Dec. 29, 1953 W. GOLDMAN 2,663,954

STEAM PRESSING MACHINE

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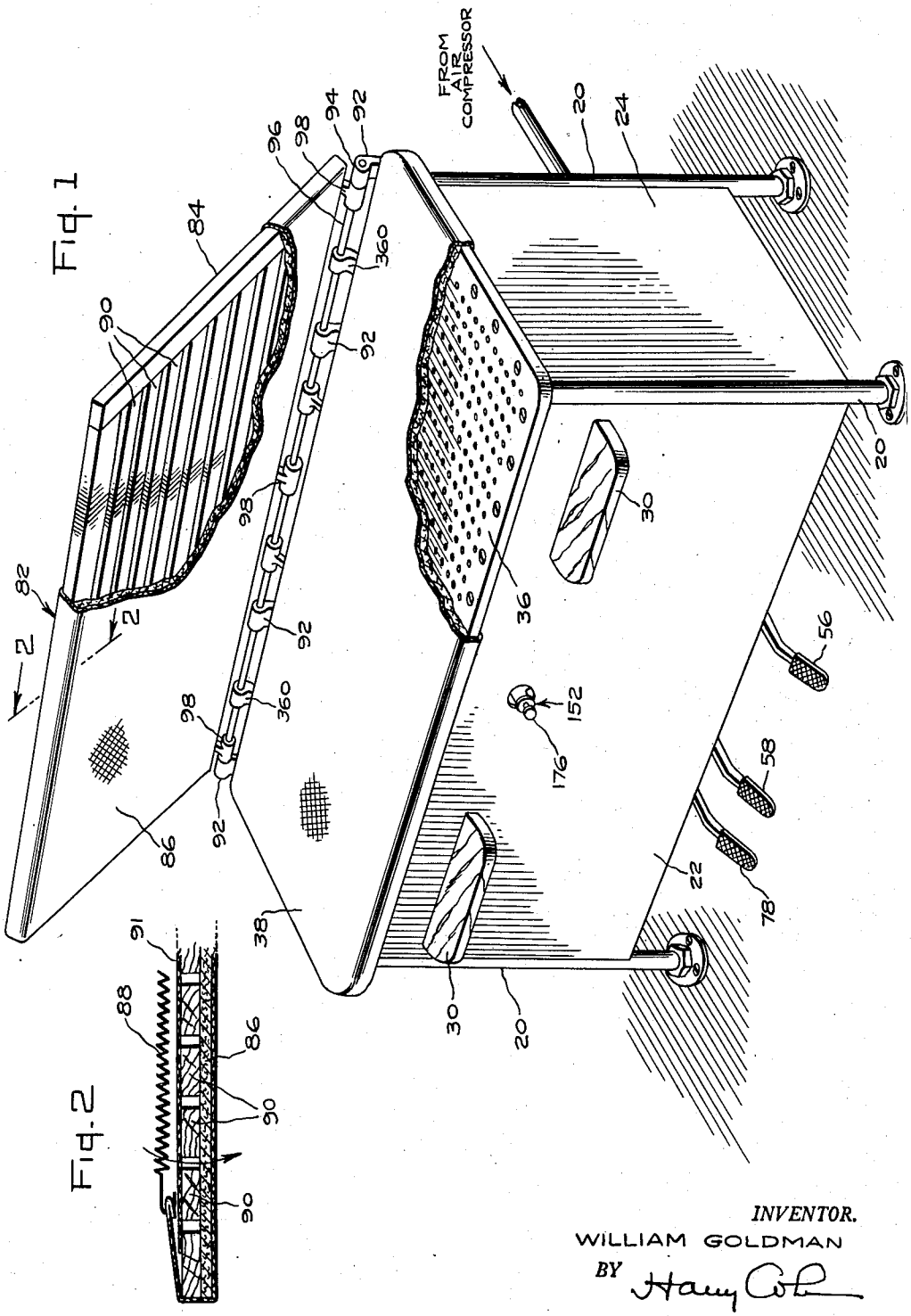


