June 5, 1928. 1,672,303

E. J. CARROLL ET AL

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 1

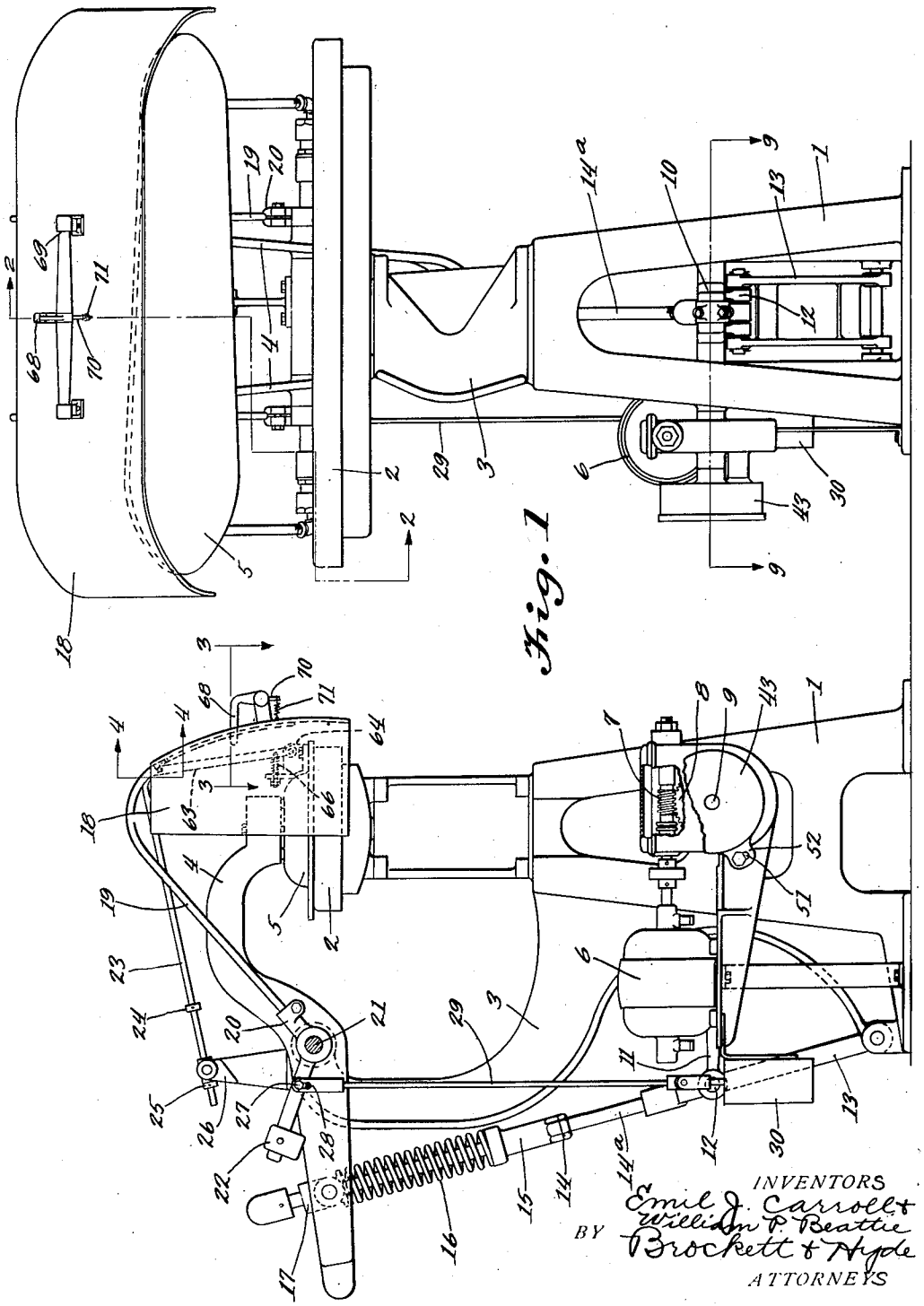


Fig. 1

INVENTORS
Emil J. Carroll &
William P. Beattie
BY Brockett & Hyde
ATTORNEYS

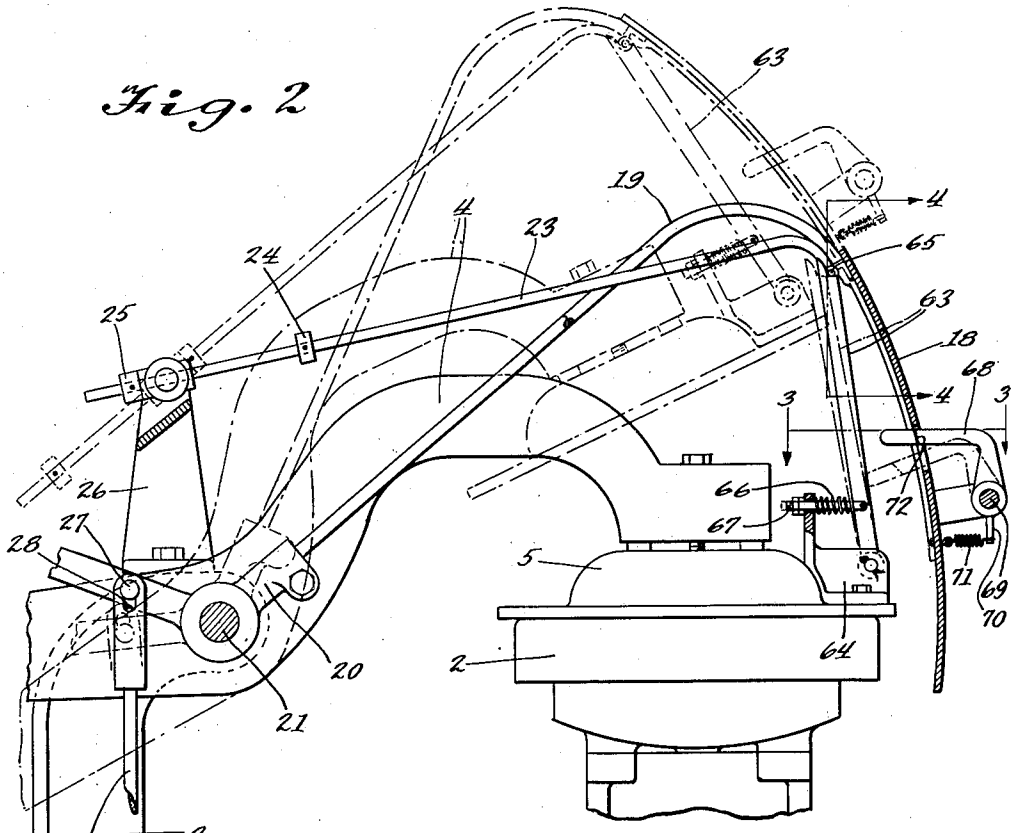
June 5, 1928. 1,672,303

E. J. CARROLL ET AL

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 2

Fig. 2



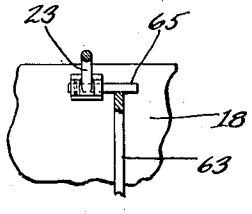


Fig. 4

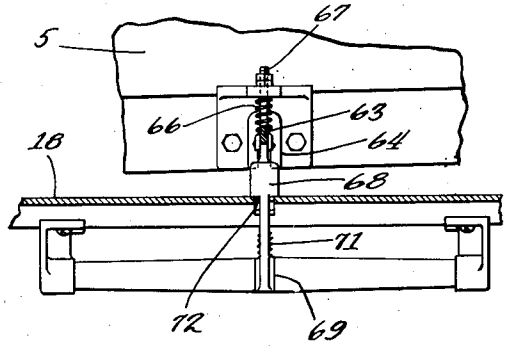


Fig. 3

INVENTORS
Emil J. Carroll
William P. Beattie
BY Brockett & Hyde
ATTORNEYS

June 5, 1928. 1,672,303

E. J. CARROLL ET AL.

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 3

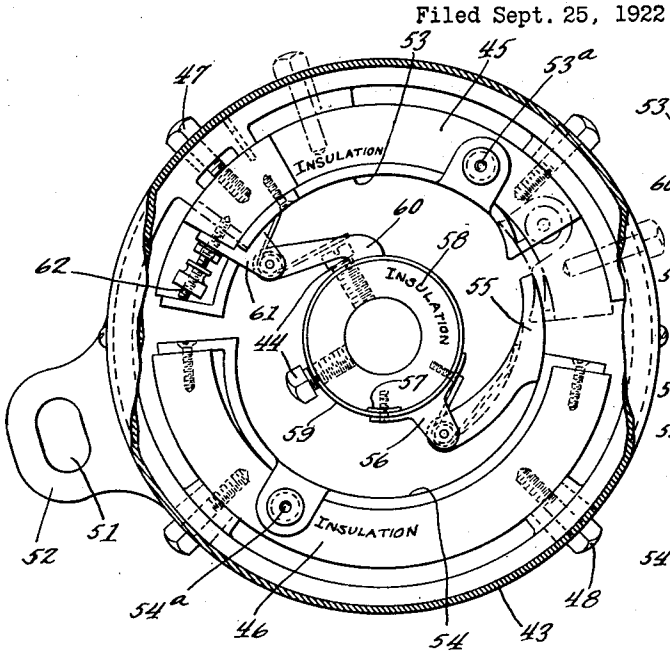


Fig. 5

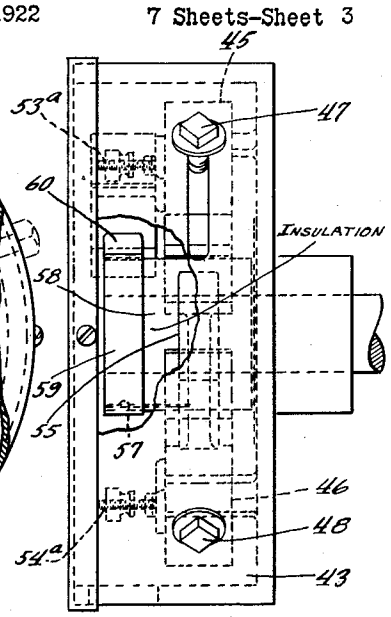


Fig. 6

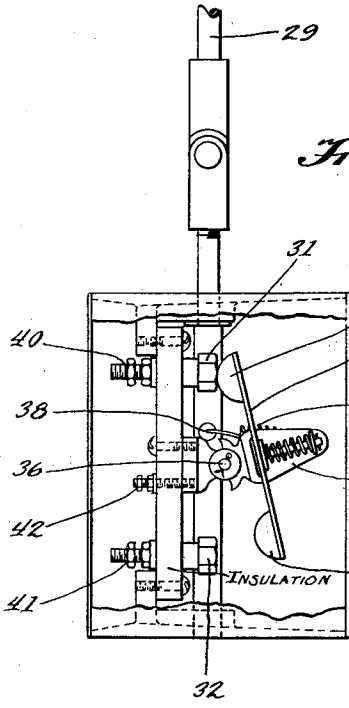


Fig. 7

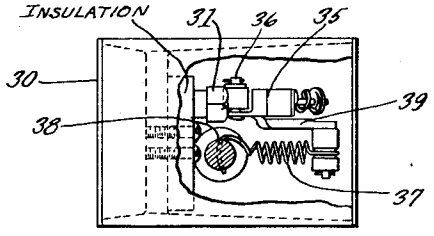


Fig. 8

INVENTORS
Emil J. Carroll +
BY William P. Beattie
Brockett & Hyde
ATTORNEYS

June 5, 1928. 1,672,303

E. J. CARROLL ET AL

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 4

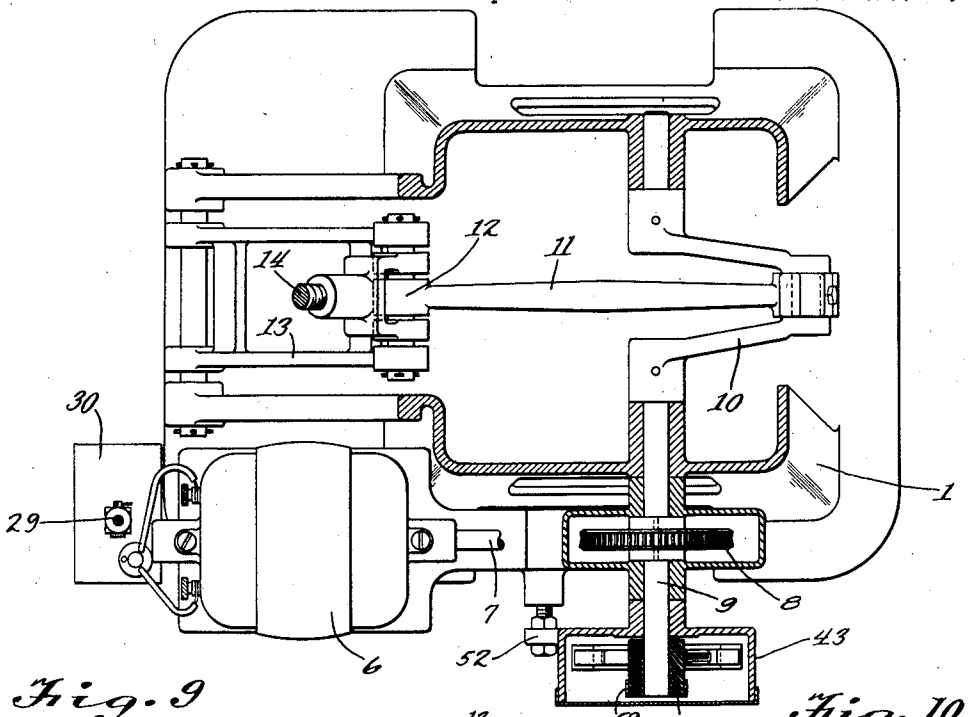


Fig. 9

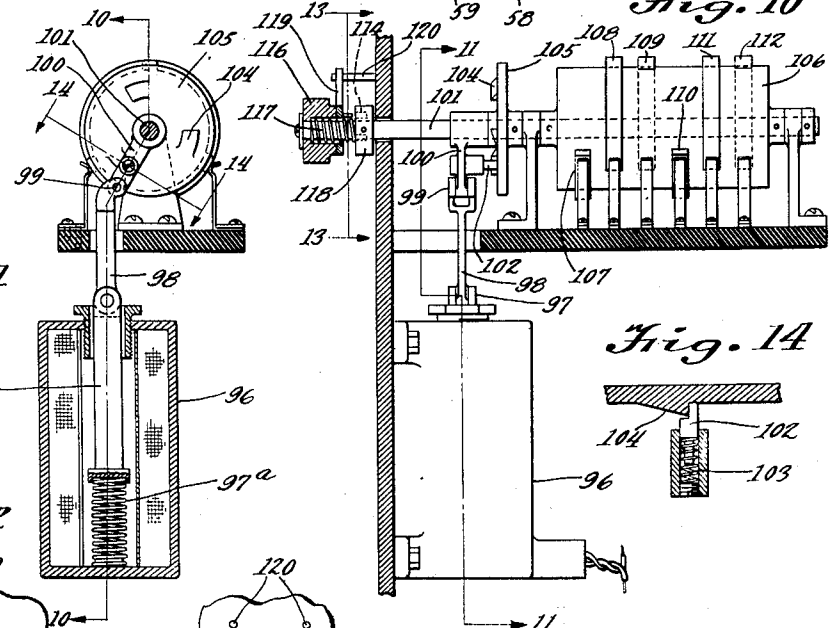


Fig. 10

Fig. 11

Fig. 12

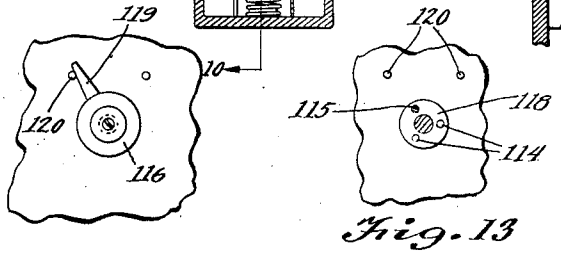


Fig. 13

Fig. 14

INVENTORS
Emil J. Carroll
William P. Beattie
BY Brockett & Hyde
ATTORNEYS

June 5, 1928. 1,672,303

E. J. CARROLL ET AL

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 5

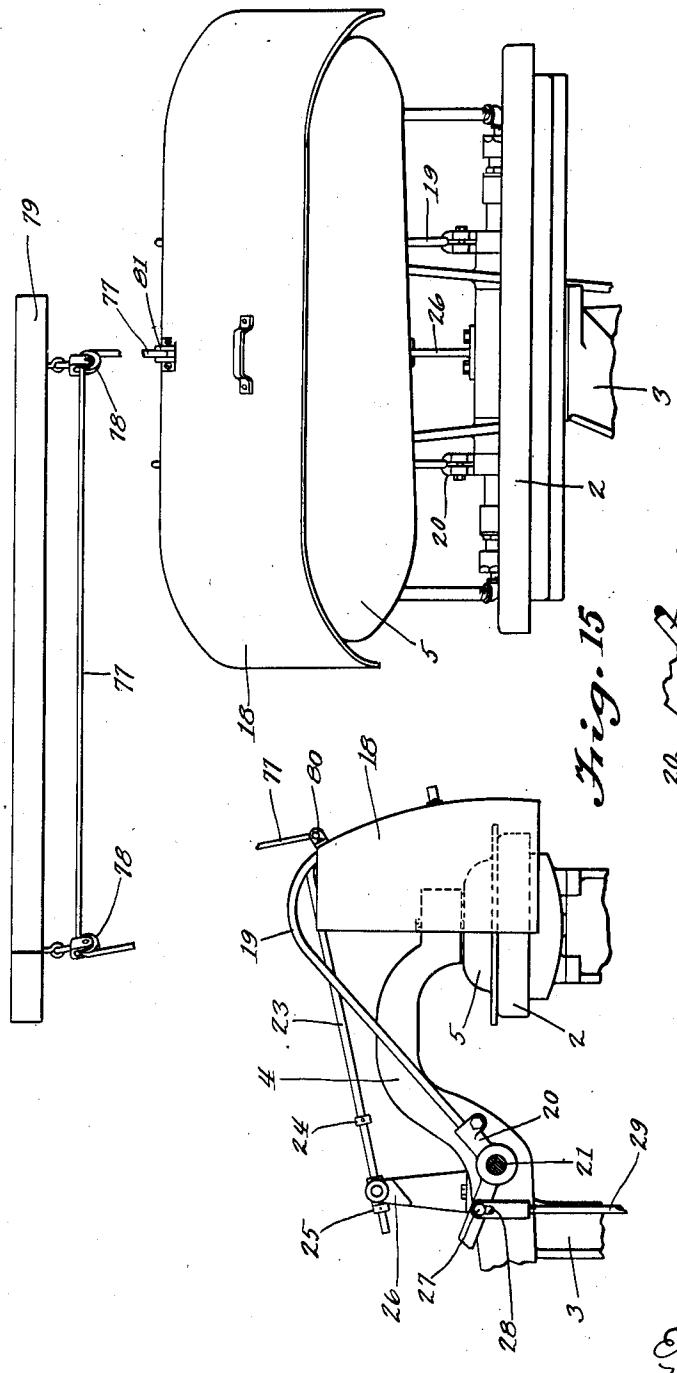


Fig. 15

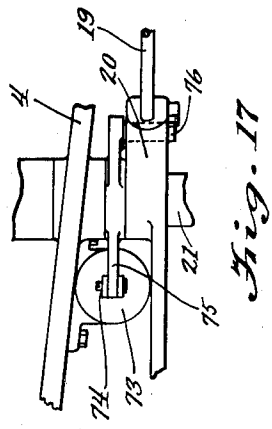


Fig. 17

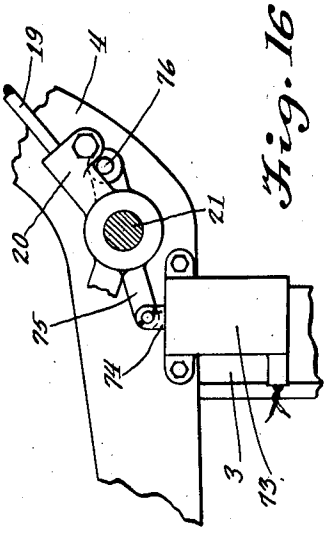


Fig. 16

INVENTORS
