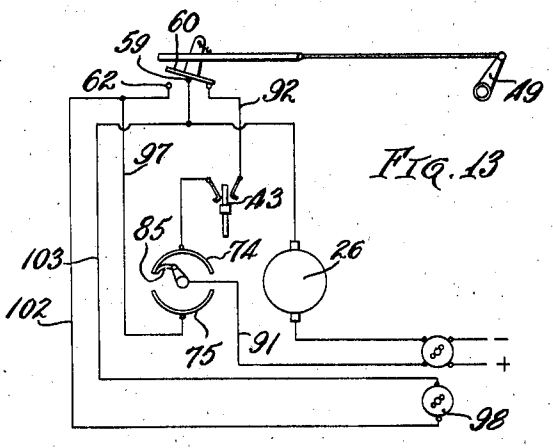


FIG. 14

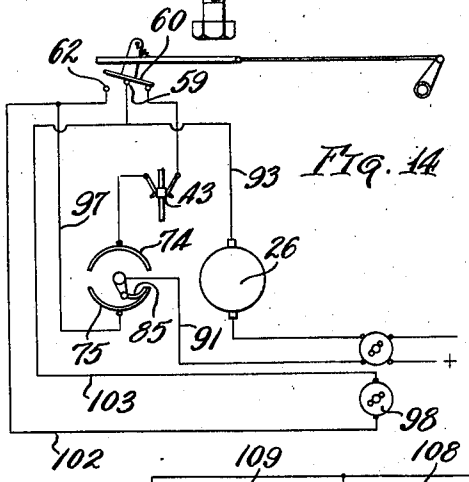
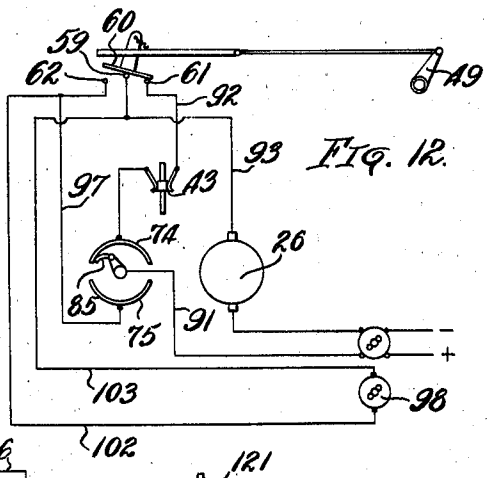


FIG. 12.



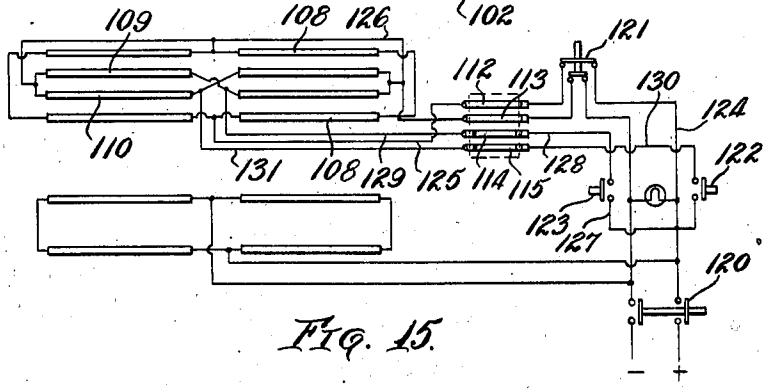


FIG. 15.

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By Brockett & Hyde ATTORNEY

Patented Oct. 19, 1926. 1,603,269

UNITED STATES PATENT OFFICE.

EMIL J. CARROLL, OF NORWOOD, OHIO, ASSIGNOR TO THE AMERICAN LAUNDRY MACHINERY COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

ELECTRIC GARMENT PRESS.

Continuation of application Serial No. 578,702, filed July 31, 1922. This application filed February 20, 1926. Serial No. 89,806.

This invention relates to improvements in garment presses, the present application being a continuation of my co-pending application for electric garment press, filed July 31, 1922, Serial No. 578,702.

One object of this invention is to provide an improved means for heating the garment press; more particularly to provide a means for varying the degree of heat automatically according to whether the press is open or closed.

Other objects of the present invention will be apparent from the following description and claims when considered together with the accompanying drawings.

