Dec. 9, 1924. 1,519,092

J. C. LEDBETTER

GARMENT PRESS

Filed Oct. 27, 1923 3 Sheets-Sheet 1

Fig. 1.

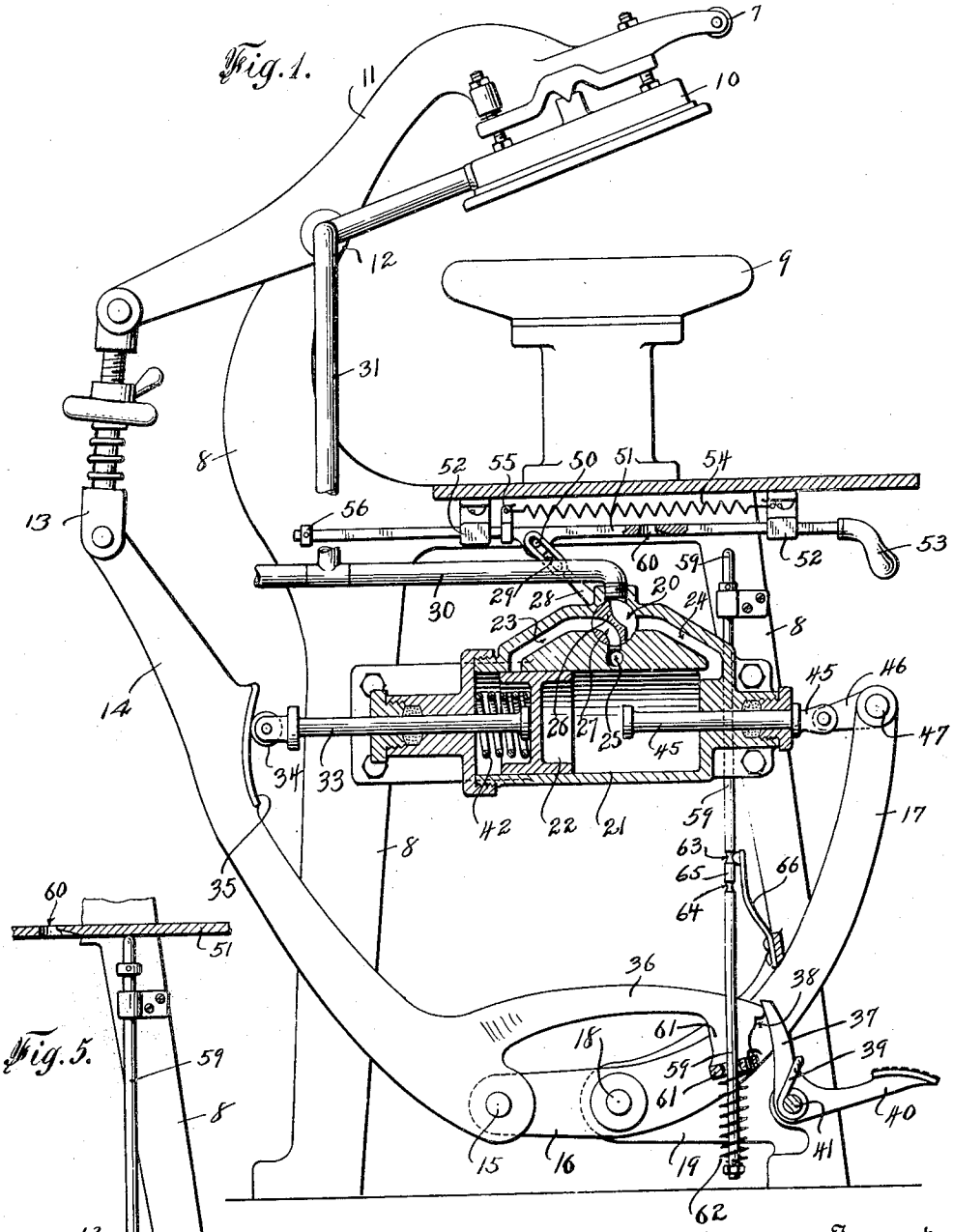


Fig. 5.

