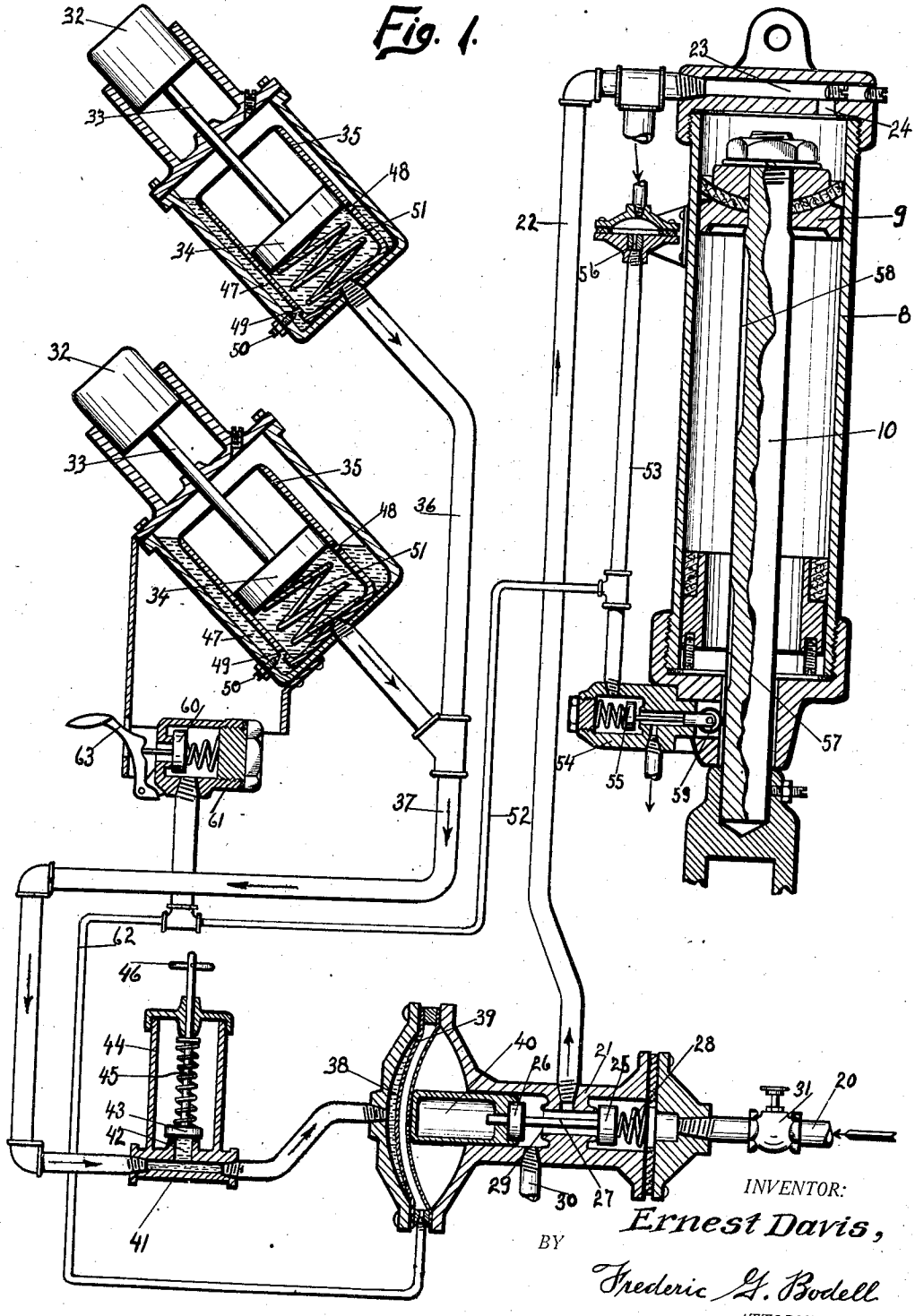
June 23, 1936. E. DAVIS 2,045,445

ACTUATING MECHANISM FOR PRESSING MACHINES

Original Filed June 18, 1927 2 Sheets-Sheet 1

Fig. 1.