Emil J. Carroll &
BY William P. Beattie
Brockett & Hyde
ATTORNEYS

June 5, 1928. 1,672,303

E. J. CARROLL ET AL

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 6

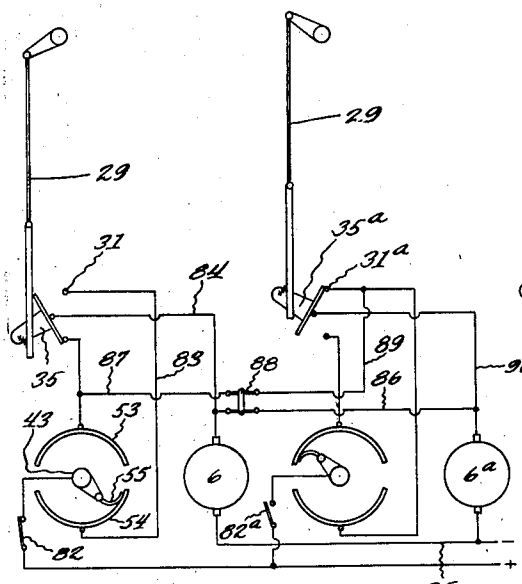


Fig. 18

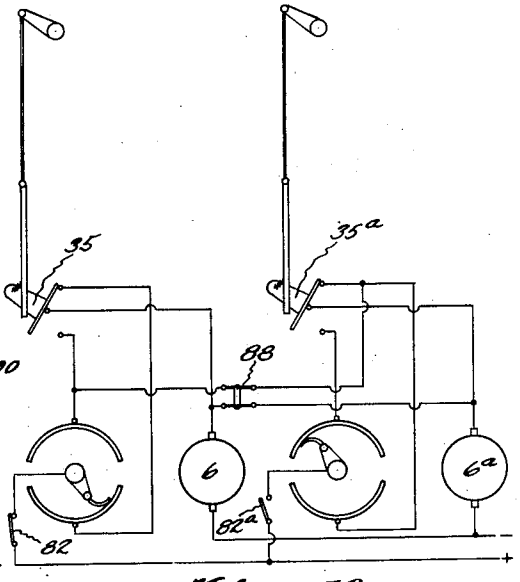


Fig. 19

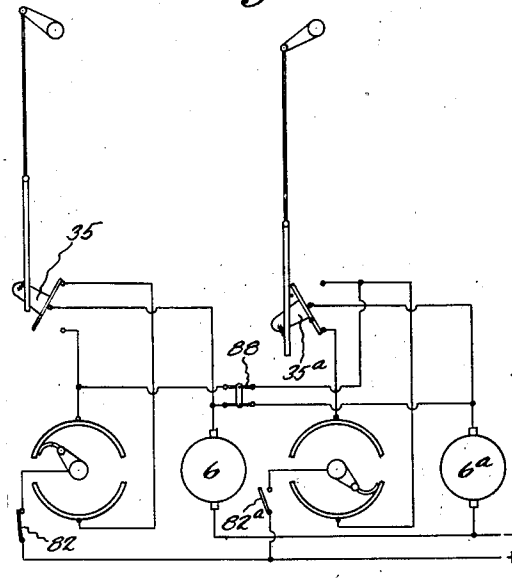


Fig. 20

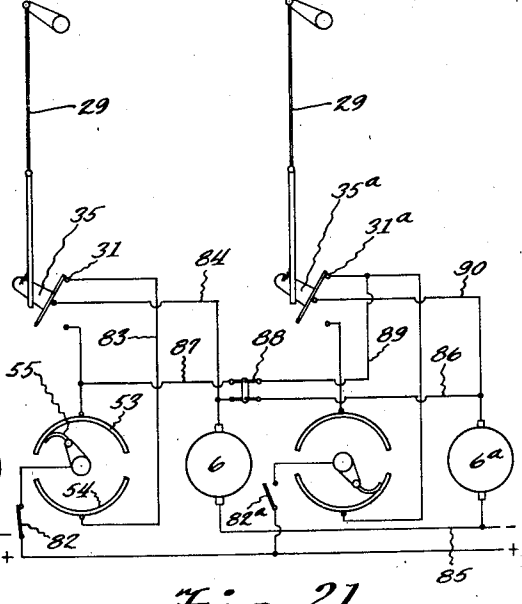


Fig. 21

INVENTORS
Emil J. Carroll &
BY William P. Beattie
Brockett & Hyde
ATTORNEYS

June 5, 1928. 1,672,303

E. J. CARROLL ET AL

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP

Filed Sept. 25, 1922 7 Sheets-Sheet 7

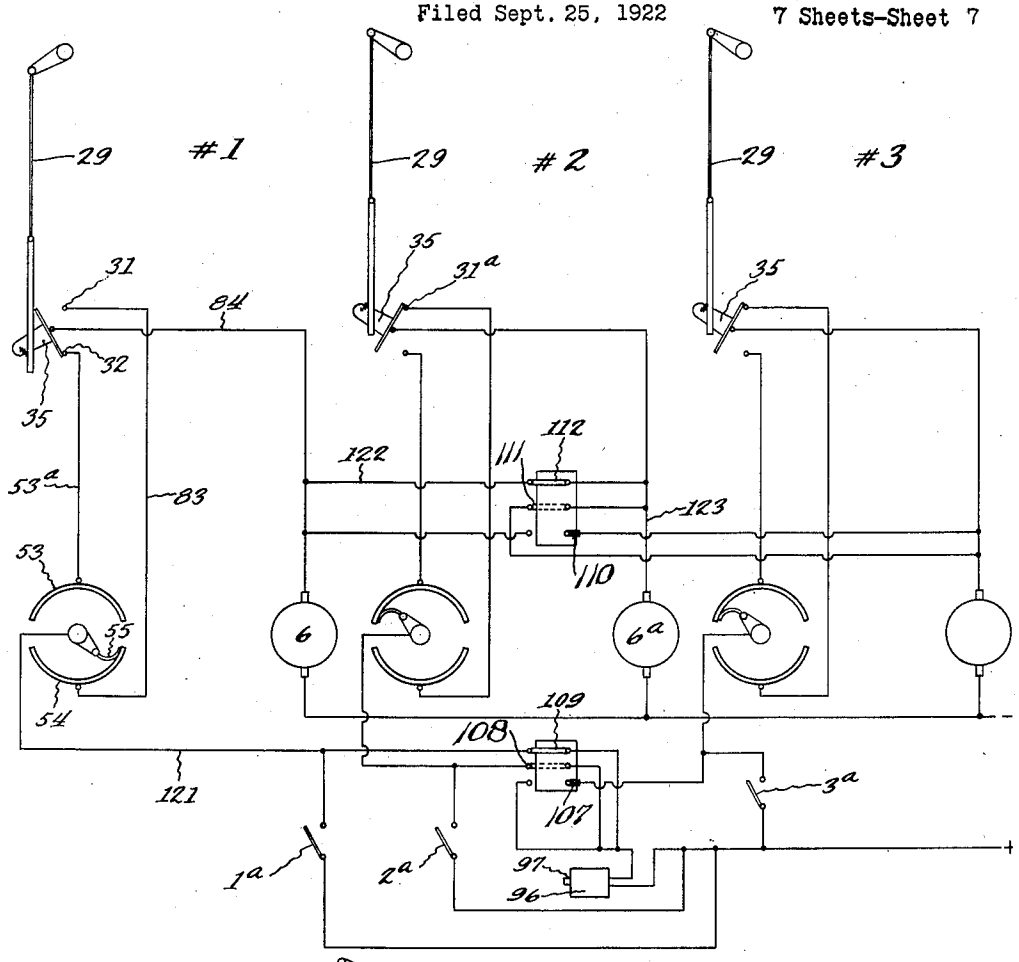


Fig. 22

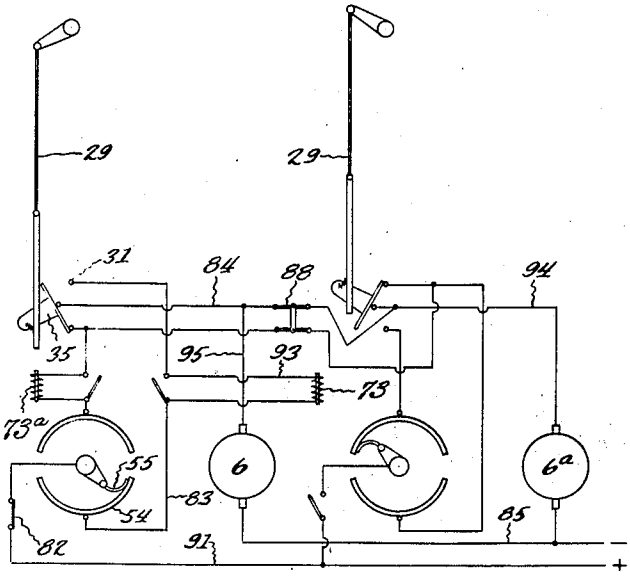


Fig. 23

INVENTORS
Emil J. Carroll &
BY William P. Beattie
Brockett & Hyde
ATTORNEYS

Patented June 5, 1928. 1,672,303

UNITED STATES PATENT OFFICE.

EMIL J. CARROLL AND WILLIAM P. BEATTIE, OF NORWOOD, OHIO, ASSIGNORS TO THE AMERICAN LAUNDRY MACHINERY COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

MEANS FOR OPERATING GARMENT PRESSES IN TANDEM OR GROUP.

Application filed September 25, 1922. Serial No. 590,410.

This invention relates to improvements in garment presses.

The object of this invention is to provide an improved combination and arrangement of garment presses with means by which one press can be closed and another automatically opened at the same time.