Inventor
James C. Ledbetter

By Attorneys
Bobbett & Ledbetter

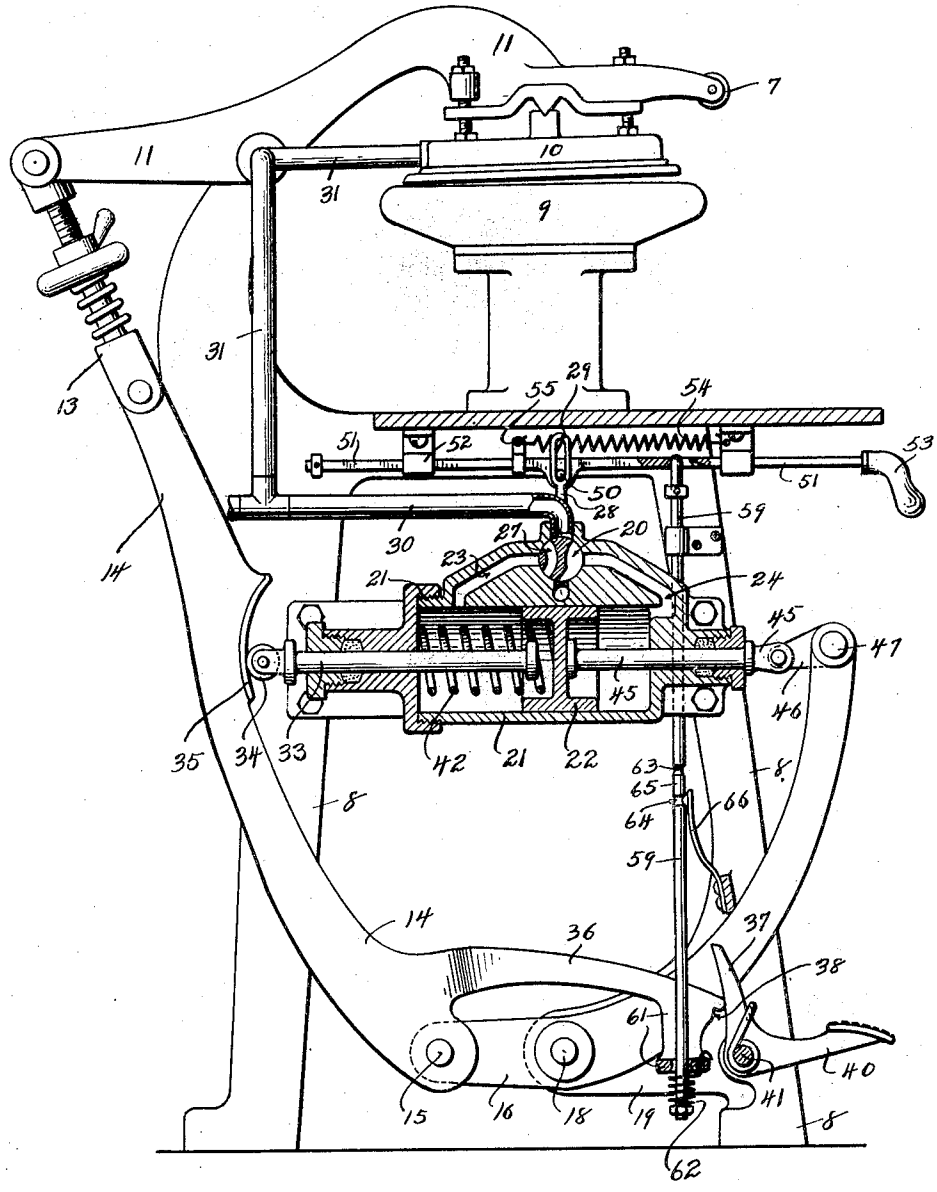
Dec. 9, 1924. 1,519,092

J. C. LEDBETTER

GARMENT PRESS

Filed Oct. 27, 1923 3 Sheets-Sheet 2

Fig. 2.



Inventor
James C. Ledbetter

By Attorneys
Dobleber & Ledbetter

Dec. 9, 1924. 1,519,092

J. C. LEDBETTER

GARMENT PRESS

Filed Oct. 27, 1923 3 Sheets-Sheet 3

Fig. 4.