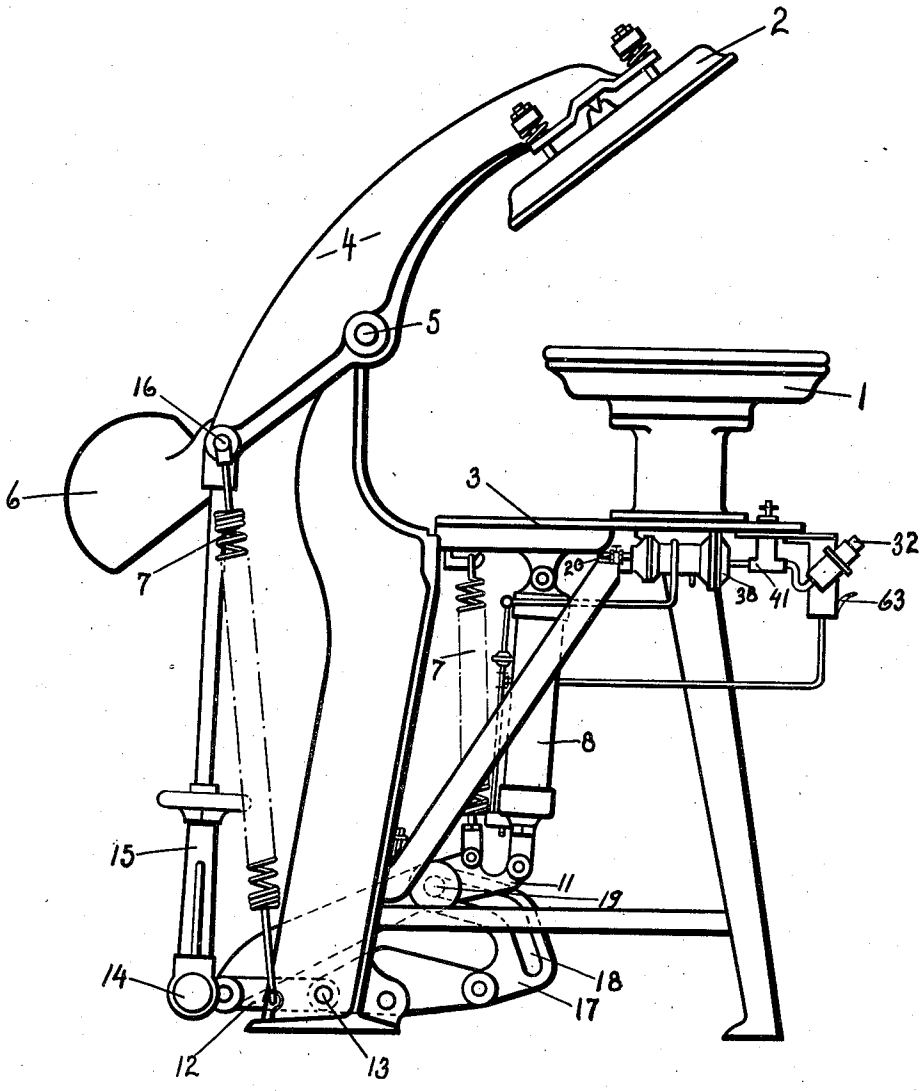
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June 23, 1936. E. DAVIS 2,045,445

ACTUATING MECHANISM FOR PRESSING MACHINES

Original Filed June 18, 1927 2 Sheets-Sheet 2

Fig. 2.



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Patented June 23, 1936

2,045,445

UNITED STATES PATENT OFFICE

2,045,445

ACTUATING MECHANISM FOR PRESSING MACHINES

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Refile for abandoned application Serial No. 199,858, June 18, 1927. This application December 26, 1928, Serial No. 328,492

31 Claims. (Cl. 121—38)

This invention relates to pressing machines such as garment and laundry or ironing presses in which a pressing element or jaw as a head moves into and out of pressing position and remains in pressing position any period of time dependent upon the will of the operator. This application is a refile of my application Ser. No. 199,858 filed June 18, 1927.

An object of the invention is to devise a particularly simple and efficient two-hand control mechanism by which the operator must use both hands to effect the closing of the press, and must keep both hands employed while the press is closing. A further object is a garment press having a two hand control mechanism of novel construction which renders the press inoperative in the event one or both of the manuals or handles are tied in operative position or become inadvertently stuck in operative position.

Another object is to provide a garment or ironing press with a novel timing mechanism which may be used to control the opening of the press, in which the timing mechanism is applied to the control means for opening and closing the press.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a sectional diagrammatic view of this actuating mechanism in open press position and the control means for controlling the motor means.

Figure 2 is a side elevation, partly broken away, of a pressing machine embodying this invention.

The garment or ironing press of the invention includes pressing elements or jaws, one of which is movable toward and from the other, an actuator or actuating mechanism, a two-hand means for controlling the flow, the application, or the transmission of power to the actuator, and means for periodically resetting the two-hand control while the press is closing, or while the actuator is closing the press, and thereby requiring the periodical operation of the two-hand control to close the press.

Although, I have shown this invention as applied to a garment and laundry platen press, it will be understood that it may be applied to other types of presses.

The garment or ironing press here illustrated comprises cooperating press jaws such as a buck 1 and a head 2 movable toward and from the buck, the buck being mounted on a suitable frame 3 and the head being carried by a yoke or lever 4 pivoted at 5 to the frame, which lever 4 is part of and connected with the rest of the actuating mechanism for operating the movable jaw, control means for the actuating mechanism, and control operating mechanism per se forms part of the subject matter of this invention.

In the press illustrated, the movable jaw or head is closed by the motor-driven actuating mechanism against the resistance of a counterweight 6 and countersprings 7 acting on the lever 4 to open the press.

In the illustrated embodiment of my invention, the power is supplied by a fluid motor or motor means here shown as a cylinder 8 and a reciprocating single acting piston 9 movable in the cylinder, a piston rod 10 being connected to one end of a link 11. The other end of the link 11 is connected to a link 12 pivoted at 13 to the frame and at 14 to the lower end of a link 15. The link 15 is pivoted at 16 to the rear arm of the yoke lever 4. The link 11 is guided in its movement to effect the straightening of the toggle formed by the links 12 and 15 by a fixed cam 17 having a cam slot 18 in which works a follower 19 which is mounted on the link 11. The cylinder of the motor 8 is pivoted at its upper end, to the frame 3, so that it may oscillate during the movement of the link 11. The construction of the actuating mechanism thus far described forms no part per se of this invention.