Another object is to provide electric motor means for operating the presses, together with controlling means therefor by which the controller of one press can be actuated for the purpose of closing one press and automatically opening another press at the same time; more particularly to provide a combination of presses, together with a guard for each press, such guards being so arranged in the electric motor system that the lowering of the guard of one press into operative position will set into operation the motor means so as to close the first press and automatically open another press.

Another object is to provide means in such an arrangement and combination of presses whereby one of the presses can be operated separately and independently of the other presses by actuation of switches in the electric motor circuit.

Another object is to provide a system of three or more garment presses so combined and arranged with electric motor means that such presses can be selected for operation in various tandem combinations; more particularly to provide means for automatically substituting a third press for one of the presses of the tandem so as to vary the combination of presses and to thereby effect a progressive opening and closing of all the presses included in the system.

Another object is to provide means whereby the press which is closed in such a combination of presses can be immediately reopened independently of the other presses of the system and again closed by means of switches in the electric motor operating system.

Another object is to provide an interlocking connection between the guard and the head of a press whereby the guard may be released by the operator so as to be lowered into ironing position for actuating the motor operating means which then lowers the head of the corresponding press and whereby the guard and head will be interlocked for opening together.

A further object is to provide an electrical interlocking connection between the head of a press and the corresponding guard; more particularly to provide such an electrical means which is included in the electric motor circuit for operating the presses, whereby the electrical interlock is effective only while the corresponding motor circuit is closed.

A further object is to provide guards for the several presses with direct mechanical connection between the guards whereby the one guard is automatically raised upon lowering of the other guard.

A still further object of this invention is to provide a mechanical interlocking means between the guard and the head of the corresponding press which can be manually released by the operator so as to permit the guard to be lowered into guarding position prior to the closing of the head of the press.

Another object of this invention is to provide such an arrangement and combination of presses with means for closing one of the presses and at the same time automatically opening another of the presses, together with means for automatically stopping the operation of the presses upon completion of the opening and closing movements of the same.

Other objects of this invention will be apparent from the following description and claims, when considered in connection with the drawings.