Fig. 1

Fig. 2

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Fig. 3

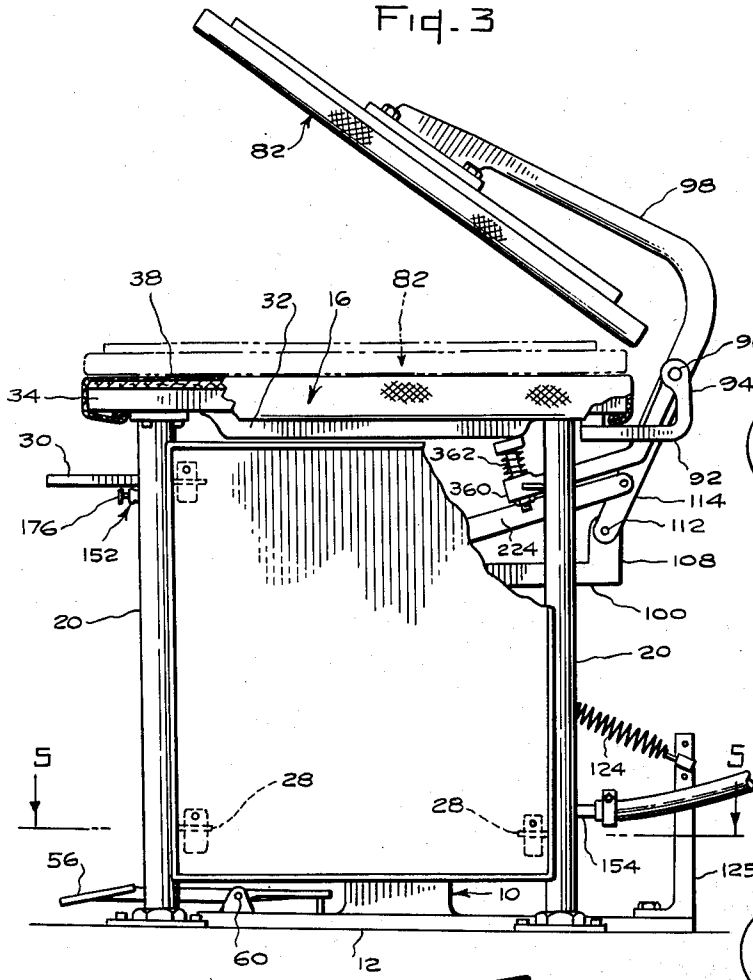


Fig. 5

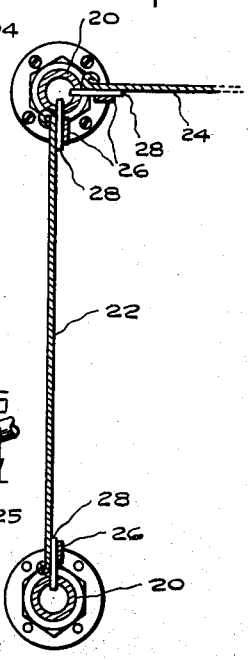


Fig. 4

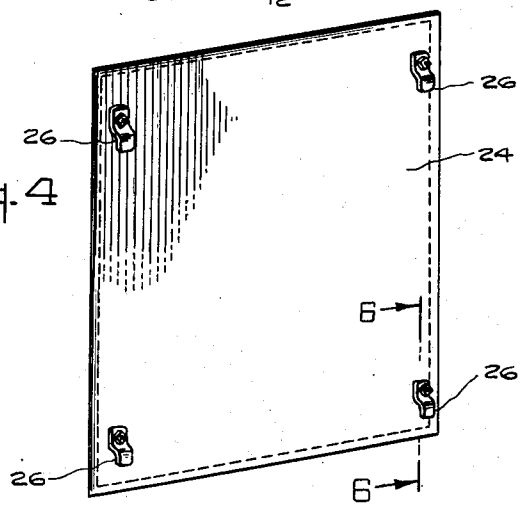
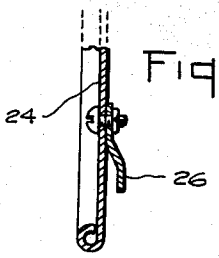


Fig. 6



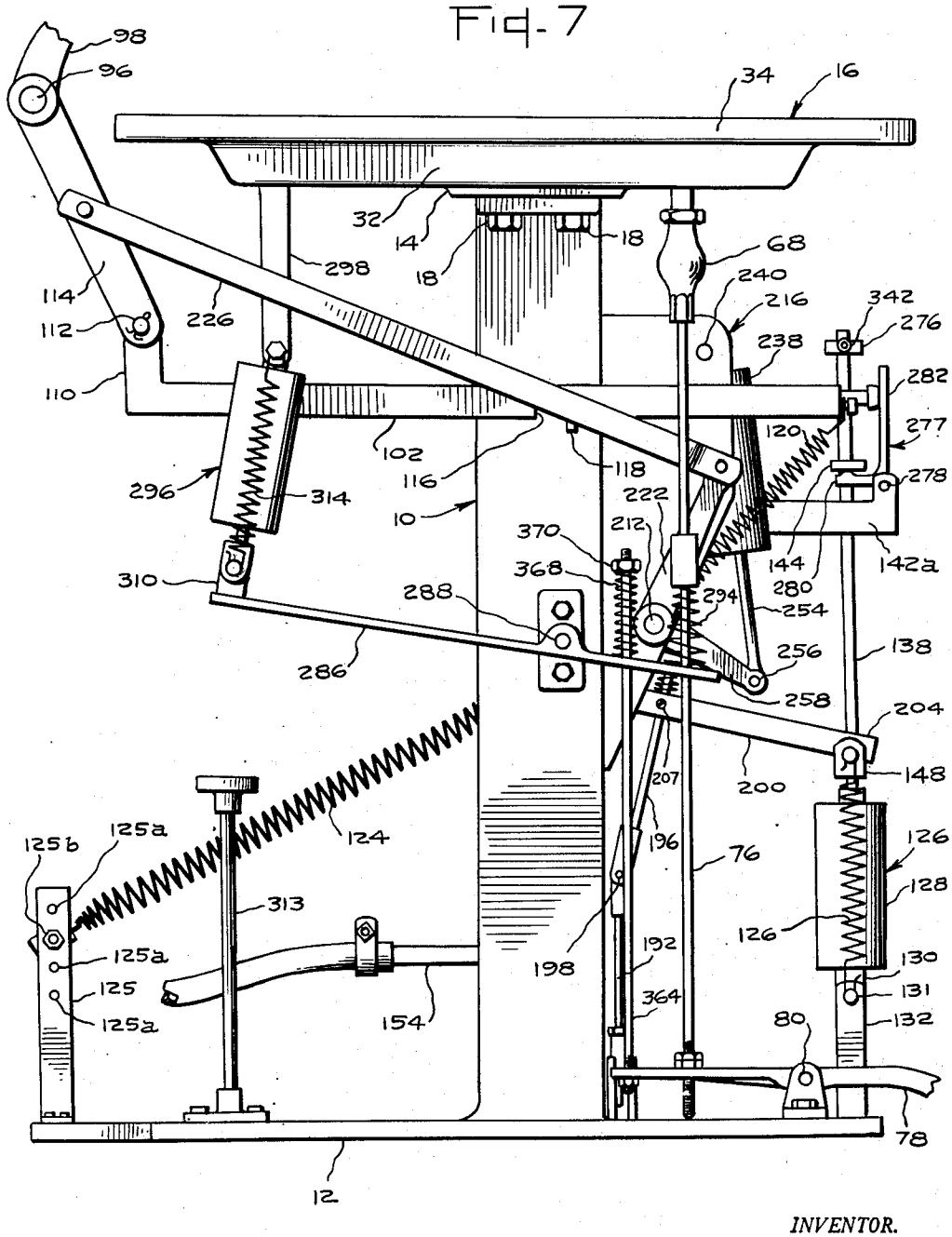
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Fig. 7



