Oct. 22, 1935. A. F. HANNEY 2,017,965

PRESSING MACHINE

Filed March 17, 1934 5 Sheets-Sheet 1

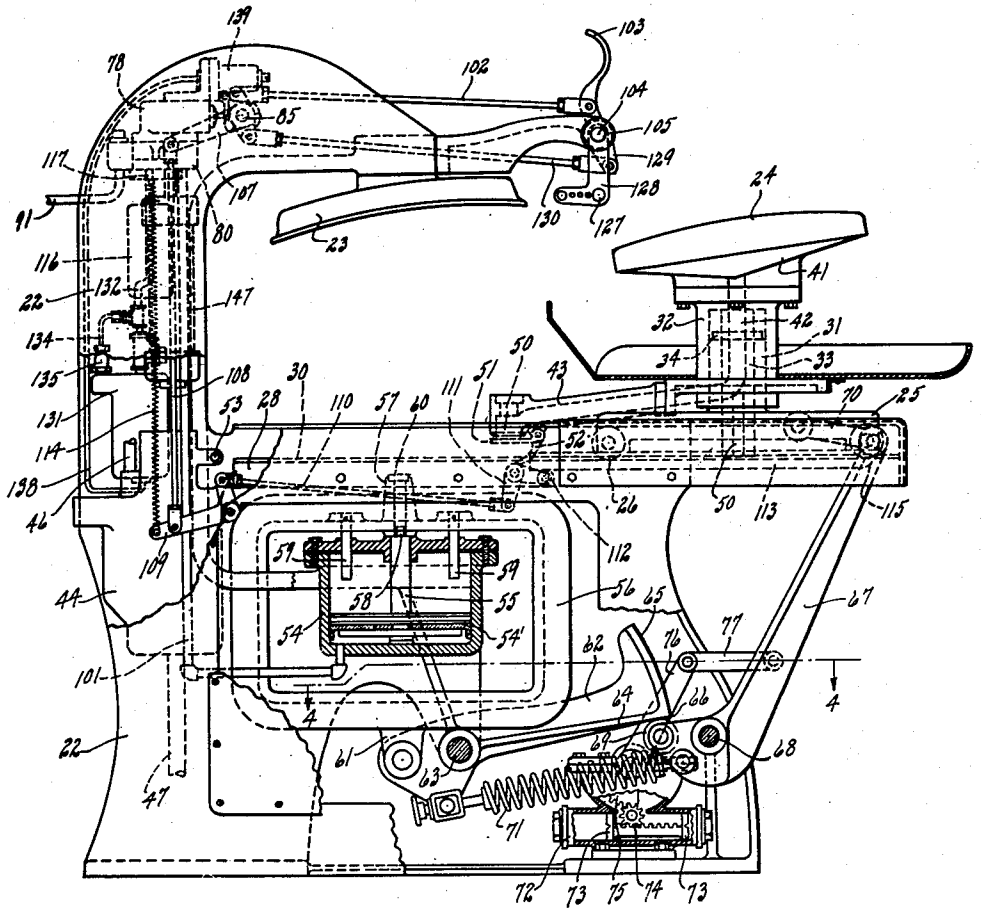


FIG.-1

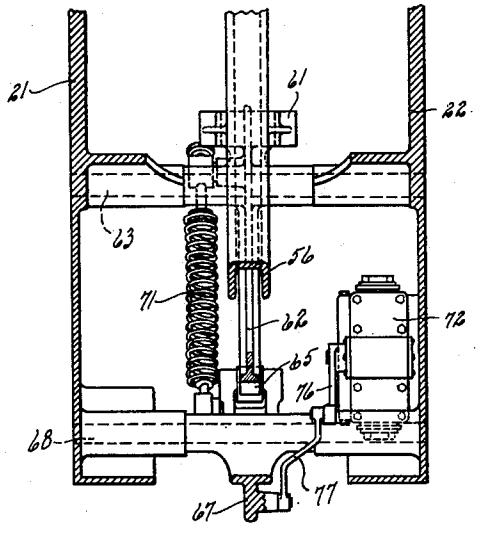


FIG.-4

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Oct. 22, 1935. A. F. HANNEY 2,017,965