Fig. 1 shows in elevation a pair of presses to be operated in tandem; Fig. 2 is a sectional view of a portion of one of the presses taken on line 2—2 of Fig. 1; Fig. 3 is a detail sectional view of a part of a press taken on line 3—3 of Figs. 1 and 2; Fig. 4 is a detail sectional view on line 4—4 of Figs. 1 and 2; Figs. 5 and 6 are detail views of the distributor switch with portions of the casing removed; Figs. 7 and 8 are detail views of the controller switch with part of its casing broken away; Fig. 9 is a horizontal sectional view of a press taken on the line 9—9 of Fig. 1; Fig. 10 is a detail sectional view of the drum switch taken on line 10—10 of Fig. 11; Fig. 11 is a detail sectional view of

the drum switch taken on line 11—11 of Fig. 10; Fig. 12 is a front elevation of the drum switch knob; Fig. 13 is a detail sectional view of the drum switch taken on line 13—13 of Fig. 10; Fig. 14 is a detail sectional view of the drum switch ratchet taken on line 14—14 of Fig. 11; Fig. 15 is an elevation of a part of two presses connected in tandem by means of interlocking guards; Fig. 16 is a sectional detail view of the electrical locking means for the head and guard of a press; Fig. 17 is a plan view of the electrical interlocking device; Figs. 18, 19, 20 and 21 are electric diagrams showing various progressive positions of the controller switches for the motor circuits of the presses in tandem; Fig. 22 is an electric diagram of three presses and illustrates the means for automatically substituting a third press for one of the other two; and Fig. 23 is an electric diagram showing the electrical interlocking arrangement with the guard and head of each of the two presses connected in tandem.