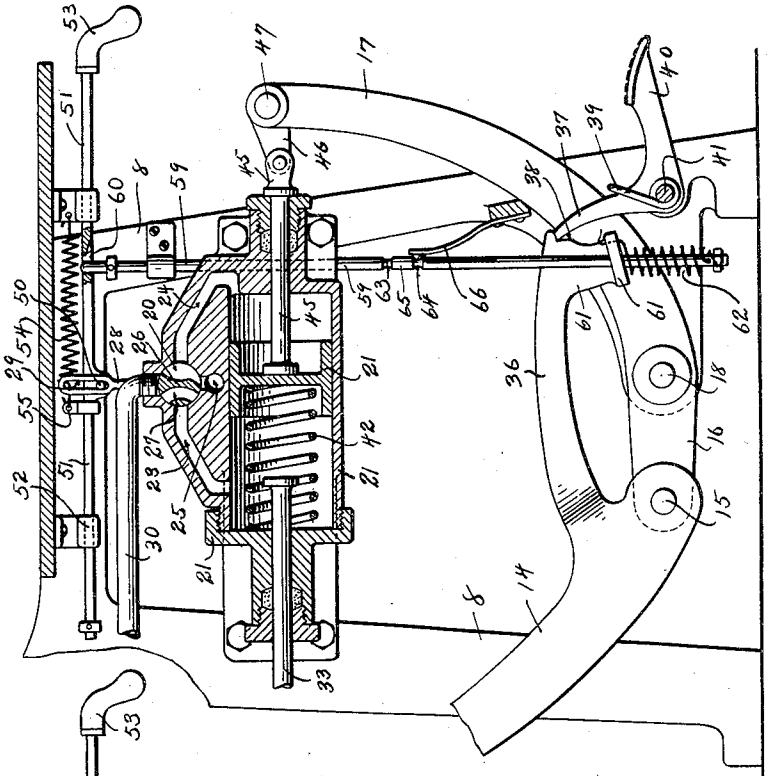
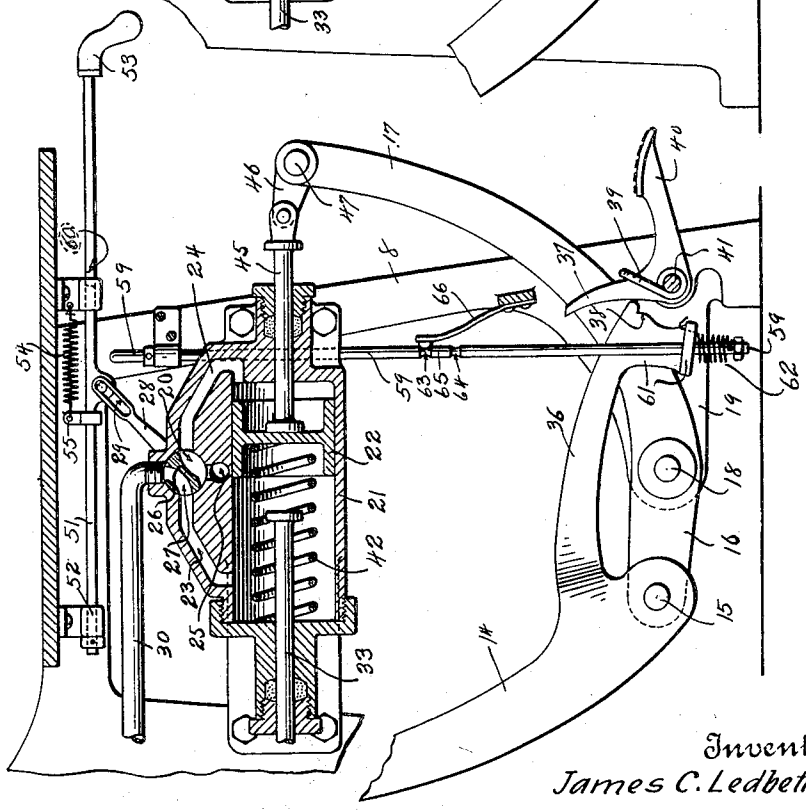


Fig. 3.



Inventor
James C. Ledbetter

By Attorneys
Goldsborough & Ledbetter

Patented Dec. 9, 1924. 1,519,092

UNITED STATES PATENT OFFICE.

JAMES C. LEDBETTER, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE PROSPERITY COMPANY, INC., OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

GARMENT PRESS.

Application filed October 27, 1923. Serial No. 671,122.

To all whom it may concern:

Be it known that I, JAMES C. LEDBETTER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Garment Presses, of which the following is a specification.

This invention relates to pressing machines, and more particularly to high powered pressing machines adapted for laundry ironing, garment pressing, and work of similar character.

An object of the invention is to produce an improved high powered pressing machine designed to rapidly produce high pressure to quickly press and iron garments. A further object of the invention is to produce a pressing machine which rapidly works without manual effort on the part of the operator enabling the machine to be handled by the operator throughout a working day without tiring. An additional object is to produce a pressing machine which opens up by power, closes by gravity as by the weight of its own parts, and finally presses by the application of motive power. Likewise an object is to provide a safety mechanism whereby the final application of the motive power which follows the closing of the machine, is not permitted to be applied until the pressing members are in contact, thereby preventing possible injury to the operator's hands.

It has been found desirable but unsafe to provide garment pressing machines which close by power, for the reason that the operator is generally engaged in spreading the garment over the buck or work support thereby having his hands in line with the pressing jaws. Danger to the operator's hands ensues when the head closes down by power, and to cure this defect of power closed presses, I provide a machine which quickly closes without the application of power, and such closing is effected by the weight of the head and not by the manual effort of the operator. When my improved pressing machine closes through the agency of its own weight, it may by chance come in contact with the operator's hands, but in such case, the pressing head stops without injury to one's hands because the pressing head movement is utilized to straighten a pressing toggle which impedes the head movement, and the operator may quickly withdraw his hands from between the pressing members after which the press continues its closing motion until the jaws meet, and then motor power is applied by a manual control lever.

The accompanying drawings illustrate an embodiment of the invention serving to illustrate the principle thereof as well as the construction and mode of operation, all of which may be suitably varied without departing from the principles of the invention.

Figure 1 illustrates the pressing machine in side elevation with parts thereof in section, the said pressing head or member being partly raised and traveling upwardly under the lifting force of the power opening means.

Figure 2 illustrates a similar side elevation with the pressing machine in partially closed position, the said head having a very nearly reached contact with the buck, the position of parts being just prior to the automatic unlocking of the motor control handle; and in case an operator's fingers or hands remain inadvertently under the head, no injury thereto ensues due to the fact that the head moves by gravity and without the application of power.

Figure 3 shows a fragmentary view of the pressing machine with the motor parts in position applying final pressure. In this view a safety lock has been automatically unlocked thereby enabling the power to be manually turned on after the head makes contact with the buck.