PRESSING MACHINE

Filed March 17, 1934 5 Sheets-Sheet 2

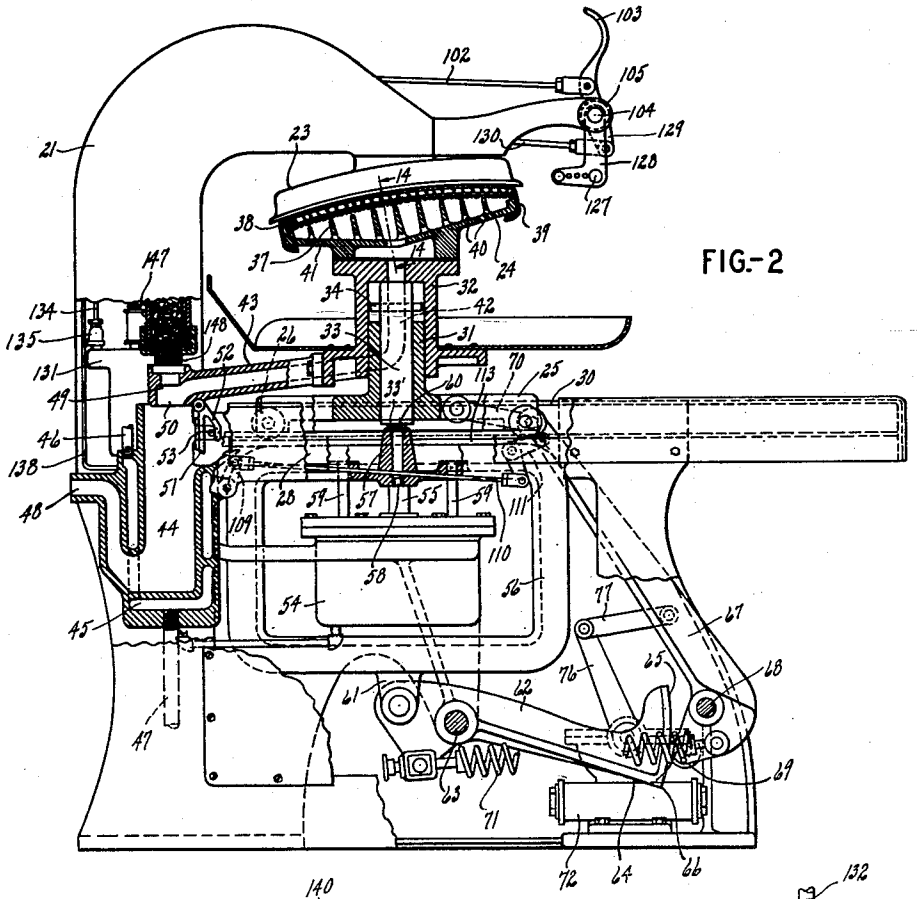


FIG.-2

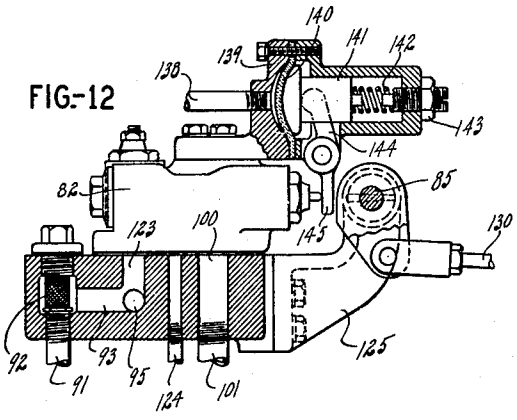


FIG.-12

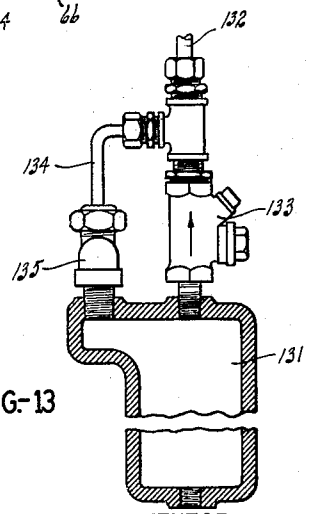


FIG.-13

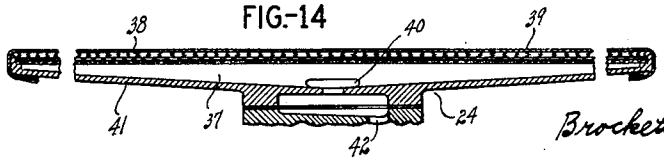


FIG.-14

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Oct. 22, 1935. A. F. HANNEY 2,017,965

PRESSING MACHINE

Filed March 17, 1934 5 Sheets-Sheet 3

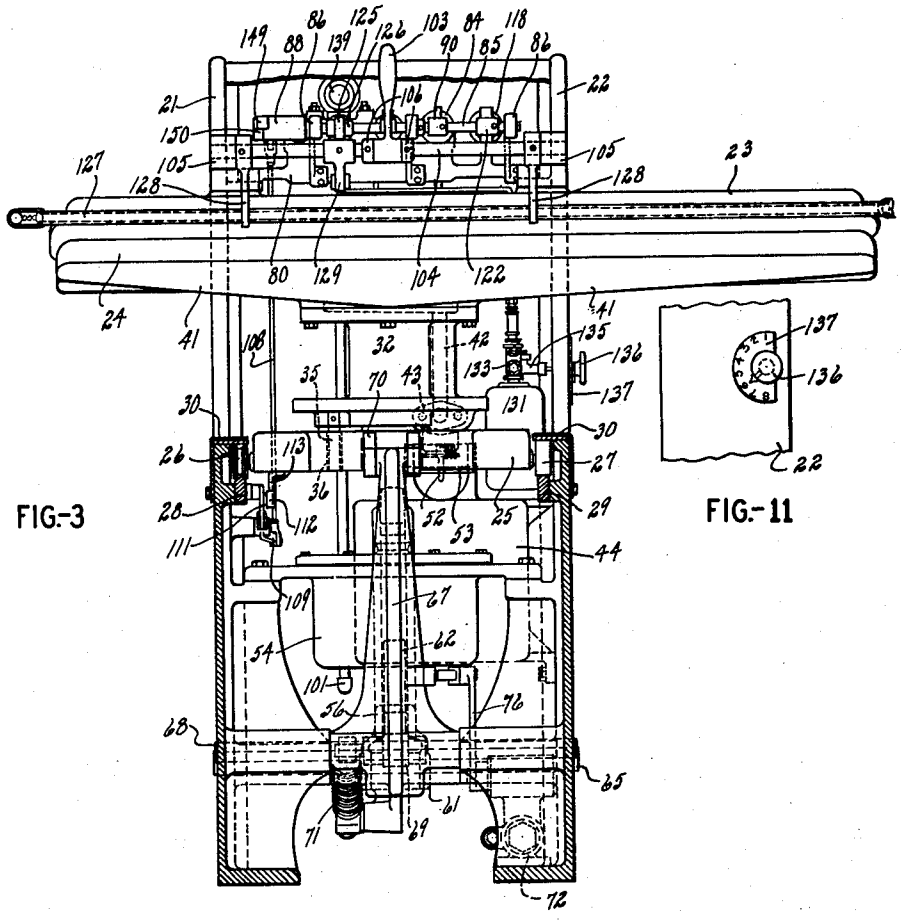


FIG.-3

FIG.-11

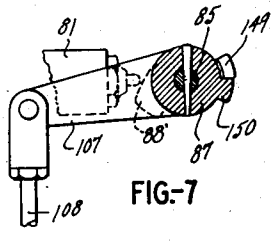


FIG.-7

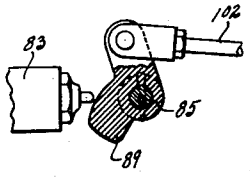


FIG.-8

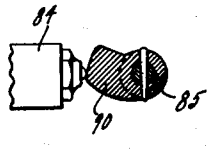


FIG.-9

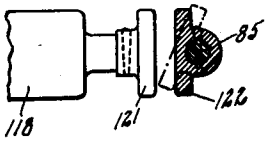


FIG.-10

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Oct. 22, 1935. A. F. HANNEY 2,017,965