The two-hand control mechanism preferably includes hydraulic and pressure operated members so as to eliminate numerous mechanical parts such as equalizing levers, ratchets and pawls, etc. The motive fluid for the piston which is a reciprocating actuator is preferably compressed air and the feed line for the compressed air includes a pipe 20 connected to any suitable source of supply as a tank and compressor. The pipe 20 connects with a valve casing 21 for controlling the flow of motive fluid through a pipe 22 to a passage 23 in the head of the cylinder, this passage 23 opening through a port 24 into the piston chamber. A control means includes a valve casing 21 within which is a combined intake and exhaust valve unit, here shown as a reciprocating valve unit made up of an intake valve 25 and an exhaust valve 26 which are connected, to operate as a unit, by a stem 27. The intake valve 25 is normally held against its seat by the air pressure in the feed line 20 and by a spring 28 and the exhaust valve 26 is also

held off its seat 29 by the spring 28 acting through the stem 27. An exhaust passage 30 leads from the valve casing 21 between the valves 25 and 26 when the valves are in normal or starting position, and also the pipe 22 leads from the valve casing 21 from between the seats for the valves. A cut-off valve 31 which is always open when the machine is in use, and which may be closed when the machine is not in use, is located in the feed line 20.

The manual means for initially operating the combined intake and exhaust valve unit to open the intake and close the exhaust and thus permit air to flow to the cylinder 8 comprises, in this embodiment of my invention, two manually operated members or a pair of manually movable means which when operated transfer their combined movement through a suitable motion transmitting connection or hydraulic fluid as oil to the valve unit. These members or movable means, as here shown, are push buttons 32 connected by stems 33 to plungers 34 movable in cylinders 35. The cylinders are connected together by a pipe 36 and this pipe is connected by a pipe 37 to a pressure responsive means including a chamber 38 having a movable or pressure operated member as a diaphragm 39 therein which acts on a piston 40 movable with the intake and exhaust valves 25 and 26. The movable diaphragm 39 and the plunger or piston 40 form a second movable means. The diaphragm 39 is preferably a double pressure device having two spaced apart members for a purpose to be hereinafter described, and the two parts not only act as a unit and move in one direction, but also at certain periods oppositely to each other or in opposite directions when a fluid under pressure is permitted to enter between the two parts of the diaphragm.

A relief or safety means such as a valve is connected in the pipe 37, and consists of a casing 41 having an outlet 42 which is normally closed by a spring pressed valve 43 located in an overflow chamber 44. The valve 42 has its stem 45 extending out of the chamber and provided with a handle, button or manual means 46 at its upper end. Fluid such as oil fills, or partly fills, the cylinders 35, pipes 36 and 37, and the oil pressure side of the pressure chamber 38. Also, the cylinders 35 are surrounded by a reservoir, overflow or reserve chambers 47 and the cylinders have ports 48 therein through which the oil can flow into the cylinders from the overflow chambers 47 when the plungers or pluriger members 34 are in their normal or retracted positions, these ports 48 being located in position to be cut off by a slight initial movement of the plungers.

Also, the cylinders are provided with leak means or relief ports at 49 which are normally closed or partly closed by needle valves as 50 which have a fixed adjustment or an adjustment which is initially fixed at the factory. These valves 50 are for the purpose of rendering the system inoperative by letting the oil in the cylinder 35 escape or leak into the reserve chamber or reservoir 47 if the button 32 is intentionally fastened down or inadvertently sticks in depressed position so that the fluid connection between the pair of manually movable means 32 and the second movable means 40 gradually collapses. The collapsing of the fluid connection proceeds however slower than the operation of the manual means and in the complete combination disclosed herein proceeds slower than the final action of the holding diaphragm or means which holds the control means or valves in operated position so that the buttons 32 can be released. Preferably, returning springs 51 act on the plungers 34.

In the operation of the machine as thus far described, the depression of but one button 32 will cause the oil to pass into the cylinder associated with the other button 32 and out through the port 48 into the reserve chamber 47 and will not transfer any or sufficient motion to the pressure chamber 38 to cause the diaphragm 39 to actuate the piston 40 and the intake and exhaust valves 25 and 26. However, when both buttons are depressed, the ports 48 are closed by the plungers 34 and the oil will be forced through the pipes 36 and 37, and relief valve casing 41 to the pressure side of the diaphragm 39 causing the diaphragm or piston 40 to be actuated to move the exhaust valve 26 against its seat and the intake valve 25 off its seat so that air will flow to the cylinder 8 to actuate the piston 9.