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Fig. 8

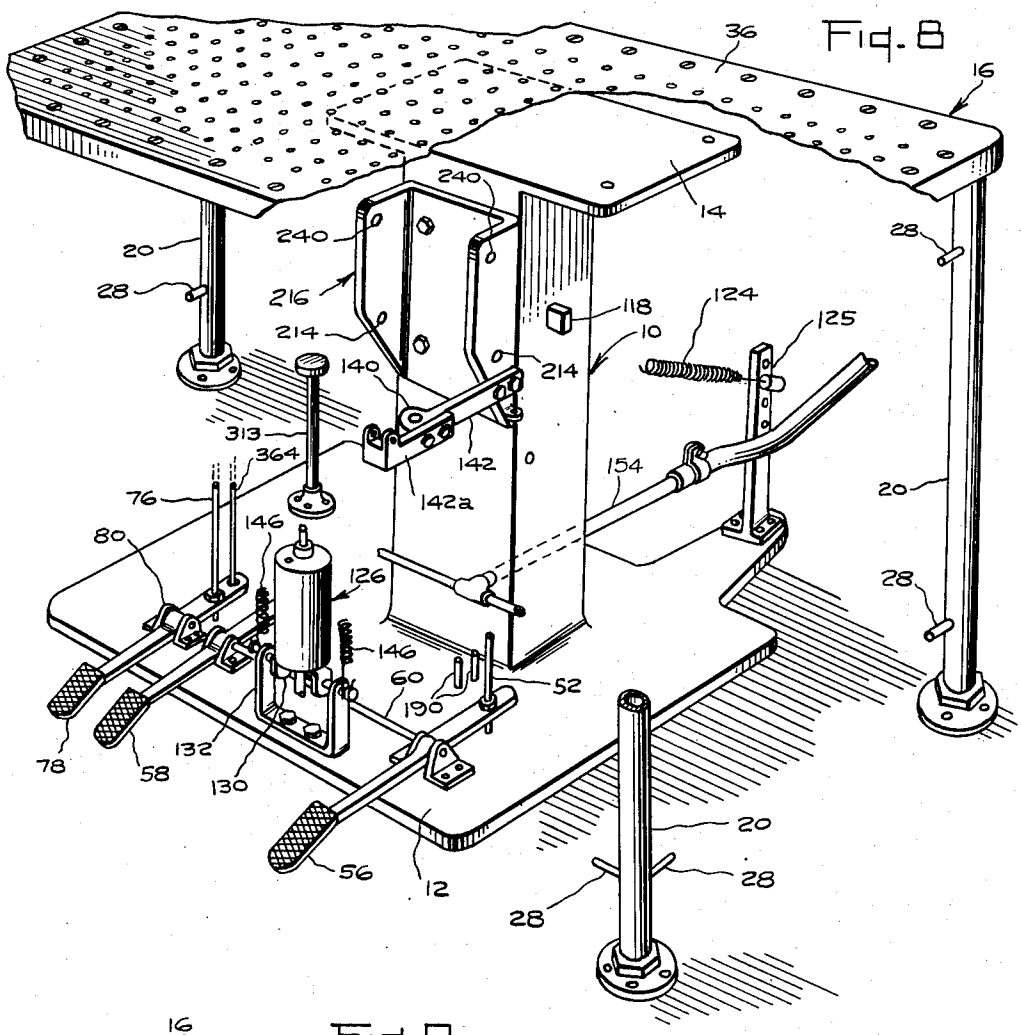


Fig. 9

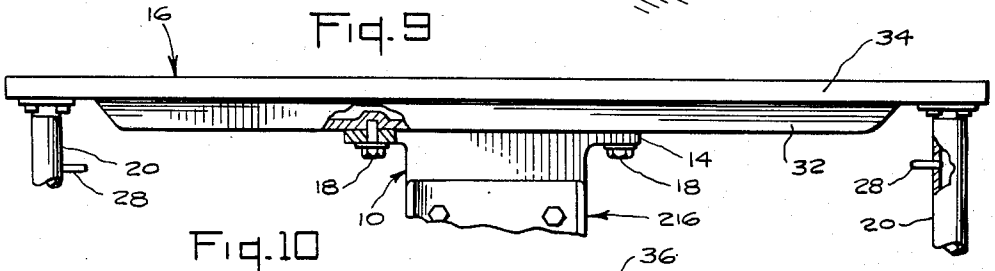
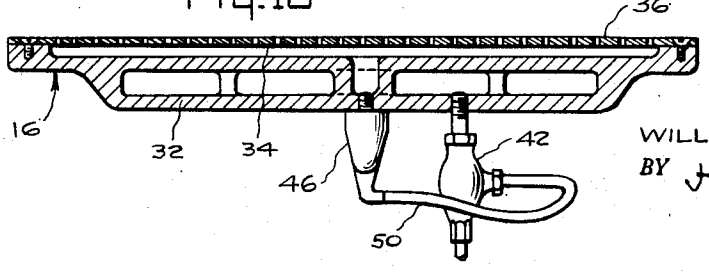