Fig. 1 is a side elevation of my improved device with parts broken away; Fig. 2 is a side view taken from the other side of the press and showing the head in closed position; Fig. 3 is a detailed sectional view of the electric control means for the heating elements in the buck and head; Fig. 4 is another detailed view of the same heat control means taken on line 4—4, Fig. 2; Figs. 5 and 6 are detailed views showing the arrangement of the heating elements in the head and buck taken on lines 5—5 and 6—6, respectively of Fig. 1; Figs. 7 and 8 are detailed views of the snap switch which is operated by the operator, the casing being broken away; Figs. 9 and 10 are detailed views of the rotary control switch with the casing walls broken away; Fig. 11 is a detailed view of the plunger switch with the casing of the same broken away; Figs. 12, 13 and 14 show diagrammatically the different positions of the switch control mechanism during the cycle of operations of the press; and Fig. 15 is an electrical diagram showing the arrangement and control of the heating elements in the head and buck.

The base or pedestal 1, which supports the buck 2, is provided with the upwardly extending arm 3 upon which is pivotally mounted at the point 4 the lever arm 5 which carries the press head 6. The buck 2 is provided with the heating means 7 and the head 6 is provided with the heating means 8, the details of which will later be described. The means for closing the press head upon the buck comprises the treadle 9 which is pivoted in the frame at the point 10 and is provided with the pedal 11 for depression by the operator. The link 12 is pivoted at its one end to the lever 9 as indicated at the point 13 and at its other end at the point 14 to one end of a lever which is pivoted at the point 15 in the frame of the machine. The other end of this lever is pivoted at the point 16 to the one end of a link 17 and constitutes therewith a toggle lever. The other end of the arm 17 is pivoted at the point 18 to the joint between the toggle which comprises the link 19 and the rod 20. The link 19 is pivoted at the point 21 to the auxiliary link 22, the other end of which is pivoted in the frame at the point 23. The link 22 forms with the arm 19, another toggle for effecting final pressure as will later appear. The rod 20 has swivel connection at the point 24 with the lever arm 5 and is provided with the spring 25. Upon depressing the treadle 11 the toggles including the arms 17, 19 and 20 are brought to substantially straightened position, so as to lower the head 6 upon the buck 2, this means as thus far described constituting what might be termed the means for effecting initial closing pressure upon the work.

The final pressure is effected by straightening the toggle link 22 so as to occupy the position illustrated in Fig. 2, this operation being effected by means of an electric motor 26 which is automatically set into operation upon closing the press head upon the work, the final pressure being effected through the connections to be now described. The motor 26 operates the worm section 27 which meshes with the gear 28 which has fixed upon its shaft 29 the pinion 30. The shaft 31 of the cam member 32 is driven by its gear 33 meshing with pinion 30. This cam member has formed upon its one face a cam portion and upon its other face there is provided the pin 34 which is adapted to engage in the composite slot 35 formed in the cam member 36 which extends from the toggle link 22 for the operation thereof. The cam 32 is adapted to engage and operate the rocker arm 37 which is pivotally mounted at the point 38 in the frame of the machine and which is pivotally connected at its other end to the rod 39 connected to the latch member 40. The latch member 40 is

pivoted in the frame of the machine and is adapted to engage the roller 41 carried by the treadle upon depression of the same. These parts are so constructed and arranged that when the motor is automatically set in operation by the closing of the press head upon the work, the pin 34 will co-operate with the slot 35 to straighten the toggle 22 and thereby effect the final pressure of the press head upon the work while at the same time the cam portion will cause the latch 40 to engage over the roller 41 and to remain in such a position until it is permitted to be withdrawn by action of the spring 42 which normally tends to force the arm 37 in a direction toward the right as viewed in Fig. 2.

As a means of automatically closing the circuit through the motor upon lowering the press head upon the buck, the plunger switch 43 enclosed within the casing 44, which is suitably mounted upon the frame of the machine, is closed by means of the lever 45 pivoted at the point 46 and provided with the extension or arm 47 which is adapted to engage the plunger rod of the switch 43. This operation is effected by the lever arm 17 engaging the projection 48 on the lever arm 45 upon straightening of the toggles in order to create the initial pressure upon the work. In order to close the circuit through the motor it is also necessary for the operator to close another switch illustrated in detail in Figs. 7 and 8, which switch may be closed either before or after lowering the head upon the buck. This switch is manipulated by means of the handle 49 which is pivoted upon the arm 50 for operating the rod 51 connected at its other end to the stem 52 which extends into the switch casing 53. Having its one end secured to the stem 52, there is provided a spring 54 whose other end is connected to the rock arm 55 pivoted at 56 to the bracket 57. The contact bracket 57 is mounted upon the insulator member 58 suitably secured within the casing and is provided with the binding post 59. The contact blade 60, which is mounted upon the rocker arm 55, is adapted to be snapped into contact with either of the contact members 61 and 62 which are mounted upon the insulator member 58 and which are provided with binding posts 63 and 64 respectively. Thus it will be seen that upon manipulation of the handle 49 the contact blade 60 may be snapped into position so as to close the circuit through either of the contacts 61 and 62, the spring 54 holding the blade 60 in such position past dead center. Thus with the switches just now described in closed position the motor will be set in operation to effect final pressure upon the work.