Means are provided for periodically restoring the buttons to normal position during the closing movement of the press so that the operator can not tie down one button and thus operate the machine with the other button alone, leaving thereby one hand free. This means also prevents operation of the machine if both buttons become stuck in operated or an intermediate position. These means include a conduit connection between the feed line 20 or 22 and the diaphragm chamber 38 so that the air passes between the double pressure members or double diaphragm 39 and acts to force the diaphragms apart. The intake valve 25 and exhaust valve 26 are held in their operated positions by the diaphragm which contacts with the piston 40 pressing against the piston under the influence of the air pressure between the diaphragms. This air pressure applied between the diaphragms 39 also presses the oil out of the diaphragm chamber 38 back through the pipes 37 and 36 to the cylinders 35 thus pressing the buttons 32 outwardly. If the buttons 32 can not be pressed outwardly, the oil may be forced out of the system at the relief valve 43 or through the relief openings 49 in the cylinders 35. The oil may in fact remain within the pressure chamber 38 when air pressure is applied between the diaphragms but in such case the press would remain closed until an outlet was provided for the oil so that the diaphragm could return to its normal position in which position the exhaust valve 26 is open and the intake valve 25 is closed.

If one button 32 is stuck in operated or an intermediate position, the other button 32 returns to its up or normal position under the influence of the air pressure between the double diaphragm 39 and the remainder of the oil in the pressure chamber 38 passes into the reservoir or reserve chamber 47 through the port 48 which has been uncovered by the returned button 32.

In the illustrated embodiment of my invention, the pressure chamber 38 is connected by a pipe 52 to a branch 53 of the intake pipe 22 and the pipe 53 is connected to a valve casing 54 having a normally open and spring pressed exhaust valve 55 therein. The branch 53 communicates with the pipe 22 through a reduced passage 56 so that the building up of air pressure in the pipe 53 is delayed. The valve 55 is controlled so that it will be periodically closed by its spring upon movement of the actuator or piston rod 10 into certain positions. The piston rod is

here illustrated as provided with cam depressions 57 and 58 at intervals to permit the exhaust valve 55 to close.

After the buttons 32 have been depressed and hence, the diaphragms 39 moved to the right as a unit so that the intake valve 25 is open and the exhaust valve 26 is closed, air passes through the pipe 22 to the cylinder 8 and some of the air passes through the reducing passage 56 and pipe 53 out through the exhaust valve casing 54. While the press is being closed full power is not required, and the loss of air through the exhaust valve casing 54 is not sufficient to prevent the closing of the press. When the piston 9 has traveled far enough on its power stroke to permit the roller 59, at the end of the stem of the exhaust valve 55, to enter the first depression 57 so that the valve 55 is closed, the pressure passes through the pipe 52 and between the diaphragms 39 and forces the left hand diaphragm to the left which forces the oil out of the diaphragm chamber 38 back against the plungers 34 so as to return the buttons 32 to their initial position.

The right hand diaphragm 39 is held in its deflected position to the right, opposite to the position shown in the drawings, under the air pressure and holds the intake valve 25 open and the exhaust valve 26 closed so that the piston continues traveling downwardly and closing the press until the portion of the piston rod 10 above the depression 57 acts on the roller 59 and again opens the valve 55 so that the exhausting of air through the valve again occurs and the air exhausts from between the diaphragms. The intake valve 25 will be closed by its spring, and the exhaust valve 26 will open, unless the operator again depresses both buttons 32 to again fill the oil pressure side of the pressure chamber 38 with oil until the downwardly moving piston rod 10 brings the depression 58 under the roller 59 whereupon the valve 55 again closes so that air pressure builds up again between the diaphragms 39 to return the buttons 32 to their initial position and to hold the exhaust valve 26 closed and the intake valve 25 open. Obviously the valve 55 could be held open until the piston has nearly completed its stroke or the reducing passage 56 can be so small that sufficient air pressure between the diaphragms 39 is not built up until the press is closed in which case the operator must hold the buttons 32 depressed until the press is closed.

It is most important to have both hands of the operator occupied shortly before the press is fully closed and it is therefore desirable not to have the press fully closed from wide open position upon a single actuation of the manuals, for if the manuals should become stuck at the start of the machine, there will be ample time for the operator to get her hands between the pressing elements before the slowly operating press will fully close. By providing the cam depressions 57, 58 for periodically restoring the manuals to inoperative position, thus requiring periodic resetting of the manuals by the operator to close the press, any chance of getting her hands caught is prevented.

If the operator depresses but one button and leaves the other button free after the roller 59 passes out of the depression 57, the oil pressure side of the pressure chamber 38 will not be filled and the air will exhaust from between the diaphragms 39 through the casing 54. Without air or oil pressure upon the diaphragms 39 to hold the intake valve 25 closed and the exhaust valve 26 open, these valves will return to initial position and air will exhaust from the cylinder and the press will open under the influence of the counterweight 6, and springs 7. In case one or both buttons are stuck or tied down, or the operator holds both buttons down against the pressure of the oil tending to restore them to their initial position, then the oil will pass out of the system through the relief valve 43 or the relief ports 49 and when the valve 55 does open, the air exhausting from between the diaphragms 39 will permit the press to open, even though both buttons 32 are held depressed for the reason that there is not a sufficient amount of oil in the system to displace the diaphragm 39 in the pressure chamber 38.