Fig. 10



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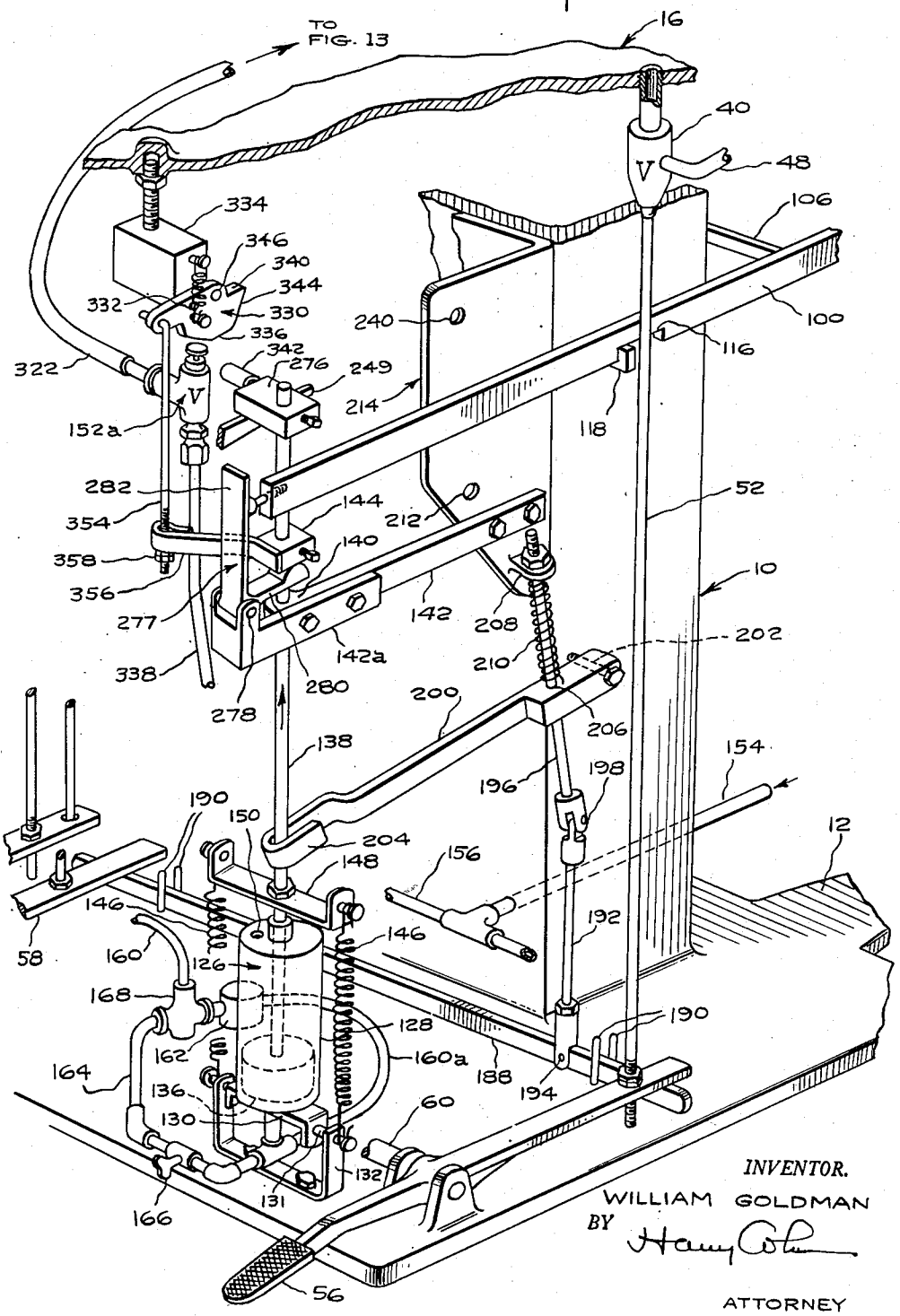
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Fig. 11

