

Dec. 12, 1939.

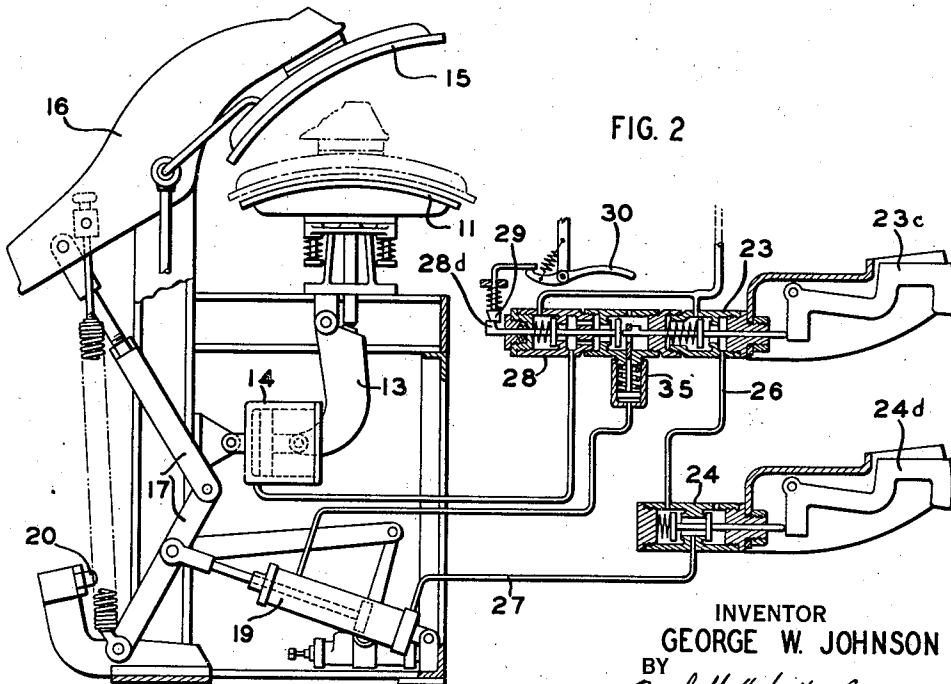
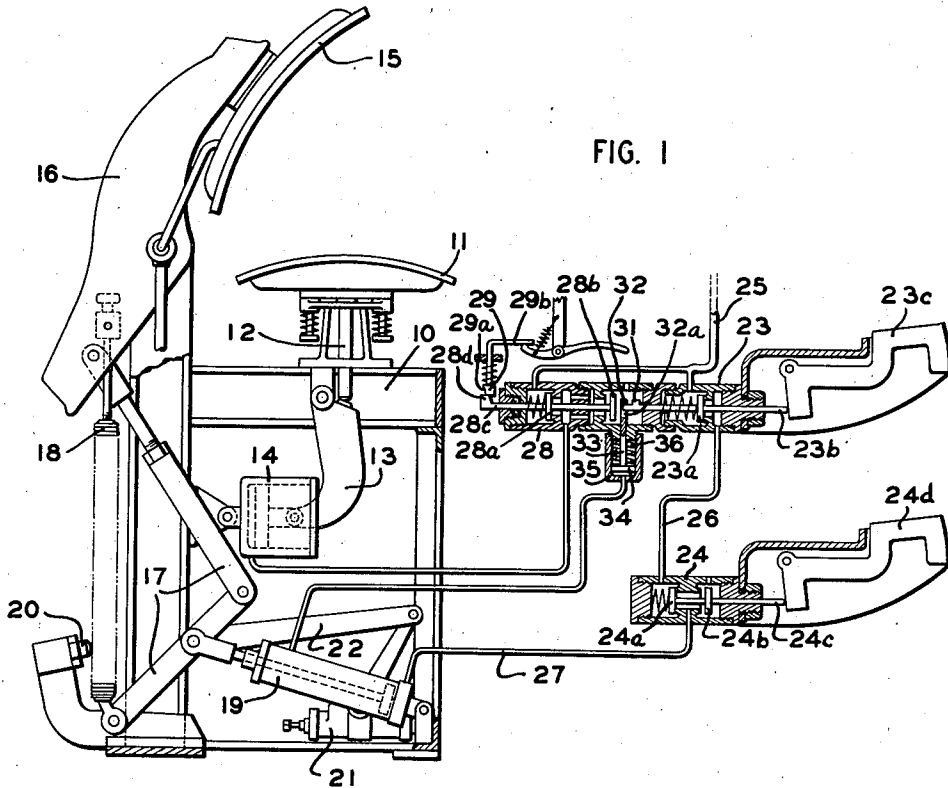
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2,183,194

CONTROL FOR PRESSING MACHINES

Filed May 17, 1937

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# UNITED STATES PATENT OFFICE

2,183,194

## CONTROL FOR PRESSING MACHINES

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Application May 17, 1937, Serial No. 143,085

5 Claims. (Cl. 38—25)

This invention relates to improvements in control mechanism for pressing machines.