Under the conditions described above it will be necessary to put enough oil back into the system by opening the valve 43 by hand to permit the oil to flow from the overflow chamber 44 into the casing 41 or by releasing the buttons 32 so they will return to initial position and oil will reenter operatively into the system or under the plungers 34 through the ports 48. When the piston 9 has traveled far enough to carry the depression 58 in line with the roller 59 of the exhaust valve 55, the head has been brought down close to the buck so that there is no possibility of the operator placing his hands between the pressing elements. In this position of the press jaws the exhaust valve 55 remains closed while final heavy pressure is applied and these conditions are maintained as long as desired by air pressure being maintained between the diaphragms 39 so that the intake valve 25 is held open and the exhaust valve 26 held closed and the press held under pressure.

If the operator depresses one button 32, the oil will take the path of least resistance and flow out through the port 48 in the other cylinder 35 so that no oil will pass into the pressure chamber 38. If the other button 32 is now depressed the oil in this cylinder 35 will be directed into the pressure chamber 38 but there is not enough oil in one cylinder 35 to act upon the diaphragm 39 sufficiently to actuate the valves 25 and 26 or to actuate them sufficiently to close the exhaust valve 26 and adequately open the intake valve 25. Both push buttons 32 must be depressed simultaneously in order to actuate the press. If the press is actuated by depressing both push buttons 32 so that the full quantity of oil has been delivered to the pressure chamber 38, and then one button 32 is tied down or becomes stuck, then upon release of the other button and its return to initial position, the oil which would ordinarily enter the cylinder 35 of the tied down button will flow out through port 48 of the released button into the reservoir 47. Depression of the released button 32 in an attempt to close the press will not supply sufficient oil to the system to actuate the diaphragms 39 as described above. The control mechanism described is, therefore, positive in that it requires the use of both hands of the operator to close the press.

To open the press, the air is exhausted from between the diaphragms 39 by means of a normally closed manually operated exhaust valve 60 located in a casing 61 which is connected by a pipe 62 to the pipe 52, this valve being held against its seat by a spring. By operating the handle 63, the valve 60 will be opened to permit the air to exhaust from between the diaphragms and hence, permit the spring of the intake valve

25 and the air pressure in the pipe 20 to close the intake valve 25 and open the exhaust valve 26 so that air will exhaust from the cylinder through the pipe 22, valve casing 21 and exhaust passage 30. The press will then open under the influence of its counterweight 6 and counterbalancing springs 7. When the air begins to exhaust from between the diaphragms 39, the back pressure from pipe 22 first acts merely upon the face of the exhaust valve 26 but when this valve 26 becomes slightly open, the air pressure is against the entire area of the end of the piston 40. This piston 40, when the exhaust valve 26 is closed, cuts off the exhaust passage 30 and when the exhaust valve starts to open, the force tending to open the valves increases because of the increased area of the end face of the piston 40. Therefore, it is merely necessary to momentarily open the valve 60 to open the press.

This invention is particularly advantageous in that both hands must be continuously occupied to operate the push buttons 32 to close the press and the press can not be closed if one button is tied or permanently held down or becomes accidentally stuck down or if one button is released before the press is closed or substantially closed.

There is disclosed herein a timing mechanism. The timing mechanism serves to control the retention of the control means 21 in operated position and in the embodiment illustrated the timing mechanism functions until the control of the press or motor means is automatically taken away from the operator by the closing of the press. It has previously been described herein that the fluid begins to leak out of the ports 49 after the manual means have been depressed. These leak ports may be adjusted, but obviously any adjustment which releases the control means to open the intake valve 25 and close the exhaust valve 26 under the influence of the spring 28 before the press closes is impractical. Obviously the adjustment may be made to hold the valves closed any desired length of time so long as the manual means 32 are held depressed. The timing mechanism in other words is adjustable for as long or as short a period as desired. In the complete combination disclosed any adjustment of the ports 49 which holds the valves 25 and 26 in operated position a minimum period until the holding means or right hand diaphragm 39 is operated is suitable or the ports may be adjusted for a considerably longer period. The invention herein therefore discloses a timing mechanism which is adapted to retain the control valves 25 and 26 in operated position so long as the buttons 32 are depressed and so long as the fluid connection does not collapse and permit the control valves to return to initial position under the influence of the spring 28. The timing mechanism controls the retention of the control means in operated position for a desired lapse of time which in the complete combination or embodiment illustrated is any time longer than the operation of the holding means.

What I claim is:

1. A power mechanism for pressing machines including pressing elements, one of which is movable toward and from the other, said mechanism including a fluid operated motor having a movable piston, a feed line for a motive fluid, a normally closed intake valve in said line, manual means for opening the valve, means for transferring the movement of the manual means to the valve including a pressure chamber, and a pressure operated member in said chamber and operable by the pressure in one direction to open the valve, conduit connections to the feed line and to said chamber for applying pressure to said member in the opposite direction and thereby tending to reset the manual means, a normally open valve in said conduit connections, and means operated by the piston during its power movement to operate the last named valve.