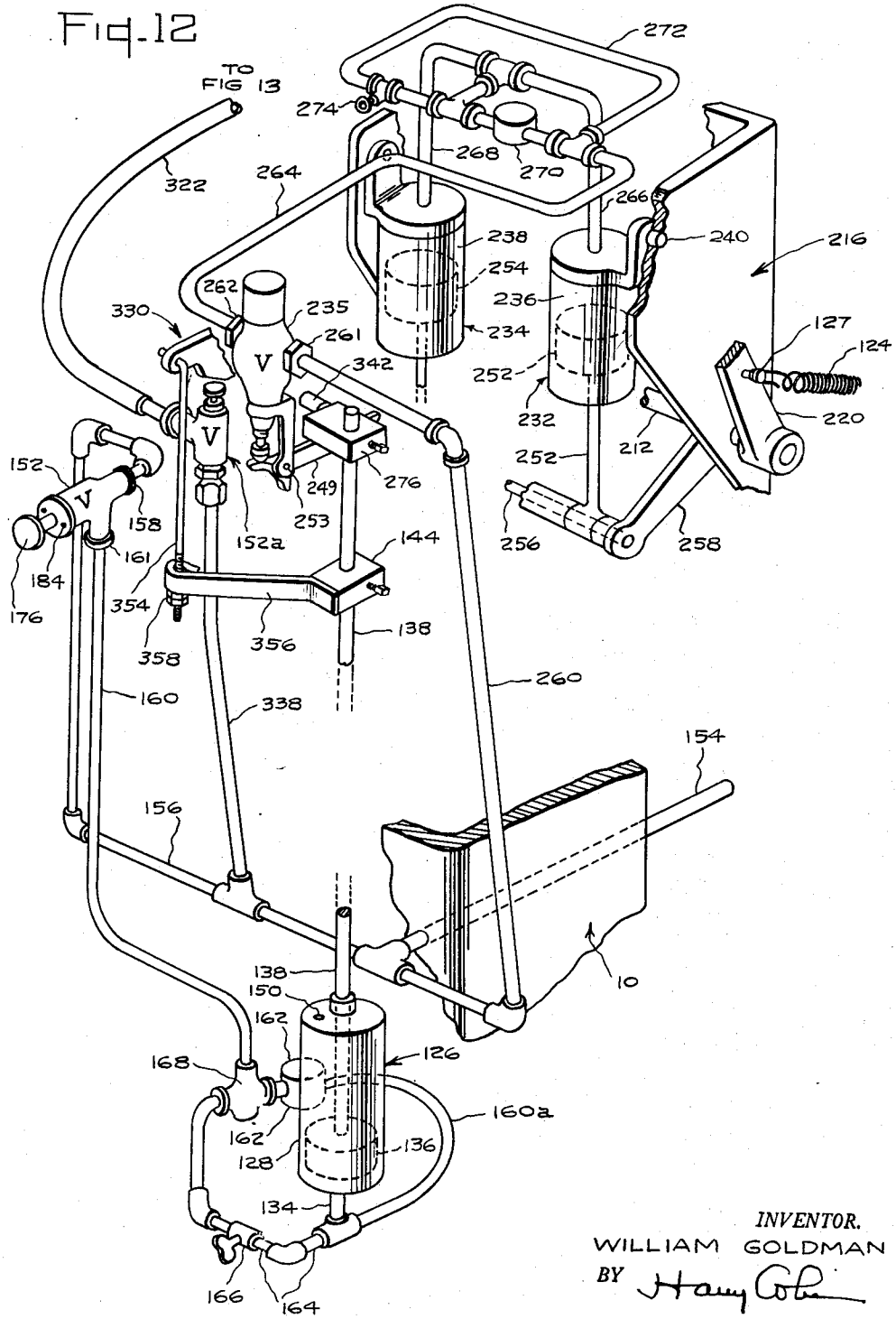


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Fig. 12



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Fig. 