Mounted upon the cam shaft 31 there is provided an automatic switch control which is operated by the motor, this switch mechanism being suitably enclosed within the casing 65 which has an ear 66 by which the casing can be adjusted to different positions and secured in such said position by means of a screw bolt or the like extending through the slot 67 and engaging the frame of the machine. Adjustably mounted within the casing are the insulator segments 68 and 69 which, by means of the screw bolts 70 and 71 and the slots 72 and 73 through which the bolts extend, may be adjusted for the purpose of timing the operation of the rotary control switch with respect to the position of the head in its lowering operation. Suitably secured to the insulator segments are the electric contact segments 74 and 75 provided with the binding posts 76 and 77. These contact segments are curved inwardly at one end, as indicated at 78 and 79, for a purpose which will later appear. The insulator bushing 80 is secured to cam shaft 31 by means of the screws 81. Secured about the bushing 80 is the contact ring 82 which has electric connection with the strips 83 extending along the bushing and secured at their inner ends to the bracket 84 upon which is pivotally mounted the contact shoe 85 adapted to engage the contact segments 74 and 75 under pressure of the spring 86. By having the ends of the contact segments curved as at the points 78 and 79, the contact shoe 85 will move from the end of one contact segment to the adjacent end of the other with a decided snap action. Pivotally mounted upon the bracket arm 87, which is suitably mounted upon the insulator segment 69, is the contact shoe 88 which by means of the spring 89 is normally forced into contact with the contact ring 82. The binding post 90 is provided for the bracket 87.

By referring to the diagrams shown in Figs. 12, 13 and 14, it will be seen that upon the operator manipulating handle 49 so as to occupy the position indicated in Fig. 12 the toggle switch will be closed and upon closing the press head upon the buck the plunger switch will be closed. And with the contact shoe 85 in the position indicated in Fig. 12 circuit will be established through the motor so as to start the same. This circuit may be followed thus: from the positive side of the main line through wire 91, contact shoe 85, contact segment 74, plunger switch 43, wire 92, contact 61 of the toggle switch, through the binding post 59 and through the wire 93, through motor 26 and out to the negative side of the main line. This circuit will continue and the motor will continue to operate so as to effect final pressure until the contact shoe 85 leaves the contact segment 74 and passes into engagement with the contact segment 75; at which moment the circuit will be broken since con-

tact segment 75 is not in the motor circuit. Thus the press may remain locked in closed position and under final pressure for as long a time as desired.

Then when it is desired to release the press and to open the same the operator will move the handle 49 in a direction to the right, as viewed in Fig. 2, so as to snap the blade 60 into engagement with the contact 62, thereby establishing circuit through contact segment 75 whereupon the motor will be again set in operation. The operation of the motor will release the latch from the treadle and will break the toggle 19 and 22 so as to permit the press head to open under influence of the spring 96. The plunger switch is also returned to open position. This circuit may be followed thus: from the positive side of the main line through wire 91, contact shoe 85, contact segment 75, wire 97, through contact 62 of the toggle switch out through binding post 59 to wire 93 and the motor 26 to the negative side of the main line. This opening operation of the motor will continue until the contact shoe 85 passes on to the segment 74 which is not now in the motor circuit; whereupon the motor will stop, the press being now in open position after having passed through the complete cycle of closing and opening movements.

In the present case I have provided an additional auxiliary electric circuit whereby the control mechanism may be set so as to either stop the motor upon straightening the link 22, as in the manner above recited, or may be set so as to automatically release and open the press immediately after effecting final pressure. This auxiliary circuit is controlled by the operator by means of the hand switch 98 which when closed will operate in the following manner. Referring to Fig. 12 and supposing the switch 98 to be closed, the final pressure will upon closing the press be effected through the operation of the motor in the same manner as above described. When, however, the contact shoe 85 passes into engagement with the contact segment 75, the motor will not stop as in the first case, but will continue to operate. In this case the circuit may be traced as follows: from the positive side of the main line through wire 91, contact shoe 85, contact segment 75, wire 97, wire 102, switch 98, wire 103, wire 93 through the motor 26 to the negative side of the main line. Thus it will be seen that according to whether the switch 98 is open or closed the press will perform either a half cycle or a full cycle of closing and opening movements.