2. A power mechanism for pressing machines including pressing elements, one of which moves toward and from the other, said mechanism including a fluid operated motor having a movable piston, a feed line for a motive fluid, means for controlling the flow of fluid to and from the cylinder comprising a normally closed intake valve in said line, manual means for opening the valve, means for transferring the movement of the manual means to the valve including a pressure chamber, and a pressure member in said chamber and operable by the pressure in one direction to open the valve, conduit connections to the feed line and to said chamber for applying pressure to said member in the opposite direction and thereby tending to reset the manual means, a normally open valve in said conduit connections, and means operated by the piston during its power movement to operate the last named valve, the means connecting the manual means and the pressure member including a relief valve.

3. A power mechanism for pressing machines including pressing elements, one of which moves toward and from the other, said mechanism comprising a cylinder, a single acting piston movable in the cylinder, a feed line for a motive fluid, a valve casing having a combined intake and exhaust valve therein normally arranged with the intake valve closed and the exhaust valve open, a conduit leading from the valve casing to the cylinder and having a branch with a normally open exhaust valve therein provided with means tending to close it, mechanism for operating the combined intake valve and exhaust valve including a cylinder, with a plunger movable therein, the plunger having a handle, a pressure chamber having a movable member therein and a part actuated thereby and coacting with the combined intake and exhaust valve to actuate it in one direction, a conduit connecting the cylinder which has the plunger therein and to the pressure chamber on one side of the member therein, a pipe communicating with said branch and with the pressure chamber to create pressure therein in opposition to that created by the plunger when operated, and means controlled by the piston for periodically operating the valve in said branch.

4. A power mechanism for pressing machines including pressing elements, one of which moves toward and from the other, said mechanism comprising a cylinder, a single acting piston, movable in the cylinder, a feed line for a motive fluid, a valve casing having a combined intake and exhaust valve therein normally arranged with the intake valve closed and the exhaust valve open, a conduit leading from the valve casing to the cylinder and having a branch with a normally open exhaust valve therein provided with means tending to close it, mechanism for operating the combined intake valve and exhaust valve comprising a cylinder with a plunger movable therein, the plunger having a handle, a pressure chamber having a movable member therein and a part actuated thereby and coacting with the combined intake and exhaust valve to actuate it in one direction, a conduit connecting the cylinder which has the plunger therein, and to the pressure

chamber on one side of the member therein, a pipe communicating with said branch and with the pressure chamber to create pressure therein in opposition to that created by the plunger when operated, and means controlled by the piston for periodically opening and closing the valve in said branch, and a normally closed manually operable exhaust valve connected in the branch.

5. A power mechanism for pressing machines including pressing elements, one of which moves toward and from the other, said mechanism comprising a cylinder, a single acting piston movable in the cylinder, a feed line for a motive fluid, a valve casing having a combined intake and exhaust valve therein normally arranged with the intake valve closed and the exhaust valve open, a conduit leading from the valve casing to the cylinder and having a branch with a normally open exhaust valve therein provided with means tending to close it, mechanism for operating the combined intake and exhaust valve comprising a cylinder with a plunger movable therein, the plunger having a handle, a pressure chamber having a movable member therein and a part actuated thereby and coacting with the combined intake and exhaust valve to actuate it in one direction, a conduit connecting the cylinder, which has the plunger therein, to the pressure chamber on one side of the member therein, a pipe communicating with said branch and with the pressure chamber to create pressure therein in opposition to that created by the plunger when operated, and means controlled by the piston for periodically opening and closing the valve in said branch, and a relief valve in the conduit connecting the cylinder, in which the plunger works, and the pressure chamber.

6. A power mechanism for pressing machines including pressing elements one of which is movable toward and from the other to close the press, said mechanism including an actuator adapted to be connected to a source of power, a control member for controlling the application of motive power to the actuator, a two-hand control means normally in inoperative position and movable into operative position to operate said control member, means operated by the movement of the actuator during the closing of the press to operate said control member and to exert a force against the two-hand means to restore the same to initial position, and means to render the control member inoperative when the dual control is held from being restored to inoperative position.

7. A power mechanism for pressing machines including pressing elements one of which is movable toward and from the other to close the press, said mechanism including an actuator adapted to be connected to a source of motive power, a control member for controlling the application of motive power to the actuator, a two-hand control means normally in inoperative position and movable into operative position to operate said control member, means operated by the closing movement of the press to operate said control member and to exert a force against the two-hand means to restore the same to initial position, and means to render the control member inoperative when the dual control is held from being restored to inoperative position.

8. A control operating mechanism for power devices having a control means comprising a pair of cylinder members, a manually operable plunger member in each cylinder member, one of said members being movable relatively to the other, reservoirs for a liquid connected with each cylinder member when the plunger member is in its initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the movable member, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, and connections between each cylinder and the pressure responsive means.

9. A control operating mechanism for power devices having a control means comprising a pair of cylinders, a manually operable plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, and connections between each cylinder and the pressure responsive means.

10. A control operating mechanism for power devices having a control means comprising a pair of cylinders, a manually operable plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, and means to hold the control means in operated position and permitting release of the manually operated plungers.

11. A control mechanism for power devices having a control means comprising a pair of cylinders, a manually operable plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, and means tending to force the liquid back into the cylinders against the plungers and holding the control means in operated position.