PRESSING MACHINE

Filed March 17, 1934 5 Sheets-Sheet 4

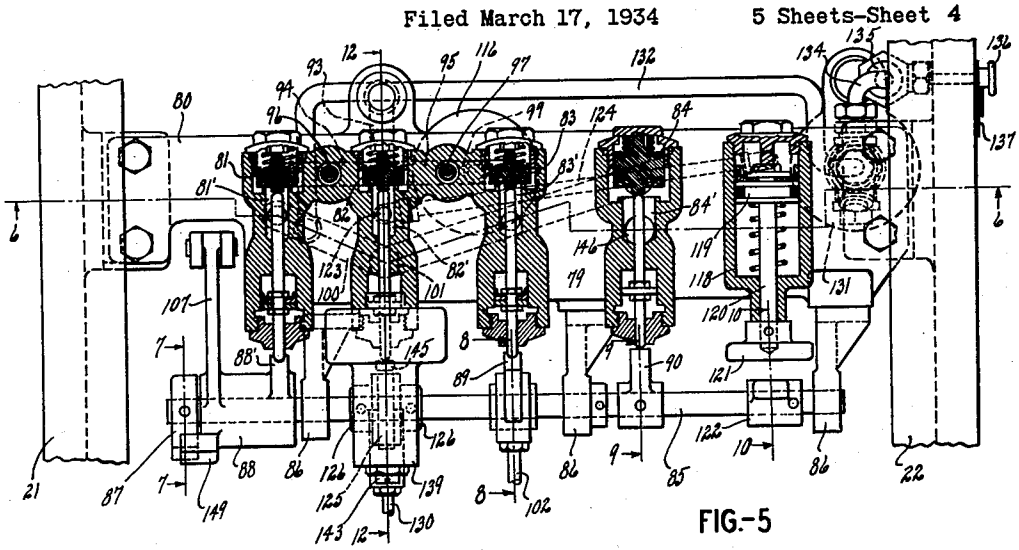


FIG.-5

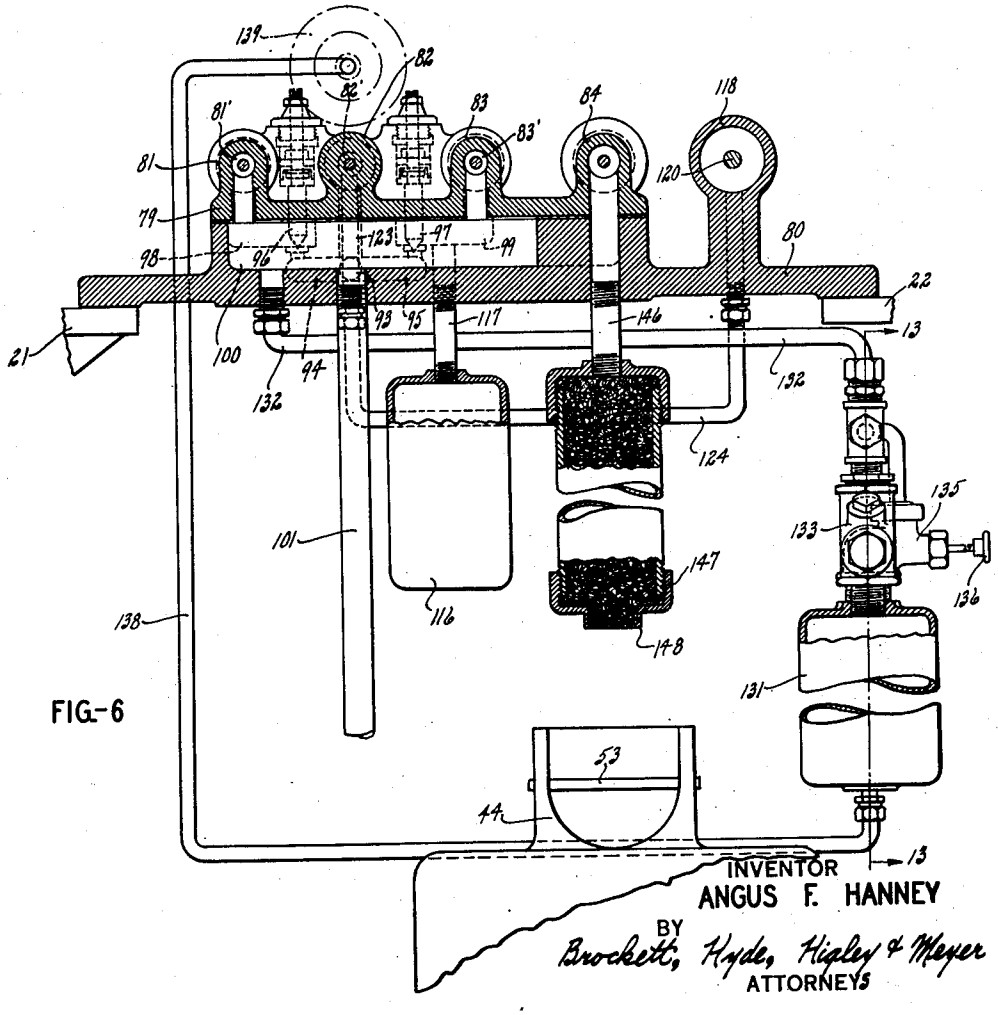


FIG.-6

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Oct. 22, 1935. A. F. HANNEY 2,017,965