An object of the present invention is to provide an improved safe two-hand control mechanism for a pressing machine arranged so that an operator may depress two manuals coincidentally to cause movement of the pressing members into a safe closed position under little or no pressure and then by an additional movement in the same direction without shifting the position of her hands upon the manuals bring about final pressure. This control mechanism places the position of the pressing members at all times within the control of the operator so that at any time during the closing movement the press may be reopened to adjust the position of the work or may be continued on through to final pressure, all at the option of the operator and without the loss of a moment's time. My invention also provides a positive control of a manual by the position of the press parts so that final pressure cannot be produced until the press has been properly operated to bring the pressing members into safe closed position and in suitable position for producing the final pressure operation.

In the drawings, Fig. 1 is an end elevation of a pressing machine equipped with my improved control mechanism which is shown diagrammatically for the sake of clearness, in this figure the press is in open position; Fig. 2 is a similar view showing the movement of the control mechanism necessary to bring the pressing members to safe closed position; Fig. 3 is a similar view showing the movement of the control members necessary to produce final pressure; while Fig. 4 is a similar view showing the press fully closed with the operator operated manuals released.

While my invention is applicable to many types of presses, I have shown the same as applied to a machine of the well known scissors type which is used in the pressing of garments, laundered articles and other fabrics. Such presses today commonly use control mechanism including a pair of manuals spaced apart so as to require the position of a hand of the operator on each of them when the press is being closed to prevent a hand being caught between the approaching pressing members. Such a control mechanism as commonly constructed has one or more of the following disadvantages. Either the pressing members go through to a final pressing position without further volition on the part of the operator other than the act of depressing the manuals, or if the movement of the pressing members into final pressing engagement is under the control of the

operator, it requires some additional act on her part which is time consuming and sometimes the control is so arranged that the operator is not definitely aware when the pressing members have reached safe closed position and are ready to enter the final phase of pressure engagement. By my improved control mechanism I overcome all of these disadvantages giving the operator positive control of the position of the pressing members at all times and making her definitely aware of the transition from safe closed position to the final phase of pressure engagement, all of this without requiring movement of additional manuals or the exercise of additional thought or effort on her part.

I have illustrated my invention as applied to a laundry press of the type disclosed and claimed in the copending application of John P. Singiser, filed April 25, 1935, Ser. No. 18,146, to which further reference may be made if necessary to understand the operation of the press. Briefly, a frame 10 supports a pressing bed 11 mounted for vertical movement in the frame and provided with a downwardly extending stem 12 which engages a lever 13 which is operable by motor 14. A pressing head 15 is carried by the head lever 16, the rear end of which is connected by toggles 17 normally held in the broken line position of Fig. 1 by spring 18 but movable by motor 19 into and beyond straightened position as shown in Figs. 3 and 4 to hold the pressing head in the position there shown and indicated in broken lines in Fig. 2. In this position a spring pressed plunger 20 is effective to initially kick the toggle over center in opening direction. It will be obvious that with the toggles in the position of Figs. 3 and 4, a pressure strut is formed which resists upward pressure of the bed 11 against the head 15. Snubber mechanism 21 is connected by linkage 22 with the toggle so as to snub opening and closing movement of the press.

The control mechanism for supplying pressure fluid to motor 19 comprises a normally closed inlet valve 23a in valve casing 23 which is operable through its valve stem 23b by manual 23c. Valve casing 24 houses a normally closed inlet valve 24a and a normally open outlet valve 24b, both on a common stem 24c and operable by manual 24d. Upon depression of manuals 23c and 24d pressure fluid flows from conduit 25 through casing 23, conduit 26, casing 24 and conduit 27 to motor 19.

The control valves for motor 14 are housed in casing 28 which may be rigid or integral with casing 23 as shown. These valves comprise a

normally closed inlet valve 28a and a normally open outlet valve 28b on a common stem 28c. On the rear end of this valve stem is a shoulder 28d which, when the valves are moved into actuated position, is engageable by a spring pressed latch 29. The latch has an inclined face 29a which coacts with a complementary face on the shoulder 28d so as to yieldingly urge the valves in casing 28 toward actuated position while they are so held by the latch. The latch has an arm 29b which is engageable by a release lever 30 to release the latch and permit the valves in casing 28 to return to their normal position under the bias of their actuating spring.

The valves in casing 28 are operable by an additional movement of manual 23c in the same direction and beyond that necessary for the supply of fluid to motor 19. Such additional movement, however, is normally prevented by a shoulder 31 on valve stem 23b which engages a block 32 which is rigid with or operable by the piston rod 33 of a piston 34 which form parts of a servomotor 35. A spring 36 normally urges the piston 34 downwardly holding the parts in the position of Figs. 1, 2 and 4. The block 32, however, has an opening 32a through which the shoulder portion 31 of valve stem 23b is adapted to pass when piston 34 and its associated parts are raised as shown in Fig. 3. This occurs when the piston of motor 19 has passed a port 19a in the cylinder of the motor, thus supplying fluid through conduit 37 to servomotor 35. At this time further movement of manual 23c downwardly is possible as shown in Fig. 3, causing valve stem 23b to engage the valves in casing 28 and move them to their operated position where they are held by the latch.