Figure 4 shows a similar fragmentary view, the position of parts being such that the pressing members (not shown) are opened to maximum position and held there through the agency of a manually releasable catch and pawl shown in engaging position.

Figure 5 is a fragmentary detail view of the aforesaid safety latch in neutral position ready to automatically lock against the motor control device or throttle when the press opens up to its limit and after the operator releases the motor control throttle.

Referring now more particular to the drawings for a detailed description of the invention, there is shown a pressing machine frame 8 carrying a press buck or work support 9. A swinging press head 10 is carried on the forward end of a press lever

11 which is pivoted at 12 on the frame. The buck 9 and head 10 provide cooperating pressing members capable of being opened and closed one against the other and between which garments may be steamed, sprayed, heated, pressed, and cooled. The rear end of the press lever 11 carries a pivotal link 13 which in turn is pivoted to a lower link 14. The links constitute a toggle 13—14, the upper end of which is pivoted to the press lever 11 and the lower end of which is pivoted at 15 upon the short arm 16 of a high pressure lever 17. The high pressure lever 16—17 is pivoted at 18 upon the frame part or projection 19. It is to be observed therefore that the main operating toggle 13—14 swings in and out on the lower pivot support 15 which causes the head to rise and fall from and toward the buck. The lower pivot point 15 is itself movable up and down through the agency of the upper end of the lever 17 which is subjected by motor means to a short swing as later described.

A motor means is provided for both raising the head and applying final high pressure thereby saving the operator's physical strength in doing this work. Heretofore power pressing machines have been produced, but the operator had to either close the machine manually by pulling down on a head handle 7, or else the machine was closed by power. Both types of pressing machines were found undesirable in respect either to physical exertion or danger in operation. In the first instance, it tires an operator to draw a pressing head down throughout a working day. On the other hand, if the head is closed by power there is danger of catching the operator's hands between the pressing jaws. In the pressing machine structure being described, the head is permitted to close of its own weight, and not until after the head actually makes contact with the buck is the power application permitted to be turned on; and in this arrangement of the mode of operation the press is perfectly safe.

A fluid motor comprising a steam or air pressure cylinder 21 is mounted in the frame 8 and carries a piston 22 which reciprocates back and forth under pressure of steam entering a steam passage 23 or 24 depending upon whether the press is closed and working under high pressure or lifting the head by power. An exhaust passage 25 is made in the cylinder 21 and is adapted to be alternately connected first with one passage 23 and the other passage 24 thereby providing an open exhaust for each end of the steam cylinder 21. A valve 26 is rotatably confined in the cylinder 21 and provided with a passage 27, said valve being manually turned to register with the steam passage 23 and exhaust passage 25 in one instance, as shown in Figure 1, while it is turned to the position shown in Figure 4 for the purpose of cutting steam off from the pressing end of the cylinder. The valve 26 is also provided with a passage 20 which connects with the cylinder passage 24 to feed steam to the press opening end of the cylinder. A valve lever 28 has its lower end fixed to the rotatable valve core 26, while the other end may be slotted as at 29 to engage a manually operated element as later described.

A main steam supply pipe 30 is connected with the steam motor cylinder 21; and similarly a steam pipe 31 supplies steam to the head 10 for spraying and heating the garment. The steam pipe 30 supplies steam from a boiler to first one passage 23 and the other passage 24 depending upon the setting of the valve 26. The steam motor 21 has connection with the main operating toggle 13—14 for the purpose of breaking the toggle rearwardly and raising the head 10 upwardly to open the press after the pressing operation is completed, and said connection may consist of a lost motion arrangement in the form of a disconnectible push rod or connecting rod extending from the motor piston to the toggle; and this structure consists of a push rod 33 having a contact roller 34 carried on the outer end thereof engaging a cam 35 carried by the toggle link 14, and the push rod is slidably confined in a long neck of the motor or engine cylinder. The design of the cam is such that its contour continually presents a straight pushing surface to the roller 34 thereby avoiding side strain against the push rod as the head 10 is being lifted by the movement of the motor piston 22. During the reciprocation of the piston rearwardly through the cylinder, the position of the valve 26 is as shown in Figure 1 which permits steam to flow through the passage 24, and exhaust from the passage 23. The head is being lifted by thrusting rearwardly on the toggle link 14 until a catch or ratchet arm 36 integral with the toggle rises to that position shown in Figure 4 whereupon a pawl 37 drops into registry with a ratchet end 38 formed on the outer end of the catch arm. A spring or other means 39 acts to positively engage the pawl 37 with the ratchet 38 thereby holding the toggle 14 in a broken position with the head 10 raised to its upwardly limited position. A pawl release pedal 40 is pivoted at 41 and integrally formed with the pawl 37 for the purpose of manually releasing the toggle from its rearwardly broken position thereby permitting the head to rapidly gravitate toward the buck 9. A spring 42 is compressed during the travel of the piston to raise the head 10, and at the end of the piston stroke, this spring acts to gradually return the piston 22 back to a central posi-

tion, as shown in Figure 2, and into engagement with a high pressure mechanism to be described. During the head lifting operation, the valve arm 28 is manually held for the period of one or two seconds in the position shown in Figure 1 whereupon the operator releases his hold upon the valve, permitting it to promptly and automatically return to neutral and closed position shown in Figure 4.