The several presses illustrated as being arranged in combination are of the same construction and a description of one will therefore suffice.

The type of press illustrated in this combination comprises frame 1 upon which is supported bed 2 which supports the garment. The frame is provided with arm 3 upon which is pivotally mounted lever arm 4 carrying press head 5. The press head is adapted to be lowered and raised by means of electric motor 6 suitably mounted upon the frame of the press, this motor driving worm shaft 7 which meshes with gear 8 upon shaft 9. Fixed upon shaft 9 is crank 10 for operation thereby, so as to drive connecting link 11, one end of which is pivotally connected to the crank while its other end is pivotally connected at point 12 to the toggle lever comprising links 13 and 14. Link 13 is pivoted in the base of the machine while link 14 comprises rod 14^a pivoted at point 12 and having its other end extending through adjustable member 15 which forms an abutment for one end of coil spring 16, the other end of which abuts member 17 which is swiveled in the rear end portion of lever arm 4. Rod 14^a extends through swivel member 17 in a manner already known in the art. Thus, operation of motor 6 will straighten the toggle lever for closing the press and will also break the same for opening the press.

Each press is provided with a guard 18 which is mounted upon rods 19 which have their other ends secured in lever 20 pivotally mounted at point 21. The rear arm of one of levers 20 is weighted at 22 so as to counter-balance the guard. Rod 23 has its one end connected also to the guard, while its free end is provided with stops 24 and 25 which are adapted to engage with the upper end portion of bracket 26 through which rod 23 extends, thereby providing a stop means for limiting the swinging movement of the guard. The rear arm of lever 20 is provided with pin 27 engaging in slot 28 of a member carried by the upper end of rod 29 for actuation by the raising and lowering movements of the guard so as to control a switch enclosed in the casing 30, the detail structure of which is disclosed in Figs. 7 and 8.

Casing 30 encloses contact members 31 and 32 suitably mounted upon insulation for cooperation with contacts 33 and 34, respectively, carried by contact blade 35. Contact blade 35 is rockably mounted at point 36 upon a bracket suitably mounted in the casing and is adapted to be snapped into either one of its two positions by means of spring 37, one end of which is anchored at 38 to one side of point 36, while its other end is secured to the bracket 39 which carries blade member 35. Each of contact members 31 and 32 is provided with a suitable binding post 40 and 41, and a third binding post 42 is also provided for the wiring connections. Thus, it will be seen that upon raising and lowering the rod 29, blade 35 is snapped into either of two positions so as to effect contact between members 31 and 33 or between members 32 and 34, these contacts being included in the motor circuit as will later appear.

A rotary switch has been also provided for operation by the motor of the corresponding press in each case for the purpose of automatically cutting out the motor upon completion of the closing or opening movement of the press, thereby automatically stopping the press. This rotary switch is enclosed in the casing 43 which is adjustably mounted upon shaft 9 by means of set screws 44. Mounted upon the inner wall of the casing 43 are insulator segments 45 and 46 which are adjustably secured in said position by means of screw bolts 47 and 48 which are capable of adjustment by virtue of slots provided for such purpose. The entire casing enclosing the switch may also be adjusted about axis 9 and set in such adjusted position by means of a suitable bolt, screw or the like extending through opening 51 in ear 52 and engaging a fixed part of the frame. Suitably secured upon the inner face of insulator segments 45 and 46 are contact segments 53 and 54 which are adapted for engagement by contact shoe 55 pivotally mounted upon bracket 56 which is secured to contact strip or strips 57 extending along insulator bushing 58 and engaging at their other end or ends with contact ring 59. Contact shoe 60 is pivotally mounted upon bracket 61 which is suitably secured upon one of the insulator segments, this contact shoe engaging contact ring 59. Binding post 62 is pro-

vided for contact shoe 60 while binding posts 53ª and 54ª are provided for the contact segments. It will be observed that one end portion of each of the contact segments is given an increased curvature for the purpose of insuring effective snap engagement of the shoe with the next segment, as contact shoe 55 is rotated. The wires, which are connected to the several binding posts just now referred to, are also connected as part of the motor circuit, as will later appear from the diagrams.

An interlocking connection is provided between the press head and the guard by means of latch or lock member 63 pivoted upon bracket 64 carried by the head, this latch member being provided with a shoulder portion at its upper end for engagement with pin 65 mounted in the upper part of the guard as indicated in detail in Fig. 4. Spring 66 surrounds pin 67, one end of which is pivoted to latch member 63 while the other end portion thereof extends through the upstanding arm of bracket 64, the tendency of this spring being to normally force the latch member into engagement with pin 65 so as to lock the guard and press head together. Latch 63 may, however, be released by the operator when it is desired to lower the guard preparatory to closing the press. This is accomplished by means of release member 68 extending from the handle which is pivoted at 69 upon the outer wall of the guard, this release member being provided with depending finger 70 which is normally actuated by spring 71 so as to withdraw the release member from engagement with latch 63. The main arm of the release member extends inwardly through an opening provided in the wall of the guard and is formed with shoulder portion 72 for engagement with the marginal portion of the opening so as to limit the outward movement of the release member through this opening. This particular form of interlock is known as the mechanical interlock.

An electrical form of interlocking device is also provided as a modification for the mechanical interlocking connection just described and is illustrated in Figs. 16 and 17. An electromagnet 73 mounted upon and carried by lever arm 4 has the upper end of its core 74 pivoted to rocker arm 75 which in turn is pivotally mounted upon axis 21, the other end of rocker arm 75 being provided with a pin 76 adapted for interlocking engagement with one arm 20 of the bell crank lever pivoted upon this same axis 21. Thus, upon energization of solenoid 73, core 74 will be drawn inwardly and downwardly so as to rock arm 75 upon axis 21 and thus effect the interlocking engagement of pin 76 with lever arm 20. Thus, the guard and press head are effectively interlocked for simultaneous upward movement. Solenoid 73 is included in the motor circuit as will be seen upon reference to Fig. 23, these parts being so constructed and arranged that solenoid 73 is energized only during opening movement of the corresponding press head, and the guard is free for independent lowering movement when the press head is open. This will be more clearly understood upon reference to the diagram in Fig. 23.