12. A control mechanism for power devices having a control means comprising a liquid system including a pair of cylinders, a manually operable plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each

cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, and leak means permitting the gradual escape of liquid from the liquid system.

13. A control operating mechanism for power devices having a control means comprising a liquid system including a pair of cylinders, a manually operable plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means and relief means connected in the liquid system to relieve excessive pressures when they occur.

14. A control mechanism for power devices having a control means comprising a pair of cylinders, a plunger in each cylinder having a predetermined stroke therein, a manual connected with each plunger, reservoirs for a liquid, a port in the wall of each cylinder adjacent the end of the plunger in its initial position and covered by the plunger as soon as it starts its stroke, the port being connected with a reservoir so that the cylinder remains full of liquid when the plunger is in initial position, pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring the liquid charge from both cylinders to operate the control means, and connections between the bottom of each cylinder and the pressure responsive means.

15. A control mechanism for power devices having a control means comprising a pair of cylinders, a plunger in each cylinder having a predetermined stroke therein, a manual connected with each plunger, reservoirs for a liquid, a port in the wall of each cylinder adjacent the end of the plunger in its initial position and covered by the plunger as soon as it starts its stroke, the port being connected with the reservoir so that the cylinder remains full of liquid when the plunger is in initial position, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring the liquid charge from both cylinders to operate the control means, connections between the bottom of each cylinder and the pressure responsive means, and leak means at the bottom of each cylinder and connected with a reservoir for permitting a slow escape of liquid from the cylinder.

16. A control mechanism for power devices having a control means comprising a pair of cylinders, a plunger in each cylinder having a predetermined stroke therein, spring means tending to hold the plungers in and return them to initial position, a manual connected with each plunger, reservoirs for a liquid, a port in the wall of each cylinder adjacent the end of the plunger in its initial position and covered by the plunger as soon as it starts its stroke, the port being connected with a reservoir so that the cylinder remains full of liquid when the plunger is in initial position, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring the liquid charge from both cylinders to operate the control means, and connections between the bottom of each cylinder and the pressure responsive means.

17. A control mechanism for power devices having a control means comprising a pair of liquid reservoirs, a cylinder in each reservoir, a plunger in each cylinder having a predetermined stroke therein, a manual connected with each plunger, a port through the wall of each cylinder adjacent the end of the plunger in its initial position and covered by the plunger as soon as it starts its stroke, the port opening into the reservoir so that the cylinder remains full of liquid, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring the liquid charge from both cylinders to operate the control means, and connections between the bottom of each cylinder and the pressure responsive means.

18. A control mechanism for power devices having a control means comprising a pair of liquid reservoirs, a cylinder in each reservoir, a plunger in each cylinder having a predetermined stroke therein, a manual connected with each plunger, a port through the wall of each cylinder adjacent the end of the plunger in its initial position and cut off by the plunger as soon as it starts its stroke, the port opening into the reservoir so that the cylinder remains full of liquid, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring the liquid charge from both cylinders to operate the control means, connections between the bottom of each cylinder and the pressure responsive means and a leak opening at the bottom of each cylinder opening into the reservoir for permitting a slow escape of liquid from the cylinder.

19. A garment or ironing machine comprising cooperating pressing jaws one of which is movable toward and from the other, actuating mechanism operatively connected with the movable jaw including motor means, control means therefor, a control mechanism for actuating the control means and the motor means including, a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, and holding means operable upon a predetermined extent of movement of the actuating mechanism to hold the control means in operated position.

20. A garment or ironing machine comprising cooperating pressing jaws one of which is movable toward and from the other, actuating mechanism operatively connected with the movable jaw including motor means, control means therefor, a control mechanism for actuating the con-

trol means and the motor means including a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means to actuate the same, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, holding means operable upon a predetermined extent of movement of the actuating mechanism to hold the control means in operated position, and means to release the holding means.

21. A garment or ironing machine comprising cooperating pressing jaws one of which is movable toward and from the other, actuating mechanism operatively connected with the movable jaw including motor means, control means therefor, a control operating mechanism for actuating the control means and the motor means including a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means and having double pressure members both of which are movable in one direction under liquid pressure to actuate the control means and movable in opposite directions upon pressure being applied therebetween, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, and means operable upon a predetermined extent of movement of the actuating mechanism to admit pressure between the double pressure members to hold the control means in operated position and restore the plungers to initial position.

22. A garment or ironing machine comprising cooperating pressing jaws one of which is moved toward and from the other, actuating mechanism operatively connected with the movable jaw including an air motor means, control means therefor, a control operating mechanism for actuating the control means and the motor means including a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means and having double pressure members both of which are movable in one direction under liquid pressure to actuate the control means and movable in opposite directions upon pressure being applied therebetween, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, and valve means operable upon a predetermined extent of movement of the actuating mechanism to admit air pressure between the double pressure members to hold the control means in operated position and to restore the plungers to initial position.