PRESSING MACHINE

Filed March 17, 1934 5 Sheets-Sheet 5

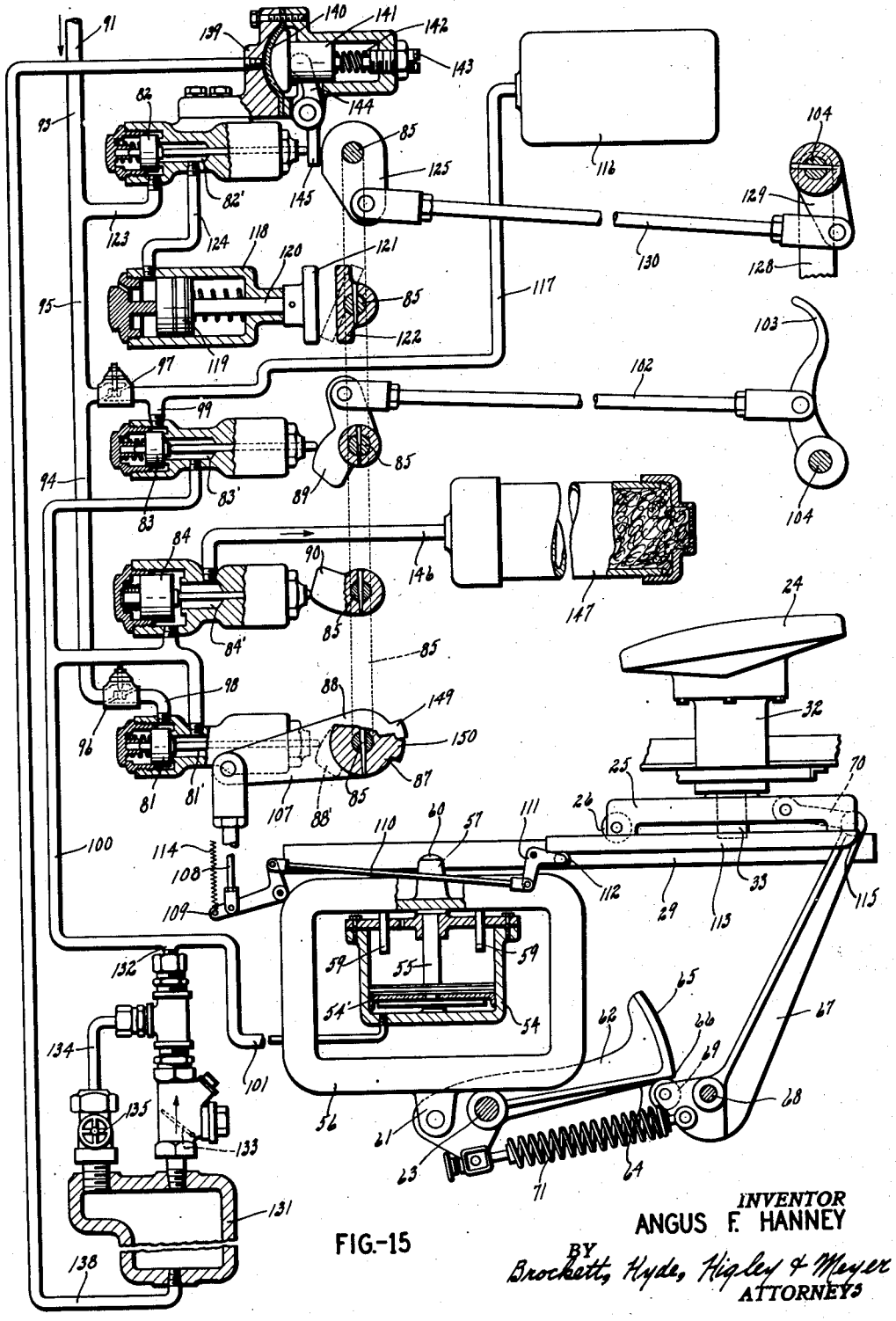


FIG.-15

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Patented Oct. 22, 1935 2,017,965

UNITED STATES PATENT OFFICE

2,017,965

PRESSING MACHINE

Angus F. Hanney, Cincinnati, Ohio, assignor to The American Laundry Machinery Company, Cincinnati, Ohio, a corporation of Ohio

Application March 17, 1934, Serial No. 716,072

26 Claims. (Cl. 68—9)

This invention relates to a pressing machine of the type suitable for laundry and garment work and in which the pressing bed has a movement away from the operator and into pressing engagement with a heated chest.

One object of the invention is to provide an improved arrangement of power means for moving the pressing bed. Among other novel features of my invention is the arrangement of one power means with two connections, one of which is adapted to move the pressing bed into registering position with its coacting pressing head and to maintain the bed in such position while, through the second connection, the power means causes relative movement of the pressing members into final pressure engagement.

Another object of the invention is to provide in a press of the class described a series of automatic controls whereby the operator may initiate a cycle of pressing operations and thereafter without further attention the pressing bed moves into registering position and into final pressure engagement, is so maintained for a predetermined period of time, and is then automatically returned out of pressure engagement and out of registration.

My invention also provides in a pressing machine in which the bed moves away from the operator and into registration and into pressure engagement with the stationary head, means for giving the bed a rapid start toward registration followed by movement at a substantially uniform rate until the bed reaches registering position.

Another object of the invention is to provide a hollow pressing bed with improved means for draining the condensate therefrom including the utilization of the fluid exhaust from a fluid pressure actuated power means for creating an evacuating effect in the pressing bed. The arrangement also includes improved means for discharging and evaporating the condensate from the pressing bed.

My invention also comprises novel arrangements of control members for the power means to bring about the automatic operation heretofore mentioned.

Further objects and advantages of my improved pressing machine will be apparent to those skilled in the art from the accompanying description together with the drawings and the essential features of which are summarized in the claims.

In the drawings Fig. 1 is a side elevation of an embodiment of my improved pressing machine with the bed in its forward or loading position, parts being broken away to show the internal construction; Fig. 2 is a view similar to Fig. 1 showing the bed in pressing position, the parts being broken away to show the internal construction; Fig. 3 is a front elevation with parts of the front panel broken away to more clearly show the construction; Fig. 4 is a section along the line 4—4 of Fig. 1; Fig. 5 is a plan view of part of the control mechanism with the valves shown in cross section; Fig. 6 is a sectional view of the valve construction taken on the line 6—6 of Fig. 5 and including a diagrammatical view of other portions of the control mechanism; Figs. 7, 8, 9 and 10 are detail sections taken along similarly numbered lines of Fig. 5; Fig. 11 is a detail view showing the adjusting knob for the timing mechanism located on the side panel of the press; Fig. 12 is a detail section taken along the line 12—12 of Fig. 5 showing the timer operated servo mechanism and its relation to the valve mechanism; Fig. 13 is a section along the line 13—13 of Fig. 6 showing the timer tank and connections; Fig. 14 is a section along the line 14—14 of Fig. 2 showing the internal construction of the pressing bed; while Fig. 15 is a general diagrammatic view of the control mechanism.

My improved pressing machine disclosed herein contains many novel features not heretofore shown or described to the best of my knowledge but in certain other respects it is a commercial machine embodying features previously illustrated, described and claimed in several copending applications illustrating pressing machines which may differ in some respects from the machine illustrated in my present application. These features will be found in the copending application of John P. Singiser, Serial No. 683,322, filed August 2, 1933, the application of Albert Matthews, Serial No. 679,905, filed July 11, 1933 and my copending applications Serial Nos. 683,814; 683,815; 683,816, all filed August 5, 1933, and Serial No. 686,563, filed August 24, 1933.

The press illustrated herewith comprises in general a frame supporting a fixed pressing head and a carriage movable on the frame into and out of registration with the pressing head, there being a bed supported for vertical movement in the carriage for relative ironing movement between the head and bed when the members are in registration. A vertically disposed piston motor is mounted on the frame beneath the path of travel of the bed supporting carriage. This motor has one connection adapted during the early portion of the power stroke to move the bed and carriage into registering position and to hold it

there while the piston motor during the latter part of its travel raises the bed from the carriage into pressing engagement with the head. The pressing bed is hollow and provided with a drainage connection and means is provided for utilizing the exhaust from the piston motor to create an evacuating effect in the hollow bed and to discharge the condensate into a heated receptacle where the condensate is evaporated into the atmosphere. The control mechanism is arranged so that the operator actuates a manual control to initiate the flow of fluid to the piston motor whereby the bed movement into registration is started. Upon reaching registering position a mechanical interlock actuates a control valve for moving the bed into pressure engagement. The initiation of a pressing operation starts the running period of a timing mechanism and at the end of a predetermined time this mechanism reverses the position of the control valves so as to permit the bed to move out of pressing engagement and out of registration, which completes the cycle of the pressing operation. A finger guard is arranged to automatically return the pressing bed to its forward or open position in case the operator's hands are carelessly left lying upon the bed as it moves toward pressing position. The operator may open the press at any time regardless of the automatic controls. The control valves and connecting passageways are conveniently arranged in a very compact construction on the upper portion of the press.

In the pressing machine illustrated side frames 21 and 22 support a pressing head 23 which may be heated by any suitable means known to the art. A pressing bed 24 is supported in a carriage 25 for movement into and out of registering position beneath the head, the arrangement shown comprising sets of wheels 26 and 27 on the carriage which travel along rails 28 and 29 supported by the side frame members. The set of wheels 26 is grooved to coact with the V-shaped top of rail 28 while the set of wheels 27 have a flat tread, the purpose of this construction being to properly retain the carriage on the rails while avoiding any binding which might occur if both sets of wheels were grooved. Flanges 30 overhang the sets of wheels to retain the carriage in position and to prevent pieces of work from coming in contact with the wheels.