Let it be assumed that in Fig. 23 press No. 1, that is, the press on the left, occupies open position while the other press is in closed position. Upon lowering the guard of press No. 1, which guard is free for such lowering movement independent of the press head, switch blade 35 will be moved into engagement with contact 31 and the following circuit will be completed so as to effect the closing of press No. 1 and the automatic opening of press No. 2: from the positive side of the main line through wire 91, closed switch 82, contact shoe 55, contact segment 54, wire 83, solenoid 73, wire 93, contact point 31, switch blade 35, wire 84 double-pole switch 88, wire 94 and motor 6ª to the negative side of the main line. This circuit includes also wire 95, motor 6 and wire 85 to the negative side of the main line. Thus, solenoid 73, which corresponds to press No. 2, is energized during the opening of press No. 2 so as to effect interlocking engagement between the press head and guard of press No. 2; whereas, solenoid 73ª, which corresponds to press No. 1, is not energized during this operation but, as will be seen from the diagram, will be energized only when the switches are set for the opening movement of press No. 1. Switches are provided for the purpose of cutting out the electromagnetic control of the interlocking arrangement when it is desired to employ some other form of interlock or for any other reason.

A still further modified form of interlock is illustrated in Fig. 15 which shows a tandem arrangement of presses each provided with a guard positively connected by means of cable 77 extending about idlers 78 suspended from fixed support 79, and the ends of which cable are connected to the guards at points 80 and 81, respectively. Thus upon lowering the guard of one of the presses to guarding position, the guard of the other press will be raised to inactive position above the press.

The operation of the tandem form of device as above referred to will be clearly understood upon reference to Figs. 18 to 21 inclusive in which the mechanical interlock between the guard and the press head is used. Switch 82ª is open and double-pole switch 88 is closed. Fig. 18 shows press No. 1, that is, the one to the left, in open position, while press No. 2, to the right, is in closed posi-

tion. The operator, by releasing the interlock between the guard and head of press No. 1, may lower the guard by means of the handle. Such movement will, through the connections including link 29, close the following circuit through contact blade 35 and contact 31: from the positive side of the main line through closed switch 82, contact shoe 55, contact segment 54, wire 83, contact point 31, switch blade 35, wire 84, motor 6 and out through wire 85 to the negative side of the main line. The circuit includes also wire 86, and motor 6^a out to the negative side of the main line. Thus, the circuit is closed through commutator 43 and the two motors for operation of the two presses. The head of press No. 1 will be brought to closed position through the toggle lever and other operating connections above described, while press No. 2 will be opened, the press head and guard of press No. 2 being interlocked and hence being moved together. Upon the opening of the guard of press No. 2, the corresponding switch plate 35^a is thrown to the position indicated in Fig. 20. During such operation contact shoe 55 travels over segment 54 and finally engages contact segment 53 which is not in circuit. Thus, operation of motors 6 and 6^a is stopped at this point with press No. 1 in fully closed position and press No. 2 in open position. The position of switch blade 35 during this operation is illustrated in Fig. 19.

Then when the pressing operation of press No. 1 has been completed and the operator has placed another garment on press No. 2, press No. 1 may be opened and press No. 2 automatically closed by proper manipulation of the switches. In order to effect this operation, the operator will lower the guard of press No. 2 so as to move the switch blade 35^a from the position indicated in Fig. 20 to assume the position indicated in Fig. 21. The following circuit is then established:— from the positive side of the main line through switch 82, contact shoe 55, contact segment 53, wire 87, double-pole switch 88, wire 89, contact point 31^a, switch blade 35^a, wire 90, and motor 6^a to the negative side of the main line. The circuit includes also wire 86, through the other side of the double-pole switch 88, and motor 6 to the negative side of the main line. Thus, the motors are again operated to open press No. 1, the press head and its guard being raised in interlocked condition, and to close press No. 2. This operation will continue until the opening and closing of these presses have been effected, at which time the motors will automatically stop by virtue of the fact that at this time the contact shoe will have passed from contact segment 53 to contact segment 54. The system is then in the same condition as illustrated in Fig. 18, having passed through a complete cycle of operations.

Should it be desired by the operator at any time to operate each of the presses independently of the other, this may be accomplished by opening the double-pole switch and closing the switch 82^a. The guard of each press will then be raised and lowered by the operator.

Fig. 22 illustrates an arrangement of three presses, two of which will be operated at the same time for closing one and automatically opening the other, together with means also for automatically substituting the third press for one of the other two upon completion of the tandem operation. This means for automatically substituting a third press for one of the other presses comprises solenoid 96 which is included in the motor circuit, and which is suitably mounted upon the frame of the machine structure. Core 97 of the solenoid is connected to link 98, the upper end of which is pivotally connected at point 99 with lever 100, one end of which is loose upon shaft 101 suitably mounted in brackets on the frame of the machine structure. Suitably mounted in the lever 100 is pin 102 forced by spring 103 into the path of shoulder portions 104 spaced 120° upon disc 105 which in turn is fixed upon shaft 101. Shaft 101 has fixed thereon drum 106 provided with a series of contact segments 107, 108 and 109, which are connected in circuit with the commutator switches corresponding to the three presses respectively, as shown in Fig. 22. Drum 106 carries also contact segments 110, 111 and 112 which are included in circuit with the motors of the three presses respectively, as shown in Fig. 22. These circuits are effected in proper timed relation by means of suitable contact brushes which are mounted upon the frame of the machine structure and engage the several contact segments upon the drum. As a means of adjusting the contact drum 106 to such position as to cut out all of the several circuits, we have provided collar 118 fixed upon shaft 101, which has recesses 114 provided in the outer face thereof to receive pin 115 carried by knob 116 which is forced outwardly by means of spring 117. Carried by knob 116 there is also provided radially projecting finger 119 adapted for engagement with one of stop pins 120 fixed upon the frame of the machine structure. Thus upon forcing inwardly knob 116 so as to engage pin 115 in recess 114, drum 106 may be rotated until pin 119 engages one of stops 120 so as to cut out all of the several contact segments from the circuits. Upon closing switches 1^a, 2^a, or 3^a, the commutator switches may be placed in circuit for individual operation of the presses.