13

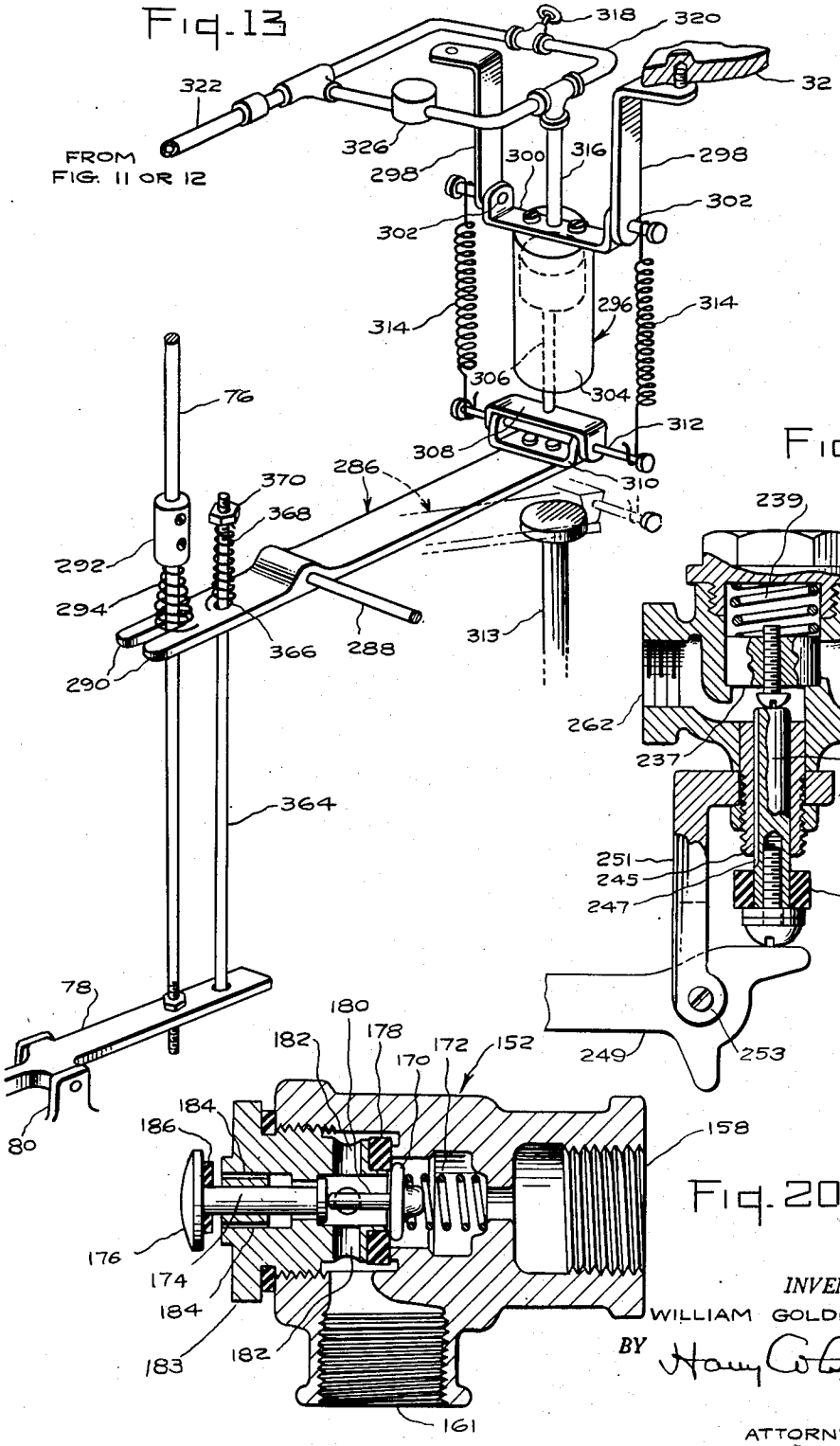


Fig. 21

Fig. 20

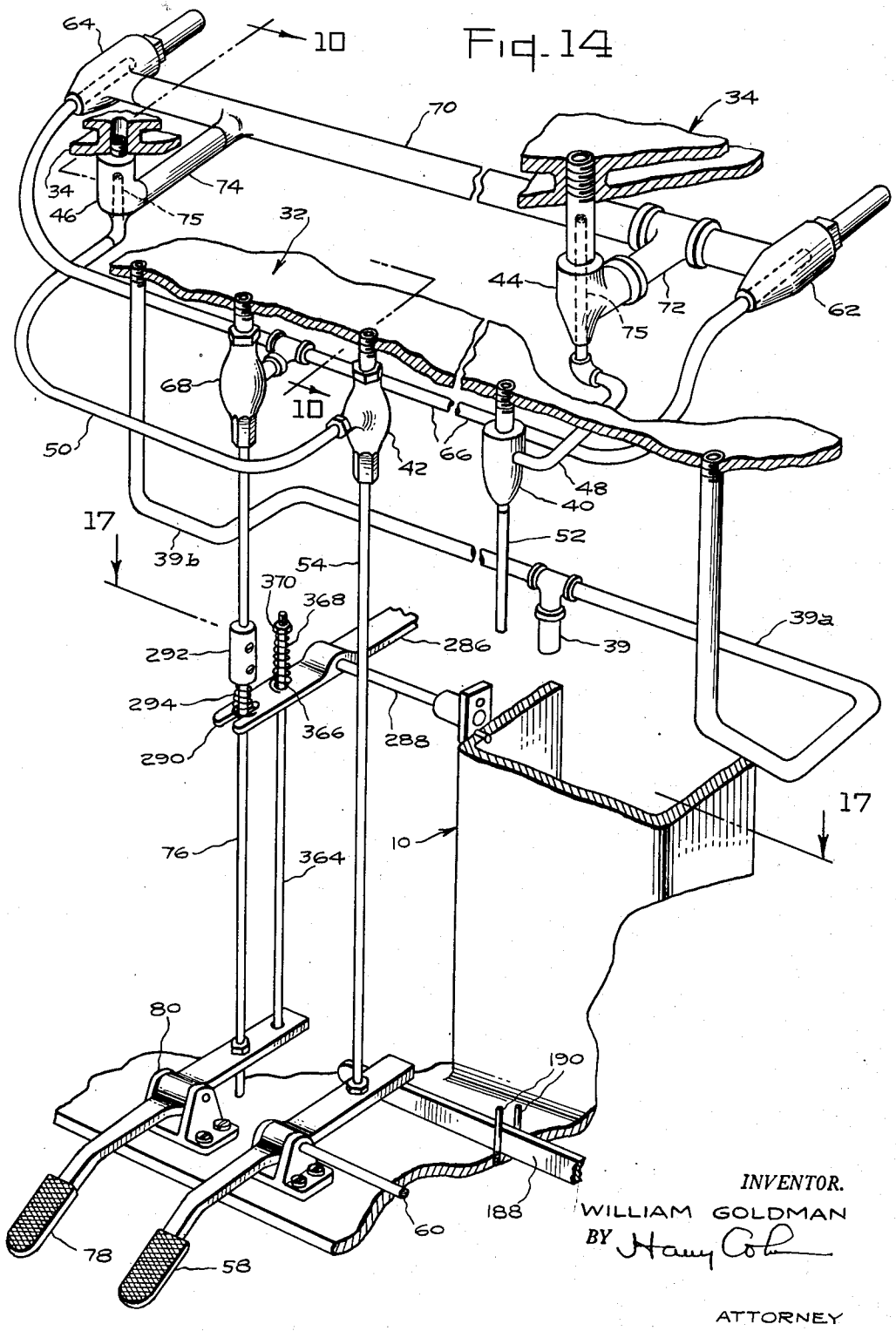