A push rod 45 is slidably confined in the other end of the cylinder and connects with a link 46 pivoted at 47 to the lever 17. The valve lever 28 is next manually set to the position shown in Figure 3, whereupon steam flows from the pipe 30 directly to the left end of the cylinder and acts against the piston through the push rod 45 to swing the high pressure lever 17 to the right about its pivot point 18 which produces an upward vertical lift at the pivot point 15 thereby elevating the straightened toggle 13—14 imposing high compression between the pressing members 9 and 10.

Improvements are provided in a combined and automatic valve operating mechanism whereby the operator has the machine under manual control and at the same time the press is permitted to automatically function in respect to the neutral setting of the valve 26 to stop the flow of steam to the motor cylinder. The slotted end 29 of the valve operating lever is confined over a pin 50 fixed to a slide 51. The slide is mounted in suitable guides 52, and a handle 53 is fixed to the outer end of the slide in position convenient to the operator's grasp whereby he may quickly place his hand on the handle under the pressing machine table and pull it back and forth for controlling the operation of the press. A spring 54 has one end fixed to some stationary part such as the frame while the other end thereof is attached at 55 to the slide member 51. The operator grasps the handle 53 and moves it rearwardly to open the valve 26 into position shown in Figure 1, whereupon the spring 54 is stretched and placed under substantial tension. After the operator releases the handle 53, the tension spring 54 acts to return the slide 51 to a neutral, central, and positively locked position as shown in Figure 4 which sets the valve 26 to closed position thereby shutting off the steam from both ends of the cylinder; and an automatic lock acts to stop the spring 54 from pulling the valve lever 28 beyond the desired closed position as later described.

A safety lock is provided for maintaining the slide in fixed position as shown in Figure 2, while the head is up as well as while moving downwardly, for the purpose of positively preventing harm to the hands of the operator. This locking mechanism in the present instance consists in means to lock the valve 26 against movement at all times excepting when the head 10 has reached engagement with the buck 9. For example, should the head 10 nearly reach the surface of the buck, the valve 26 is still locked in neutral closed position, and only when the head 10 has actually contacted the buck, will the locking mechanism retract itself to permit the operator to apply final pressure through the high pressure lever 17. One suitable mechanism for carrying out this purpose resides in a locking plunger 59, the upper end of which is adapted to jump into an aperture 60 made in the slide 51. The plunger 59 has its lower end slidably confined in a lip or ear 61 integral with the toggle arm 36, and a compression spring 62 is confined on the locking plunger 59 below the ear 61 with the lower end of the spring anchored to the plunger and with the upper end of the spring anchored to the ear 61. This arrangement causes the spring 62 to either be under compression at all times, as when the head 10 closes, or under tension at times, as when the pressing head 10 rises. The plunger 59 is provided with an upper lock groove 63 and a lower lock groove 64 which forms a neutral rest 65 therebetween. A spring snap lock 66 has one end fixed to the frame while the free end thereof is provided with a head which engages one or the other locking groove 63 or 64 as well as the neutral rest 65.

A description of the structure together with a partial description of the operation thereof having been given, a more detailed explanation will now ensue with reference to the position of parts during the several cycles of operation. Take for example Figure 2 wherein the operator has depressed the kick-off pedal 40 to disengage the ratchet arm 36. The weight of the head 10 immediately causes the press to close just slightly short of contact thus illustrating how the head will stop without danger to an operator's hand. The weight of the head is sufficient to cause it to gravitate further downwardly, or in fact it is most natural for the operator to grasp the head handle 7 as it approaches the buck and thereby facilitate the closing operation. The toggle 13—14 quickly straightens bringing the pivot pin center which connects links 13 and 14 into alignment with the other link pivot centers. At this instance, the ear 61 has exerted so much pressure on the spring 62 and so compresses it that it quickly jerks the plunger 59 out of the lock hole 60 causing the snap spring 66 to disengage the lower plunger groove 64 and reengage the upper groove 63 and thereby steadily holding the plunger through the next cycle of operation. Thus the slide 51 is released from its positively locked position, and the operator grasps the handle 53 pulling it forward from position

Figure 2 to position Figure 3 to swing the valve 26 clockwise whereby steam flows from the boiler or pipe 30 into the left end of the cylinder 21 which drives the piston forwardly thereby swinging the high pressure lever 17 on its main pivot 18, and consequently extreme pressure is generated between the head and buck. The operator leaves the handle 53 outwardly so as to hold the pressure on for a short period to complete the garment pressing operation.