23. A garment or ironing machine comprising cooperating pressing jaws one of which is movable toward and from the other, actuating mechanism operatively connected with the movable jaw including an air motor means, control means therefor, a control operating mechanism for actuating the control means and the motor means including a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means and having double pressure members both of which are movable in one direction under liquid pressure to actuate the control means and movable in opposite directions upon pressure being applied therebetween, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means and valve means connected with the air supply to the motor means and operable a plurality of times during the movement of the actuating mechanism to periodically admit air pressure between the double pressure members to hold the control means in operated position and to restore the plungers to initial position.

24. A garment or ironing machine comprising cooperating pressing jaws one of which is movable toward and from the other, actuating mechanism operatively connected with the movable jaw including an air motor means, control means therefor, a control operating mechanism for actuating the control means and the motor means including a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means and having double pressure members both of which are movable in one direction under liquid pressure to actuate the control means and movable in opposite directions upon pressure being applied therebetween, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, valve means having a restricted opening and operable upon a predetermined extent of movement of the actuating mechanism to admit air pressure between the double pressure members to hold the control means in operated position.

25. A garment or ironing machine comprising cooperating pressing jaws one of which is movable toward and from the other, actuating mechanism operatively connected with the movable jaw including an air motor means, control means

therefor, a control operating mechanism for actuating the control means and the motor means including a pair of cylinders, a manually operated plunger in each cylinder and movable therein, reservoirs for a liquid connected with each cylinder when the plunger is in initial position and the connection being cut off to trap a predetermined quantity of liquid within each cylinder during the movement of the plunger, a pressure responsive means operatively connected with the control means and having double pressure members both of which are movable in one direction under liquid pressure to actuate the control means and movable in opposite directions upon pressure being applied therebetween, the pressure responsive means requiring a predetermined quantity of liquid supplied from each cylinder to operate the pressure responsive means sufficiently to operate the control means, connections between each cylinder and the pressure responsive means, valve means connected with the air supply to the motor means and operable a plurality of times during the movement of the actuating mechanism to periodically admit air pressure between the double pressure members to hold the control means in operated position and to restore the plungers to initial position, and a restricted opening in the valve means.

26. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, operating mechanism therefor including a motor means, control means connected with the motor means and controlling the operation thereof, manual means operatively connected with the control means and movable to actuate the latter, pressure operated locking means connected with a source of fluid supply after fluid has been supplied to the motor means and retaining the motor means in operated position, and exhaust valve means normally open and connected with the locking means thereby rendering the locking means normally ineffective, said exhaust valve means being operable to render the locking means effective.

27. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, operating mechanism therefor including a motor means, control means connected with the motor means and controlling the operation thereof, manual means operatively connected with the control means and movable to operate the latter, pressure operated locking means connected with a source of fluid supply after fluid has been supplied to the motor means and retaining the motor means in operated position, a normally open exhaust valve means connected with the motor means through a restricted passage and connected with the pressure operated locking means to render the latter normally ineffective, and means operable upon a predetermined extent of movement of the operating mechanism to close the exhaust valve thereby rendering the locking means effective.

28. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, operating mechanism therefor including a motor means, control means connected with the motor means and controlling the operation thereof, manual means operatively connected with the control means and movable to operate the latter, pressure operated locking means connected with a source of fluid supply after fluid has been supplied to the motor means and retaining the control means in operated position, a normally open exhaust valve means connected with the motor means through a restricted passage and connected with the pressure operated locking means to render the latter ineffective, and means operable upon a predetermined extent of movement of the operating mechanism to close the exhaust valve thereby rendering the locking means effective to hold the control valve open.

29. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, operating mechanism therefor including a motor means, control means connected with the motor means and controlling the operation thereof, manual means operatively connected with the control means and movable to actuate the latter, pressure operated locking means connected with a source of fluid supply after fluid has been supplied to the motor means and retaining the motor means in operated position, a normally open exhaust valve means, a connection between the exhaust valve means and the locking means thereby rendering the locking means normally ineffective, and a connection between the exhaust valve means and the manual means to return the latter to initial position, whereby closing of said exhaust valve means renders the locking means effective and urges the manual means to return to initial position.

30. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, operating mechanism therefor including a motor means, control means connected with the motor means and controlling the operation thereof, manual means operatively connected with the control means and movable to operate the latter, pressure operated locking means connected with a source of fluid supply after fluid has been supplied to the motor means and retaining the motor means in operated position, a normally open exhaust valve means connected with the motor means through a restricted passage, a connection between the exhaust valve means and the pressure operated locking means to render the latter normally ineffective, a connection between the exhaust value means and the manual means to urge the latter to return to initial position, and means operable upon a predetermined extent of movement of the operating mechanism to close the exhaust valve thereby rendering the locking means effective and returning the manual means to initial position.

31. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, operating mechanism therefor including a motor means, control means connected with the motor means and controlling the operation thereof, manual means operatively connected with the control means and movable to operate the latter, pressure operated locking means connected with a source of fluid supply after fluid has been supplied to the motor means and retaining the control means in operated position, a normally open exhaust valve means connected with the motor means through a restricted passage and connected with the pressure operated locking means to render the latter ineffective and connected with the manual means to return the latter to initial position, and means operable upon a predetermined extent of movement of the operating mechanism to close the exhaust valve thereby rendering the locking means effective to hold the control valve open and returning the manual means to initial position.

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