The arrangement by which the bed is given a vertical movement relative to the carriage is best seen in Fig. 2 where the carriage is shown with an upwardly extending cylindrical projection 31 and the bed has a downwardly extending sleeve 32 adapted to slide on the extension 31. A pressure pin 33 fits within the bore of the cylindrical extension 31 in position to be engaged by a boss 57 connected with the power means as the bed moves into registration. The parts are preferably so arranged that the upper end of boss 57 is bevelled as shown in Fig. 15 and lies in the path of travel of the lower end of pressure pin 33 as the carriage moves into registering position so that the boss cams the pin upward with its upper end contacting or slightly raising the bed so that pressure upon the lower end of the pin will immediately raise the bed from the carriage. Thus the bed moves substantially continuously from its horizontal path into its vertical path. A transversely extending pin 34 holds the pressure pin 33 within cylinder 31 when the carriage is out of registration, this pin being adapted to rest upon the upper end of the cylindrical extension 31. To prevent turning of the bed upon its pedestal a positioning pin 35 (see Fig. 3) extends downwardly from the bed into a bore 36 in the carriage.

This arrangement of the pressure pin is an improvement over former constructions in which a stem projected downwardly from the bed into an upwardly extending sleeve. My improved construction provides a large diameter support for the pressing bed with a small diameter pressure pin. Also the sliding joint between the member connected with the bed and the member connected with the supporting carriage is near the carriage and beneath the work supporting tray where grease can not reach the garments being pressed.

The bed construction is similar to that illustrated, described and claimed in my copending application Ser. No. 683,814, filed August 5, 1933. Its construction may be understood from Figs. 2 and 14 in which 37 indicates ribs extending longitudinally of the bed and supporting a spring padding 38 and a cover cloth 39 arranged in such a manner as to give a pervious covering. Drainage passageways 40 in the ribs are provided together with a sloping bottom 41 which serves to drain condensate from the interior of the bed to a drainage conduit 42 which leads to a drainage connection 43 bolted on the sleeve 32 and extending rearwardly from the bed in position to drain into a receptacle 44 located upon the frame. This receptacle is provided with heating means, as, for instance, a steam jacket 45 supplied with steam through conduit 46 and drained through conduit 47. The receptacle has an opening at 48 for discharging the vapor from the condensate into the atmosphere or for otherwise disposing of the same as may be desired. The drainage connection 43 is arranged somewhat in the form of an ejector 49 at its outlet end through which the fluid exhaust from the press operating cylinder is adapted to pass, as will be more fully described hereafter. The outlet 50 from the drainage connection 43 is normally closed by a flapper valve 51 which is provided with a spring to maintain it in its closed position. This valve has a downwardly extending arm 52 which is arranged to engage a pin 53 on the receptacle 44 when the bed reaches the rearward limit of its travel and this automatically establishes communication between the drainage connection and the evaporating receptacle.

The power means for operating the press comprises a vertically arranged cylinder 54 supported on the side frames in a position beneath the path of travel of the bed supporting carriage. The cylinder is fitted with a suitable piston 54' and a piston rod 55. Upon the piston rod is mounted a yoke or saddle 56 which has a boss 57 into the bore of which a projecting portion 58 of piston rod 55 extends. The yoke is maintained in proper position by positioning pins 59 which extend downwardly therefrom into suitable bores in the cover plate of cylinder 54. The parts are so arranged that the boss 57 registers with the pressure pin 33 when the bed is in pressing position beneath the head and the vertical movement of the piston rod and the yoke boss 57 raises the pressure pin and causes pressure engagement between the bed and head. The end of the boss is provided with a rounded wearing plate 60 and the pressure pin may likewise have a wearing plate 33' if desired. The yoke 56 for purposes of strength may conveniently be of the chan-

nel shape best seen in Fig. 4 and provided on its lower side with bearing blocks 61 to which is pivotally connected a cam lever 62. This cam lever is pivotally mounted in the frame at 63 and at its opposite end is provided with cam surfaces including an active portion 64 and a dwell portion 65 with a heel 66 where these portions meet. The cam lever exerts pressure upon a second lever 67 pivotally mounted in the frame at 68 and provided at its lower end with a follower 69 which travels along the cam surfaces of the cam lever. The upper end of lever 67 is pivotally connected to a link 70 which in turn is pivotally connected to the bed carriage. A spring 71 is connected in tension between the lower portions of levers 62 and 67 and tends to rotate these levers about their pivots. It will be apparent from an inspection of the drawings that movement of the yoke 56 upwardly when the parts are in the position of Fig. 1 will cause the cam surface 64 to press downwardly upon follower 69 and thus rotate lever 67 in a counterclockwise direction until the follower 69 passes the heel 66 of the cam. The parts are so arranged that at this time the pressure pin 33 registers with the boss 57 and further movement of the piston rod upwardly causes ironing engagement between the pressing members. During this latter portion of the power stroke the follower 69 travels along the dwell portion 65 of the cam lever and thus insures that the parts remain in registration during the movement of the bed into and out of pressure engagement with the head. Upon release of fluid pressure beneath piston 54' the piston and bed move downwardly due to the weight of the parts and the cam lever 62 moves in counterclockwise direction until follower 69 passes the heel of the cam and thereafter spring 71 rotates lever 67 in a clockwise direction, thus returning the bed to its forward position.

It is desirable to snub or cushion the forward and rearward movement of the bed including its carriage and associated parts and this is done by means of a double acting snubber 72 which may be of any suitable style but preferably is of a type which is more clearly shown and described in the copending application of John P. Singiser, Serial No. 642,053, filed November 10, 1932. It is sufficient to state here that the piston heads 73 entrap a fluid in opposite ends of the snubber cylinder and the pistons are actuated through a rack and pinion couple 74 which in turn meshes with a segment 75 which is connected with the lever arm 67 by means of arm 76 and link 77.