Having completed the pressing operation, the operator now thrusts inwardly on the handle 53 bringing it to Figure 1 position which exhausts the steam from the cylinder out through the passage 23 and 25, and at the same time turns steam through the passage 24 to drive the piston which moves the head 10 upwardly towards and beyond the position shown in Figure 1, which at the same time causes the catch arm 36 to slide along the pawl 37 until the pawl snaps under the catch arm and remains in the position shown in Figure 4. By this time, the tension of the spring 62 has become sufficiently great as to unseat the groove 64 from the snap head 66 causing the plunger 59 to slide upwardly into engagement with the underneath surface of the slide 51, for it is to be remembered that the operator has his hand on the handle 53 until the head 10 reaches its uppermost position. The snap spring head 66 is now in contact with the neutral rest 65 just between the two lock grooves 63 and 64 as shown in Figure 5; and almost immediately the pedal 40 and pawl 37 snaps under the ratchet 38, and the operator removes his hand from the handle 53 whereupon the tension of the spring 54 begins to move the slide 51 to the right causing the lock hole 60 to approach the plunger 59, and the strength of the spring 62 remains sufficient to quickly drive the plunger 59 into the hole 60 when the two elements come into registry thereby locking the handle 53 and valve lever 28 against further motion while the head is up, and the last upward movement of the plunger 59 brought the snap head 66 into registry with the lower lock groove 64, thereby causing the plunger 59 to be held in steady position during the period the head is up or traveling downwardly.

The operator now spreads the garment upon the work support or buck 9 with the head 10 up and having done so, he depresses the pedal 40 which permits the head 10 to drop to the buck. When the head touches the buck, the arm 36 has correspondingly traveled sufficiently far to snap the plunger 59 out of registry with the slide thereby again automatically making the machine ready for a final high pressure operation.

It is to be observed that the design and construction of this pressing machine omits the long used counterbalance weight as well as tension springs often employed in connection with the press lever 11 to counterbalance the head 10. One of the existing improvements in this invention is the elimination of the said parts in order that the head 10 may operate in an unbalanced or overbalanced condition which thus effectively and economically provides a press closing means without utilizing power therefor. When the head 10 starts downwardly its inertia is sufficient to lift the toggle links into straight position, and at the same time its downward movement is somewhat restrained due to the straightening toggle. The operator manipulates this machine very rapidly, for just as he completes spreading the garment out over the buck 9 he depresses the pedal 40, and during the last movement employed in straightening the garment over the buck, the head is traveling downwardly. In older pressing machines, the operator not only exerted himself in spreading the garment over the buck, but thereafter he necessarily had to reach up and grasp the head handle to pull the press closed, but with this new type of pressing machine, gravity acts to close the press thus saving the operator's physical effort as well as saving power for performing this operation.

In some cases, it constitutes an advantage in design and structure to provide a freely floating piston in the cylinder thereby employing the lost motion connection between the press opening means as well as between the final pressing means if desired. Thus the cooperating pressing members are not impeded in their movement by the friction of the piston moving in the cylinder.

I so arrange the machine structure that the opening toggle 13—14 and the high pressure lever 17 are placed in substantial alignment and widely separated, thus affording space therebetween for the reception of the motor means. In this way the full stroke of the motor is delivered from both ends of the cylinder to open the pressing machine, and to substantially produce high pressure after it has closed. The long curved lever 17 acquires a substantially high leverage over and against the press lever 11 by virtue of the press lever arm 16 being made substantially short, and the long combined arch of the toggle and lever meeting centrally under the motor provides a construction convenient to assemble.

What I claim is:

1. A pressing machine comprising in combination, cooperating pressing members adapted to open and close to effect pressing operations, an unbalanced press lever carrying one of the pressing members thereby permitting the press to close by gravity, motor means arranged to open the press by power, means to hold the press open, means

to trip the press enabling the press to close by gravity, and motor means to produce high compression after one pressing member has gravitated to the other.

2. A pressing machine comprising in combination cooperating press members adapted to open and close to effect pressing operations, an unbalanced press lever carrying one of the pressing members thereby permitting the press to close by gravity, motor means arranged to open the press by power, means to hold the press open, means to trip the press enabling the press to close by gravity, motor means to produce high compression after one pressing member has gravitated to the other, and a lock to restrain the movement of the power means until the pressing members have reached contacting position.

3. A pressing machine comprising in combination, pressing members, motor means employed to open the press, means permitting gravity to close the press, motor means employed to force the gravity closed members into compression, a manual control device to start the motor means in operation to open the press, and an automatic operating element effective on the manual control device to stop the motor means when the press reaches open position.

4. A pressing machine comprising in combination, pressing members, motor means employed to open the press, means permitting gravity to close the press, motor means employed to force the gravity closed members into compression, a manual control device to start the motor means in operation to open the press, an automatic operating element effective on the manual control device to stop the motor means when the press reaches open position, and a lock operating automatically to secure the manual control device in fixed position against further movement after it has been acted on by the automatic operating element.

5. A pressing machine comprising in combination and having pressing jaws or members, motor means for opening the press, gravity means for closing the press, motor means effective against the closed press to produce extreme pressure, a lock effective to restrain the motor means from operation when the press is open, and a lock to restrain the motor means from operation when the press is traveling toward closed position.