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Fig. 14



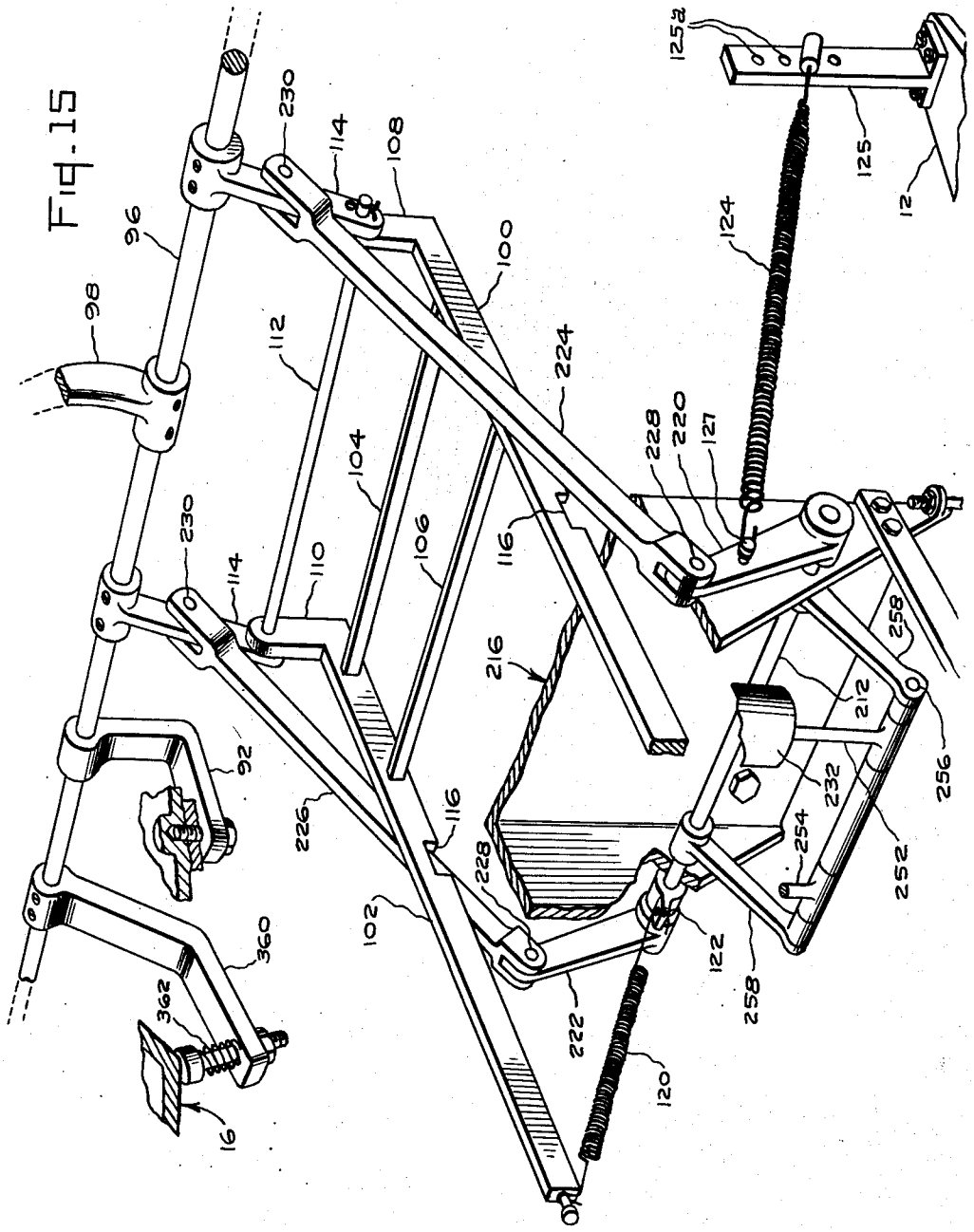
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Fig. 15