The control valves for the piston motor are preferably arranged en bloc, indicated in general at 78. The construction is best seen in Figs. 5 and 6 where the valve block is shown comprising an upper portion 79 containing the valve parts and a lower portion 80 supported by the frame and containing passageways connecting the valves and the various parts to be operated thereby. The arrangement comprises in general four valves 81, 82, 83 and 84 arranged with their valve stems horizontal and ending adjacent an operating shaft 85 supported in bearings 86 upon which are mounted various cams adapted to contact the valve stems. 81 and 83 are inlet valves and 84 the exhaust valve for fluid motor 54—54', while 82 is a pilot valve for release mechanism seen at the right in Fig. 5. These valves are normally closed by suitable springs as shown. The combination cam 87—88 and the cam 89 control the inlet valves 81 and 83 respectively, and the cam 90 controls the exhaust valve 84 of fluid pressure motor. The main fluid pressure supply is at 91 and enters the valve block member 80 through a filter 92 (see Fig. 12) and thence travels forwardly through passageway 93, then laterally through passageways 94 and 95, thence upwardly through needle valves 96 and 97 into chambers 98 and 99 leading to valves 81 and 83 respectively. Chambers 81', 83' and 84', which are the outlet chambers of the respectively numbered valves, are connected by a common chamber 100 which communicates by way of conduit 101 with the piston motor. Cam 89, which controls the primary inlet to the main motor, is actuated through link 102 which is connected with a manually operated lever 103 which is freely rotatable upon a shaft 104 which in turn is mounted in bearings 105 in the side frames. The lever 103 is held in position on the shaft by the collars 106. The cam 88, which controls the secondary inlet to the main motor, is actuated by interlocking mechanism automatically upon the bed reaching registering position. This mechanism comprises an arm 107 adapted to rotate cam 88 which is freely rotatable upon shaft 85, arm 107 being connected by link 108, bell crank 109 and link 110 with a bell crank 111 pivotally mounted on one of the side frames and having a follower 112 on one arm of the bell crank which coacts with a cam bar 113 mounted on the bed carriage. A spring 114 is connected between bell crank 109 and a stationary portion of the frame to maintain contact between the follower 112 and the cam bar 113. When the bed reacnes registering position the follower 112 rises along a curved portion 115 on the cam bar which moves bell crank 111 in a counterclockwise direction, thus moving arm 107 in a clockwise direction and causing projection 88' of cam 88 to actuate the stem of valve 81.

Cam 88 is freely rotatable upon shaft 85 and has a projection 149 which overlies a projection 150 on cam 87 which is pinned to shaft 85. When shaft 85 is rotated clockwise (see Fig. 7) by operation of manual control 103, cam 87 moves clockwise and projection 150 moves out of engagement with projection 149. When the interlock mechanism rotates arm 107 and cam 88 in a clockwise direction, lug 149 again comes substantially in contact with lug 150. Thus when shaft 85 is rotated counterclockwise by the release mechanism, described below, lug 150 engages lug 149 and rotates cam 88 counterclockwise and permits valve 81 to be closed by its spring.

The operation of this portion of the control mechanism is as follows:—

The operator actuates the manual control lever 103 which moves shaft 85, including cams 89 and 90 pinned thereto, in a clockwise direction which closes exhaust valve 84 and opens inlet valve 83, thus permitting flow of fluid pressure to the piston motor through conduit 91, passageway 93, 95, needle valve 97, chamber 99, valve 83, chamber 83', chamber 100, and conduit 101. This will cause the early portion of the power stroke of the piston motor to take place, which will move the bed toward registering position, as above described. To hasten the start of this movement a storage tank 116 is connected by conduit 117 with chamber 99 between the restricted orifice, represented by needle valve 97, and the primary inlet valve 83. Sufficient fluid pressure is stored in this tank to cause a rapid start of the bed toward registering position, or, say, a much more rapid movement than is possible if the flow through needle valve 97 only is relied upon.

Upon the bed coming into registering position, follower 112 of the interlocking mechanism moves upward along the cam surface 115 with the resultant actuation of cam 88 as above described, which opens valve 81 and admits final pressure to the piston motor through conduit 91, passageways 93 and 94, needle valve 96, chamber 98, valve 81, chamber 81', chamber 100 and conduit 101. Ordinarily needle valve 96 will be open a much greater amount than needle valve 97 and preferably supplies substantially line pressure.

The control mechanism just described imparts a very satisfactory movement to the bed. The stored fluid in tank 116 insures rapid initiation of the movement toward registering position when the operator actuates the control lever. The inertia of the bed and its associated parts having been overcome, the supply of fluid to the power means is restricted, as by needle valve 97 or other suitable means, to maintain a uniform velocity until the bed has reached registering position or even slightly beyond that point. Thereafter the interlock mechanism admits substantially full line pressure to the power cylinder and the bed is quickly and firmly carried into ironing engagement with the head. During the early portion of the movement of the bed toward registration it is substantially unopposed by the snubber 72 but toward the end of this movement the fluid trapped in the right hand end of the snubber cylinder (as seen in Fig. 1) exerts a progressively increasing retarding effect upon the bed in opposition to the force exerted by the power means. These opposing forces may be so adjusted as to give a very smooth acting press. The bed moves rapidly to registering position but is yieldingly retarded upon arriving there and, without stopping, is started toward pressing engagement with the head by the camming action between pressure pin 33 and the bevelled plate 60 on boss 57 as previously described. Thereafter heavy pressure admitted through valve 81 rapidly carries the bed into contact with the head.

Various mechanisms are possible for moving the cam shaft 85 in a direction to reverse the inlet and outlet valves for the piston motor to open the press. However, I prefer to use a servo-motor mechanism represented by release cylinder 118 which is provided with a suitable piston 119 and piston rod 120 upon which is mounted a plate 121 adapted to engage a flanged collar 122 pinned to shaft 85. This flanged collar is clearly shown in full lines Fig. 10 in its unoperated position and in broken lines in its operated position as it lies after the manual control 103 has been actuated. It will be evident from Fig. 10 that a stroke of the piston in release cylinder 118 will rotate the flanged collar and hence shaft 85 in a counterclockwise direction. To operate the release mechanism, pilot valve 82 is provided. The inlet of fluid pressure to valve 82 is by way of passageway 123 extending upwardly from passageway 93, thence through valve 82 through the outlet chamber 82' and thence by way of conduit 124 to the release cylinder. Valve 82 is actuated by means of a cam 125 which is freely rotatable upon shaft 85 and held in position by collars 126. The actuator for cam 125 is a finger guard 127 which swings on arms 128, which are pinned to shaft 104 previously mentioned. Another arm 129 pinned to shaft 104 is connected by a link 130 with the cam 125 in such a manner that movement of guard 127 rearwardly actuates cam 125 to open valve 82.

While the press could be regularly operated in the manner just described, that is, operated in a closing direction by the manual control lever and in an opening direction by the finger guard, I prefer to open the press automatically by timing mechanism after it has been closed a predetermined time. Such an arrangement has advantages in that it prevents overheating and damage to silks and woolens and furthermore, it prevents the operator leaving the press sealed with subsequent damage to the padding. In general, the timing mechanism comprises a reservoir which is filled through a restricted opening through which fluid is admitted in timed relation to the closing of the press. By adjustment of the restricted opening, the time of filling the reservoir may be varied as desired. When the pressure in the reservoir builds up to a predetermined point it actuates a servo-motor mechanism which opens the pilot valve 82 and causes the actuation of the release mechanism in the manner described in connection with the finger guard.