6. A pressing machine comprising in combination and having pressing jaws or members, motor means for opening the press, gravity means for closing the press, motor means effective against the closed press to produce extreme pressure, a lock effective to restrain the motor means from operation when the press is open, a lock to restrain the motor means from operation when the press is traveling toward closed position, and an automatic unlocking device to render the motor means operable when the pressing jaws have met in contact.

7. A pressing machine comprising in combination, cooperating pressing members, a press lever arranged to open and close the press, a fluid pressure motor having connection with the press lever to open the press, gravity means to close the press, a lever having connection with the press lever and fluid motor to produce compression between the closed pressing members.

8. A pressing machine comprising in combination, cooperating pressing members, a press lever arranged to open and close the press, a fluid pressure motor having connection with the press lever to open the press, gravity means to close the press, a lever having connection with the press lever and fluid motor to produce compression between the closed pressing members, a motor control means arranged for convenient operation by the operator, means to lock the control against operation when the press is open, means to lock the control against operation during the closing cycle of the press, and means for automatically unlocking the control means when the pressing members meet in contact.

9. A pressing machine comprising in combination, cooperating pressing members, a motor cylinder related with the pressing members, a piston in the cylinder, one connection extending from the piston to the pressing members for opening the press by power, and another connection extending from the piston to the pressing members to produce high pressure after the press is closed.

10. A pressing machine comprising in combination, cooperating pressing members, a motor cylinder related with the pressing members, a piston in the cylinder, one connection extending from the piston to the pressing members for opening the press by power, another connection extending from the piston to the pressing members to produce high pressure after the press is closed, and means permitting the press to close by gravity.

11. A pressing machine comprising in combination, cooperating pressing members, a motor cylinder related with the pressing members, a piston in the cylinder, one connection extending from the piston to the pressing members for opening the press by power, another connection extending from the piston to the pressing members to produce high pressure after the press is closed, means permitting the press to close by gravity, means for automatically rendering the motor inoperative while the press is opening and closing, and means automatically acting to bring the motor under manual control after the press has closed.

12. A pressing machine comprising in combination, pressing jaw members, a lever arranged to open and close the press, a fluid cylinder, a piston carried in the cylinder, a push rod projecting from one end of the cylinder, a connection made between the connecting rod and lever for opening the press, a push rod projecting from the other end of the cylinder, a connection established between the last named connecting rod and pressing members to produce high pressure.

13. A pressing machine comprising in combination, pressing jaw members, a lever arranged to open and close the press, a fluid cylinder, a piston carried in the cylinder, a push rod projecting from one end of the cylinder, a connection made between the connecting rod and lever for opening the press, a push rod projecting from the other end of the cylinder, a connection established between the last named connection rod and pressing members to produce high pressure, a locking device remaining inactive during the press opening stroke, means rendering the locking device active at the end of the opening stroke, and means permitting and causing the piston to return to normal inactive position after the locking device has become active.

14. A pressing machine comprising in combination, pressing jaw members, a lever arranged to open and close the press, a fluid cylinder, a piston carried in the cylinder, a push rod projecting from one end of the cylinder, a connection made between the connecting rod and lever for opening the press, a push rod projecting from the other end of the cylinder, a connection established between the last named connection rod and pressing members to produce high pressure, a locking device remaining inactive during the press opening stroke, means rendering the locking device active at the end of the opening stroke, means permitting and causing the piston to return to normal inactive position after the locking device has become active, a manual control permitting the press to close, and mechanism for unlocking the locking device after the press has closed.

15. A pressing machine comprising in combination, a frame, pressing members, a toggle cooperating therewith for opening and closing the press, a high pressure lever pivoted in the frame and pivotally supporting one end of the toggle, an arm of the high pressure lever curving away from the toggle and spaced therefrom, and a motor means installed on the frame between the arm and toggle and connected therewith.

16. A pressing machine comprising in combination, a frame, pressing members, a toggle cooperating therewith for opening and closing the press, a high pressure lever pivoted in the frame and pivotally supporting one end of the toggle, an arm of the high pressure lever curving away from the toggle and spaced therefrom, a motor means installed on the frame between the arm and toggle and connected therewith, said motor means comprising a fluid motor, a manual control for the motor means arranged to open the press by power, and a manual control arranged to release the press when in open position permitting said press to close by gravity.

17. A pressing machine comprising in combination, a frame, pressing members, a toggle cooperating therewith for opening and closing the press, a high pressure lever pivoted in the frame and pivotally supporting one end of the toggle, an arm of the high pressure lever curving away from the toggle and spaced therefrom, a motor means installed on the frame between the arm and toggle and connected therewith, said motor means comprising a fluid motor, a manual control for the motor means arranged to open the press by power, a manual control arranged to release the press when in open position permitting said press to close by gravity, and a combination manual and automatic lock cooperating with the manual control to render the manual control inoperable at all times except when the pressing members have reached closed contacting position.