As actually installed upon a pressing machine, the manuals 23c and 24d are spaced apart at the front of the machine sufficiently to require a hand of the operator on each of them to produce a pressing operation.

With the parts in the position of Fig. 1, the operator arranges the work upon the bed 11 and depresses manuals 23c and 24d to the position of Fig. 2. This admits fluid to motor 19 moving toggle 17 toward straightened position and when completed placing the pressing head in the broken line position of Fig. 2 which is the safe closed position where the operator cannot place a hand between the pressing members. Until this position is reached it is impossible to produce final pressure engagement of the pressing members and the operator is aware of this by the engagement of shoulder 31 with block 32. During this period of preliminary closure the operator may release either of the manuals to stop and reopen the pressing head and to permit her to give an additional adjustment to the work on bed 11 if desired. In many machines the pressing head would come down so rapidly to pressing engagement with the coating bed that a garment in a wrinkled condition might be subjected to a preliminary pressure necessitating the removal of the garment and a dampening thereof before it could be properly processed. With my improved control, however, this cannot occur because until the pressing head reaches the broken line position of Fig. 2 no final pressure engagement of the pressing members is possible. When, however, the press is safe closed, without the loss of a moment and without any different movement of her hand but by simply continuing the pressure in the same direction on manual 23c, fluid is supplied to motor

14 raising the bed into engagement with the head and closing the press. The valves in casing 28 will be locked in this position by the latch 29 and the toggle 17 will be held in its over center position of Figs. 3 and 4 by the pressure of the bed upwardly against the head. The manuals may then be released as shown in Fig. 4, evacuating motor 19. The press remains closed until the operator actuates the release member 30, returning latch 29 to its upper position and permitting the valves in casing 28 to return to normal position evacuating motor 14, at which time plunger 20 and spring 18 will open the press.

During the preliminary closing movement, if manual 24d is released, valve 24a closes, valve 24b opens and motor 19 is evacuated permitting the springs to reopen the head. If manual 23c is released, valve 23a closes and the pressure fluid in motor 19 leaks out a small vent 19b permitting the press to open.

What I claim is:

1. In a pressing machine, a pair of coating pressing members, power means for causing relative approach movement of said members in two steps, a first step into a preliminary closed position and a second step into final closed position, two control members requiring coincidental actuation for controlling first step operation of said power means and spaced apart to require two hands of an operator for coincidental actuation thereof, one of said control members having an additional movement in the same direction beyond that necessary for causing first step operation, a control member for causing second step operation and operable by said additional movement, means normally disabling said additional movement against second-step control member operation, and means for enabling said additional movement upon the press parts reaching preliminary closed position.

2. In a pressing machine, the combination of claim 1 including means for retaining said second step control member in operated position, and means for causing a return of the said member to unoperated position to release the press.

3. In a pressing machine, a pair of coating pressing members each movable toward the other, a first motor for moving one of said members to safe closed position adjacent the other, a second motor for moving said other member into pressing engagement with said one member, two control members requiring coincidental actuation for causing operation of said first motor, said control members being spaced apart to require two hands of an operator for coincidental actuation thereof, one of said control members having an additional movement in the same direction beyond that necessary for causing operation of said first motor, a control member for causing operation of said second motor and operable by said additional movement, means normally blocking said additional movement, and means for unblocking said first motor control member to permit said additional movement when the press parts reach safe closed position.

4. In a pressing machine, the combination of claim 3 including means for retaining said second motor control member in operated position, and means for causing return of the said control member to unoperated position to release the press.

5. In a pressing machine, a pair of coating pressing members, mechanism for moving one of

5 said members into safe closed position adjacent  
the other, said mechanism being so constructed  
and arranged that said one member when in said  
position resists pressure against it, a motor for  
10 moving said mechanism to place said one mem-  
ber in said position, fluid actuated means for  
moving the pressing surface of said other mem-  
ber against said one member in said adjacent  
position, two control members requiring coinci-  
dental actuation for causing operation of said  
motor, said control members being spaced apart  
to require two hands of an operator for coinci-  
dental actuation thereof, at least one of said

control members having an additional movement  
in the same direction beyond that necessary for  
causing operation of said motor, a valve for  
causing operation of said fluid actuated means  
and operable by said additional movement, means  
5 normally disabling said additional movement  
against operation of said valve, means for en-  
abling valve operation by said additional move-  
ment when the press parts reach safe closed  
position, and releasable means for holding said  
10 valve in operated position.

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