The timing reservoir is shown at 131 connected by conduit 132 with chamber 100. Conduit 132 has a double connection with the reservoir 131, one connection being by way of a check valve 133 which is openable only in the direction shown by the arrow, that is, to exhaust reservoir 131, the other branch 134 leading through needle valve 135 for the purpose of filling the reservoir. Valve 135 is adjusted by means of a knob 136 which extends beyond one of the side panels of the machine and is provided with an indicating dial 137 so that it may be accurately adjusted. The outlet conduit from the timing reservoir is 138 which leads to servo-motor mechanism 139, best seen in Fig. 12 and illustrated as comprising a diaphragm 140 adapted to act upon a plunger 141 which is spring pressed toward the diaphragm by spring 142 adjustable by means of screw 143. An actuator 144 rides in a slot in the plunger and has a downward extension 145 which rests between cam 125 and the stem of valve 82. It will thus be apparent that upon admission of fluid pressure to the piston motor such pressure will pass through chamber 100 and thence by way of conduit 132 to the timing mechanism where it will flow through needle valve 135 and gradually fill reservoir 131. Upon the building up of sufficient pressure in the reservoir and conduit 138 to preponderate over spring 142, the servo-motor 139 will be actuated to open pilot valve 82 and actuate the release cylinder, whereupon the bed will move to its forward or open position as previously described.

When the valves are actuated in the press opening direction the exhaust fluid passes by way of exhaust conduit 146 through the muffler 147, the outlet end 148 of which is arranged in spaced relation from the condensate evaporator 44. When the carriage moves the bed into registering position the ejector portion 49 of the condensate drainage connection 43 lies between the exhaust muffler 147 and the drainage receptacle 44, as shown in Fig. 2, with the flapper valve 51 automatically opened. When the bed moves into pressure engagement with the head, ejector 49 is moved into engagement with the outlet 148 of the exhaust muffler and the exhaust fluid passing through the ejector 49 with great velocity causes a suction through the drainage connection 43 and the pervious cover of the bed, thus creating a suction through the cover and a more or less complete evacuation of condensate entrapped in the hollow bed. This condensate is evaporated

in receptacle 44 in the manner previously described.

What I claim is:

1. In a press of the class described, a pair of coacting pressing members relatively movable laterally into and out of registration and into and out of pressure engagement, fluid pressure operated power means for causing said movement into registration, a supply of fluid under pressure therefor, and control means for supplying fluid to said power means at a relatively high rate to initiate said movement toward registration, and thereafter at a relatively low rate to maintain substantially uniform velocity of the member moving into registering position.

2. In a press of the class described, a pair of coacting pressing members relatively movable laterally into and out of registration and into and out of pressure engagement, fluid pressure operated power means for causing said movement into registration, a supply of fluid under pressure therefor including a storage tank, means for utilizing the contents of said tank in said power means to initiate said movement toward registration, and means for thereafter supplying fluid to said power means in an amount sufficient to maintain substantially uniform velocity of the member moving into registering position.

3. In a press of the class described, a pair of coacting pressing members relatively movable laterally into and out of registration and into and out of pressure engagement, fluid pressure operated power means for causing said movements, a supply of fluid under pressure therefor, and control means for admitting said fluid to said power means at a high rate during the initial portion of said movement into registration, at a restricted rate during the latter portion of said movement into registration, and at a high rate during the movement into pressure engagement.

4. In a press of the class described, the combination of a head, a bed movable laterally into and out of registration therewith, fluid pressure actuated power means, connections between said bed and said power means for moving said bed into registration, a fluid storage reservoir of a capacity adapted to cause movement of said power means corresponding to bed movement short of registration, a conduit between said reservoir and said power means, a control valve in said conduit, a source of fluid supply for said reservoir, and another fluid supply for said power means for completing bed registration.

5. In a press of the class described, the combination of a head, a bed movable into and out of registration and into and out of pressure engagement therewith, fluid pressure actuated power means having a continuous stroke, connections between said bed and said power means arranged so that a first part of said stroke causes bed movement into registration and a later part of said stroke causes bed movement into pressure engagement, a fluid storage reservoir of a capacity adapted to cause the initiation of the first part of said stroke, fluid supply means independent of said reservoir for causing the remainder of said stroke, conduit connections between said power means and said reservoir and supply means, and one valve controlling flow from said reservoir and supply means through said conduit to said motor.

6. In a press of the class described, the combination of a head, a bed movable into and out of registration and into and out of pressure engagement therewith, fluid pressure actuated power means having a continuous movement, connections between said bed and said power means arranged so that the early part of said movement causes bed movement into registration and the later part of said movement causes bed movement into pressure engagement, a fluid storage reservoir of a capacity adapted to cause the first portion only of the into-registration-producing movement of said power means, control means therefor adapted to establish communication between said power means and said storage reservoir, means for completing the into-registration movement of said bed, and a second control means adapted to establish communication between a source of pressure fluid supply and said power means for causing the later portion of said movement.

7. In a press of the class described, the combination of a head, a bed movable laterally into and out of registration therewith, fluid pressure actuated power means, connections between said bed and said power means for moving said bed into registration, a fluid supply line communicating with said power means, a restricted passage in said line, a control valve in said line on the power means side of said restriction, and a storage reservoir communicating with said line between said restricted passage and said valve, the fluid capacity of said reservoir at supply pressure being insufficient to cause bed registration.

8. In a press of the class described, the combination of a head, a bed movable into and out of registration and into and out of pressure engagement therewith, fluid pressure actuated means for causing said movements, a fluid pressure supply line communicating with said means, a restricted passage in said line, a control valve in said line, a storage reservoir communication with said line between said restricted passage and said valve, said reservoir having a capacity only sufficient to initiate the actuation of said means, a second and less restricted supply line communicating with said means, and a second control valve in said second line.

9. The combination of claim 8, [illegible] means acting automatically after said bed [illegible] registering position for actuating said second control valve.

10. In a press of the class described, the combination of a frame, a stationary pressing head carried thereby, a carriage movable substantially horizontally into and out of registration with the head, a pressing bed mounted on the carriage for vertical movement relative thereto, a lever pivoted to the frame and connected with the carriage for moving it horizontally, a fluid pressure actuated piston motor having one connection adapted to raise the bed above the carriage when the carriage is in registering position, a second lever pivotally supported by the frame, said motor having a second connection adapted to rotate the second lever, and said second lever having an operative connection with the first lever.

11. In a press of the class described, the combination of a frame, a stationary pressing head carried thereby, a carriage movable substantially horizontally into and out of registration with the head, a pressing bed mounted on the carriage for vertical movement relative thereto, a lever pivoted to the frame and connected with the carriage for moving it horizontally, a fluid pressure actuated piston motor having one connection adapted during the latter part of the piston stroke to raise the bed above the carriage when the car-

riage is in registering position, a second lever pivotally supported by the frame, said motor having a second connection adapted to rotate the second lever, and said second lever having an operative connection with the first lever adapted to move the carriage into registering position during the first part of the piston stroke and to hold the carriage in registration during the latter part of the piston stroke.