18. A pressing machine comprising in combination, cooperating pressing members adapted to open and close to effect pressing operations, an unbalanced press lever carrying one of the pressing members thereby permitting the press to close by gravity. motor means arranged to open the press by power, a cam and roller cooperating with motor means to open the press, means to hold the press open, means to trip the press enabling the press to close by gravity, and motor means to produce high compression after one pressing member has gravitated to the other.

19. A pressing machine comprising in combination, co-operating pressing members adapted to open and close to effect pressing operations, a press lever carrying one of the pressing members, motor means arranged to open the press by power, means to hold the press open, means to trip the press causing it to close, motor means to produce high compression after one pressing member has contacted the other, a lost motion connection employed between the motor means and press, and a lock to restrain the movement of the motor means until the pressing members have reached said contacting position.

20. A pressing machine comprising in combination, pressing members, motor

means employed to open the press, means permitting gravity to close the press, motor means employed to force the gravity closed members into compression, a manual control lever to start the motor means in operation to open the press, and an automatic locking plunger effective on the manual control lever to stop the motor means when the press reaches open position and during closing motion.

21. A pressing machine comprising in combination and having pressing jaws or members, motor means for opening the press, gravity means for closing the press, motor means effective against the closed press to produce extreme pressure, a lock effective to restrain the motor means from operation when the press is open and lock to restrain the motor means from operation when the press is traveling toward closed position, and automatic mechanism adapted to unlock the locking mechanism after the press has closed.

22. A pressing machine comprising in combination and having pressing jaws or members, a cam and roller device, motor means for operating the cam and roller to open the press, gravity means for closing the press, motor means effective against the closed press to produce extreme pressure, a lock effective to restrain the motor means from operation when the press is open and to restrain the motor means from operation when the press is traveling toward closed position, and an automatic unlocking device to render the motor means operable when the pressing jaws have met in contact.

23. A pressing machine comprising in combination, co-operating pressing members, a press lever arranged to open and close the press, a toggle to operate the lever, a fluid pressure motor having connection with the toggle to open the press, gravity means to close the press, a high pressure lever having pivotal supporting connection with the toggle and fluid motor to lift the toggle and produce compression between the closed pressing members.

24. A pressing machine comprising in combination, co-operating pressing members, a press lever arranged to open and close the press, a toggle to operate the lever, a cam on the toggle, a fluid pressure motor having connection with the cam to open the press, gravity means to close the press, a high pressure lever having connection with the toggle and connected with the fluid motor to produce compression between the closed pressing members, a motor control means arranged for convenient operation by the operator, means to lock the control against operation when the press is open, means to lock the control against operation during the closing cycle of the press, and means for automatically unlocking the control means when the pressing members meet in contact.

25. A pressing machine comprising in combination, a frame, cooperating pressing members carried thereby, a press operating linkage connected to the pressing members and curved downwardly in the frame, a high pressure lever pivoted on the frame and curving upwardly away from the linkage and spaced therefrom, a pivot establishing connection between the linkage and lever, a motor installed between the linkage and lever, and independently operating connections extending from the motor to the link and lever.

26. A pressing machine comprising in combination, cooperating pressing members, a motor cylinder related with the pressing members, a piston in the cylinder, a lost motion connection extending from the piston to the pressing members for opening the press by power, another lost motion connection extending from the piston to the pressing members to produce high pressure after the press is closed, means permitting the press to close by gravity, means for automatically rendering the motor inoperative while the press is opening and closing, means automatically acting to bring the motor under manual control after the press has closed, and means for returning the piston to normal position after the press has opened.

27. A pressing machine comprising in combination, pressing jaw members, a lever arranged to open and close the press, a fluid cylinder, a piston carried in the cylinder, a push rod projecting from one end of the cylinder, a cam and roller connection made between the push rod and lever for opening the press, a push rod projecting from the other end of the cylinder, a connection established between the last named connecting rod and pressing members to produce high pressure, and means for holding the press open, and means for manually tripping the press to cause it to close.

28. A pressing machine comprising in combination, cooperating pressing members, a toggle to open the press, a cam made on the toggle, motor means acting on the cam to open the press, a lever having one end pivoted to the toggle and supporting the toggle, and a connection made between the lever and motor for producing an upward thrust of the toggle by the motor means.

29. A pressing machine comprising in combination, cooperating pressing members, a toggle to open the press, a cam made on the toggle, motor means acting on the cam to open the press, a lever having one end pivoted to the toggle and supporting the toggle, a connection made between the lever and

motor for producing an upward thrust of the toggle by the motor means, a safety lock rendering the motor inoperative after the press opens, and an arm reaching from the toggle to control the operation of the safety lock.

30. A pressing machine comprising in combination, a frame, a press lever pivoted therein, pressing members opened and closed by the lever, a toggle depending from the lever and hanging free of the frame, a high pressure toggle supporting lever pivoted in the frame and supporting the toggle, said toggle and pressure lever being mounted in substantially the same plane and being spaced apart, a motor installed between the toggle and pressure lever, a connection from the motor to the toggle, a connection from the motor to the pressure lever, a motor control lever, and means operable by the toggle for locking and unlocking the motor control lever.

In testimony whereof I affix my signature.

JAMES C. LEDBETTER.