According to Fig. 22, press No. 1 is in open position and is about to be closed, while press No. 2 is in closed position and is about to be automatically opened upon closing of

press No. 1. In this case, the operator lowers the guard of press No. 1 so as to bring switch blade 35 into engagement with contact 31, thereby establishing the following circuit: from the positive side of the main line through solenoid 96, contact segment 109, wire 121, contact shoe 55, contact segment 54, wire 83, switch blade 35, wire 84, and motor 6 out to the negative side of the main line. This circuit includes also wire 122, contact segment 112, wire 123, and motor 6^a out to the negative side of the main line. Thus, the motors corresponding to presses Nos. 1 and 2 are set into operation and will close press No. 1 and open press No. 2 in the same manner as above described in connection with the tandem arrangement. Upon completion of the tandem operation of presses 1 and 2, the circuit will be broken by contact shoe 55 passing onto the dead contact segment 53, with the result that the solenoid becomes de-energized and core 97 is forced upwardly by spring 97^a.

Should the operator desire to immediately raise the head of press No. 1 after the same has been closed, this can be done by closing switch 1^a. The solenoid having been de-energized, contact segments 109 and 112 are no longer in circuit; but by raising the guard a circuit will be established from the positive side of the main line, through closed switch 1^a, contact shoe 55, contact segment 53, wire 53^a, contact 32, blade 35, wire 84 and motor 6 to the negative side of the main line. Then, in order to again close press No. 1, the guard is lowered by the operator, thereby establishing the following circuit: from the positive side of the main line, through closed switch 1^a, contact shoe 55, contact segment 54, wire 83, contact 31, blade 35, wire 84 and motor 6 to the negative side of the main line. Either of the other presses may be operated in the same way by closing switches 2^a and 3^a, respectively.

The upward movement of core 97, upon de-energization of solenoid 96 effects the engagement of stud 102 with one of shoulders 104 and in this way will rotate contact drum 106 through a predetermined extent so as to substitute other contact segments in the circuit. Contact segment 109 will be cut out of circuit and contact segment 107 corresponding to the commutator switch of the third press will be substituted instead, and likewise contact segment 112 will be cut out of circuit and contact segment 110 will be substituted in its stead, preparatory to energization of the motor corresponding to the third press. Then, with press No. 2 in open position and press No. 3 in closed position, the operator, after inserting garment in press No. 2, will lower the guard of press No. 2 so as to close the circuit through switch blade 35 and contact point 31^a. The circuit will thereby be closed from the positive side of the main line through the solenoid and the proper contact segment, through the commutator switch, through the switch blade of press No. 2 and at the same time through the other contact segment corresponding to the motor of press No. 2, as well as through the motor corresponding to press No. 3. Press No. 2 will thereby be closed and press No. 3 at the same time automatically opened. During this operation, a still further substitution of contact segments and motors will be effected in the circuit so as to include the commutator switches of presses Nos. 3 and 1 as well as the motors of these two presses for like operation as already described. Thus it will be seen that two of the three presses can be operated in tandem and upon completion of such operation, the third press can be automatically substituted so as to operate a progressive and varying combination of two presses.

What we claim is:—

1. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, electric motor means for operating said presses, and electric control means whereby the closing of one press is accompanied by the automatic opening of another press.

2. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, means for operating the same, movable guard means for said presses, means whereby the movement of said guard means for one of said presses is accompanied by automatic reverse movement of the guard means for another of said presses, and means for harmonizing the operation of said guards and the relative movement of said pressing members.

3. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, means for operating the same, movable guard means for said presses, means whereby the said guard means can be operated so as to simultaneously effect guarding of one press and clearing of another press, and means for harmonizing the operation of said guards and the relative movement of said pressing members.

4. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, means for operating the same, movable guards for said presses, means whereby the guard of one press can be moved to closed position and the guard of another press automatically moved to open position, and means for harmonizing the operation of said guards and the relative movement of said pressing members.

5. In a garment press, the combination of relatively movable pressing members, a guard adapted to be moved independently of said pressing members and being also

adapted to be releasably interlocked with one of said pressing members so as to move therewith, and a single releasable means for interlocking said guard with one of said pressing members, whereby the guard can be closed alone prior to the closing of the press, and, when interlocked with one of the pressing members, move therewith to open position.

6. In a garment press, the combination of relatively movable pressing members, a guard adapted to be moved independently of said pressing members and being also adapted to be releasably interlocked with one of said pressing members so as to move therewith, and an electrically controlled releasable connection for interlocking said guard with one of said pressing members, whereby the guard can be closed alone prior to the closing of the press, and, when interlocked with one of the pressing members, move therewith to open position.

7. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, means for operating said presses, electric control means whereby the closing of one press is accompanied by the automatic opening of another press, and means whereby said presses may be disassociated for independent operation.

8. In combination, three or more garment presses each embodying relatively movable pressing members, means for operating said presses, means whereby the closing of one press is accompanied by the automatic opening of another press, and means for operatively connecting any two of said presses for such operation.

9. In combination, three or more garment presses each embodying relatively movable pressing members, means for operating said presses, means whereby the closing of one press is accompanied by the automatic opening of another press, and means for automatically selecting varying pairs of said presses for such operation.

10. In combination, three or more garment presses each embodying relatively movable pressing members, means for operating said presses, means whereby the closing of one press is accompanied by the automatic opening of another press, and electric means for automatically selecting varying pairs of said presses for such operation.

11. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, means for operating said presses, means whereby the closing of one press is accompanied by the automatic opening of another press, and electrically controlled means whereby the press that is brought to closed position can be opened independently of the other press.

12. In combination, three or more garment presses each embodying relatively movable pressing members, means for operating said presses, means whereby the closing of one press is accompanied by the automatic opening of another press, and means for automatically substituting another of the presses for one of the pair of presses which have been operated in the aforesaid manner.

13. In a garment press, the combination of relatively movable pressing members, a guard adapted to be moved into and out of guarding position with respect to the press, electric motor means for opening and closing the press. and electrically actuated means for releasably interlocking said guard and one of the pressing members, said last named means being included in the same electric circuit with said motor means, whereby the interlocking engagement is effected only during energization of the motor circuit.

14. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, motor means for operating said presses, operative connections between said motor means and the presses, and electric means whereby the operative connections of said presses may be actuated for predetermined closing and opening movements respectively, and automatically set for reverse operations of the presses.

15. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, and each being provided with a movable guard, means for operating said presses, means actuated by movement of said guards for controlling said operating means, and means for automatically stopping both presses upon completion of opening or closing movement.

16. In combination, a plurality of pressing machines, each embodying relatively movable pressing members, and each being provided with a movable guard, electric motor means for operating said presses, electric switches in said motor circuit actuated by movement of said guards for controlling said means, and an automatically operated electric switch included in said motor circuit for determining the opening and closing movements of the presses.

In testimony whereof we hereby affix our signatures.

EMIL J. CARROLL.
WILLIAM P. BEATTIE.