I have provided also a means for regulating the heat of the head and buck according to whether the press is in open or closed position. Suitably secured, as for instance by means of screws, to the head and buck, are the heat conducting casings 7 and 8 shown in detail in Figs. 5 and 6, these casings enclosing the heating elements in the form of resistance coils across which extend the retaining plates 105 and 106. The ordinary coverings may be used upon the head and buck. The heating elements in the buck are indicated by reference numeral 107, the heat in the buck being the same at all times during use of the press except as the heat may be turned off by the operator entirely. In the press head, however, I have provided a series of heating elements so as to produce low, medium or high heat according to the number of heating elements thrown into the circuit. The elements for low heat are indicated by reference numeral 108; those for medium heat by reference numeral 109; and those for high heat by reference numeral 110, it being understood that the low heat elements are energized as part of all three degrees of heat and that the medium heating elements form a part of the high heat. The means for controlling the degree of heat comprises an insulator hub 111 mounted upon the axis of arm 5 for rotation therewith upon opening and closing the head. Suitably secured about the insulator head 111 I have provided a number, four being here shown, of annular contact members 112, 113, 114 and 115, the first two named being full rings and corresponding to the low heat elements; whereas the other contact elements 114 and 115 are merely partial rings and correspond to the medium and high heats respectively. A battery of contact fingers 116, 117, 118 and 119 are suitably mounted as shown in Figs. 3 and 4 of the drawings so as to have contact with the contact members 112 to 115, respectively. These parts are so constructed and arranged that when the press head is open, as in Fig. 1, only the heating elements 108 are in circuit, or in other words, the press head is subjected to only low heat. This will be more fully understood by reference to Fig. 15. The circuit including the heating elements is controlled by the main switch 120 and also cut-out switch 121. The switch 122 corresponds to the high heat and switch 123 corresponds to medium heat. Thus it will be seen that upon closing the switch 120, and with switches 122 and 123 open, the switch 121 being in normally closed position, the current will pass from the positive side of the main line through wire 124, closed switch 121, contact ring 112, wire 125, low heat elements 108, wire 126 and out through contact ring 113 to the negative side of the main line. The low heat units are each 110-volt heaters, two of them in series making up 220-volt service. The medium and high heat units are each 220 volt heaters and are arranged in parallel. The low heat units are arranged about the marginal portion of the press so as to heat the edges first, conduction producing a

fairly even distribution of heat. The medium and high heat units are arranged diagonally for the same purpose of even distribution of heat.

Then upon the switch 123 being closed by the operator, a medium heat may be effected upon closing the press. The circuit may then be traced as follows: from the positive side of the main line through the closed switch 120, and through circuit just now described for low heat. In addition to this there will also be established the circuit from the positive side of the main line through switch 120, wire 127, closed switch 123, wire 128, contact segment 114, wire 129, heating elements 109, contact ring 113 and the closed switch 121 to the negative side of the main line.

Then when it is desired to effect high heat, the switch 122 will be closed by the operator and upon closing the press head the following circuit will be established in addition to the low and medium heat circuits just now described; from the positive side of the main line through switch 120, closed switch 122, wire 130, contact segment 115, wire 131, heating elements 110, contact ring 113, and closed switch 121 to the negative side of the main line. The degree of heat which is desired for the press head upon closing the same may be varied by opening or closing either of the switches 122 and 123 and the heat can be cut off entirely from the press head by opening the switch 121. The heat can be cut off from both the head and buck by opening switch 120.

What I claim is:—

1. A garment press comprising a buck, a press head, means for closing the head upon the buck, means for heating the press, said heating means including electric heating units in the head, and means for automatically energizing more or less of said units according to whether the press is open or closed.

2. A garment press comprising a buck, a press head, means for closing the head upon the buck, means for heating the press, said means including electrical heating units in the buck and head and circuit controlling means for some of said units, and said circuit controlling means being operated by movement of said head, whereby the degree of heat is automatically regulated according to whether the press is open or closed.

3. A garment press comprising a buck, a press head adapted for swinging movement towards and from said buck, means for operating said head, means for heating the press, said heating means including electric heating units and circuit controlling means for at least some of said units, and said circuit controlling means including a rotatable member mounted upon the axis of said swingingly mounted head so as to be actuated by the opening and closing of the head.

4. A garment press, comprising relatively movable pressing members, means for closing said members together, means for heating the press, said heating means including electric heating units in at least one of said members, and means for automatically energizing more or less of said units according to whether the press is open or closed.

5. A garment press, comprising a buck, a press head, means for closing the head upon the buck, means for heating the press, said heating means including electric heating units, and means for automatically energizing more or less of said units according to whether the press is open or closed.

In testimony whereof I hereby affix my signature.

EMIL J. CARROLL