12. In a press of the class described the combination of a pressing head, a pressing bed movable into registration and then into pressure engagement therewith, power means having a connection adapted to engage said bed in registering position only to cause said pressure engagement, a lever connected with the bed and pivoted to the frame for moving the bed into registering position, and a second lever operable by said power means and arranged to move the first lever and thereby to move said bed into registering position, there being means on the two levers for holding said bed in registering position during bed movement into and out of pressure engagement with the head.

13. In a press of the class described, the combination of a fixed pressing head, a carriage movable into and out of registration therewith, a bed movable vertically in said carriage and into pressing engagement with said head when said bed and head register, a pressure pin extending downwardly from said bed, power means adapted to raise said pin to move said bed upwardly when said carriage is in registering position, and said power means being constructed and arranged to extend into the path of travel of said pressure pin to cam said pin upwardly as the carriage moves into registering position.

14. In a press of the class described, the combination of a fixed pressing head, a carriage movable into and out of registration therewith, a bed movable vertically in said carriage and into pressing engagement with said head, a pressure pin extending downwardly from said bed, power means having one connection for moving said carriage into registering position and having a second connection adapted to move said pressure pin vertically, said second connection being constructed and arranged to move during an early portion of its movement into the path of travel of said pressure pin to cam said pin upwardly as the carriage moves into registering position and further movement of said second connection being adapted to cause pressure engagement of said bed and head.

15. In a press of the class described, a pressing element, a supporting carriage for moving said element horizontally, and means permitting relative vertical movement between said element and carriage comprising interfitting sleeves, one associated with the element and the other associated with the carriage, the outer sleeve being associated with the pressing element.

16. In a press of the class described, the combination of a fixed head, a carriage movable into and out of registration therewith, a bed on said carriage movable into and out of pressure engagement with said head when in registration therewith, one fluid pressure actuated power means having an operative connection with said carriage for moving said carriage into registering position and for holding it there and said power means having an operative connection with said bed in registering position for thereafter moving said bed into pressure engagement with the head, and a snubber member connected with said power means and constructed and arranged to progressively retard said carriage movement into registering position.

17. In a press of the class described, the combination of a frame, a pair of coacting pressing members one of which is movable relative to the other, means for moving said movable member, said movable member carrying means for creating a suction in said member, said suction creating means being operable by a flow of fluid therethrough, and means on the frame for causing a flow of fluid through said suction creating means when the movable member is in pressing position.

18. In a press of the class described, a pair of coacting pressing members one of which is movable relative to the other, said movable member having rigidly secured thereto a drainage conduit having an outlet adapted to have created a suction therein by a flow of fluid through said outlet, fluid pressure actuated power means for moving said movable member, an exhaust outlet from said power means secured to the frame, and both of said outlets being arranged to coact upon movement of the movable member into pressing position, whereby exhaust fluid from said power means will flow through said drainage conduit outlet.

19. In a press of the class described, a pressing head, a carriage movable in a substantially horizontal direction, a pressing bed mounted on said carriage and movable thereby into and out of registration with the head, said bed being arranged for vertical movement relative to the carriage and into pressure engagement with the head, means on said carriage forming a condensate drainage chamber communicating with said bed, said chamber having an outlet adapted to have a suction created therein by a flow of fluid through said outlet, fluid pressure actuated power means for causing said bed movement, an exhaust outlet from said power means secured to the frame, and both of said outlets being arranged to coact upon movement of the bed into pressure engagement, whereby exhaust fluid from said power means will flow through said chamber outlet.

20. In a press of the class described, the combination of a frame, a pair of coacting pressing members one of which is movable relative to the other, fluid pressure actuated power means for moving said movable member, said movable member having rigidly secured thereto a drainage conduit terminating in an ejector, an exhaust conduit for the power means secured to the frame, a condensate receptacle on the frame, and said conduits and receptacle being so constructed and arranged that movement of said movable member into pressing position moves said ejector into position to receive fluid from said exhaust conduit and to exhaust the contents of said drainage conduit into said receptacle.

21. In a press of the class described, the combination of a pair of coacting pressing members, one of which is movable into and out of registration with the other and movable into and out of pressing engagement therewith, one fluid pressure actuated motor having a single power stroke and operative connections with said movable member for causing both of said movements, a source of fluid pressure supply for said motor; and control means for said supply, comprising a shaft, two inlet valves and an exhaust valve controlling flow and exhaust of fluid for operating said motor and mounted with their stems adjacent said shaft, means restricting fluid flow

through a first of said two inlet valves, cams on said shaft adapted upon shaft movement to operate said valves, and said parts being so constructed and arranged that movement of said shaft in a first direction is adapted to close the exhaust valve and to open said first inlet valve and movement of said shaft in a second direction is adapted to open the exhaust valve and to close both inlet valves, manually operable means for moving said shaft in said first direction to initiate said into-registration movement, and means for opening the second inlet valve automatically upon the movable member reaching registering position, whereby to supply additional fluid to said motor for said pressing operation.

22. The combination of claim 21, including a fluid pressure actuated release mechanism having an operative connection with said shaft and adapted when actuated to move said shaft in said second direction, and means for supplying fluid under pressure to said mechanism to actuate it.

23. The combination of claim 21, including a fluid pressure actuated release mechanism having an operative connection for moving said shaft in said second direction, a fluid pressure supply for said mechanism, a release pilot valve for controlling said supply, and manual means for actuating said pilot valve.

24. The combination of claim 21, including a fluid pressure actuated release mechanism having an operative connection for moving said shaft in said second direction, a fluid pressure supply for said mechanism, a release pilot valve for controlling said supply, and means acting in timed relation to the closing of the press for actuating said pilot valve.

25. In a press of the class described, the combination of a pair of coacting pressing members, one of which is movable laterally into registration with the other and then movable into pressure engagement therewith, a fluid pressure actuated motor having operative connections for causing both of said movements, a source of fluid pressure supply for actuating said motor, first and second inlet valves in parallel connection with said supply for controlling the flow of fluid to said motor, means restricting fluid flow through said first inlet valve, means for actuating said first inlet valve to cause movement of the movable member into registration, and means acting automatically to open said second inlet valve upon the movable member reaching registration position.

26. In a press of the class described, a pair of coacting pressing elements, a supporting carriage for moving one of said elements beneath the other, interfitting vertically extending sleeves, the outer one rigidly connected with the element and the inner one associated with the carriage, and a pressure pin guided within the inner sleeve for movement longitudinally of the sleeves, said pin being adapted to form an operative connection between said movable pressing element and a vertically moving power member acting on the pin to produce engagement of the pressing elements.

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