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Fig. 16

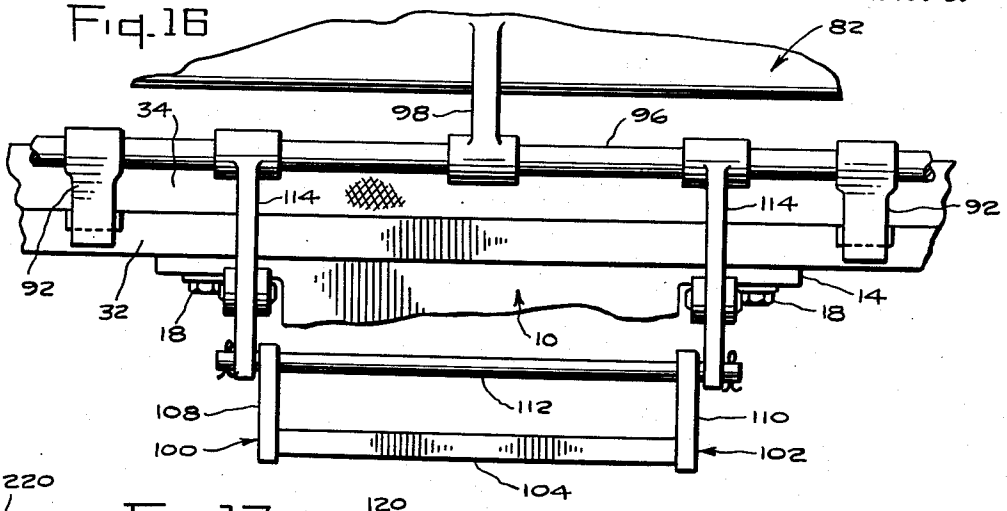


Fig. 17

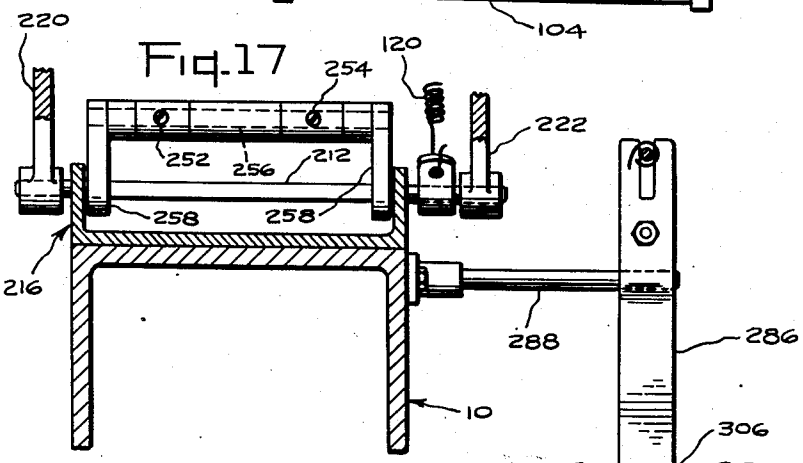


Fig. 18

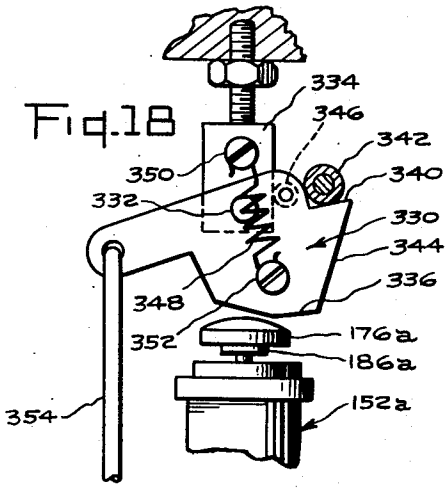
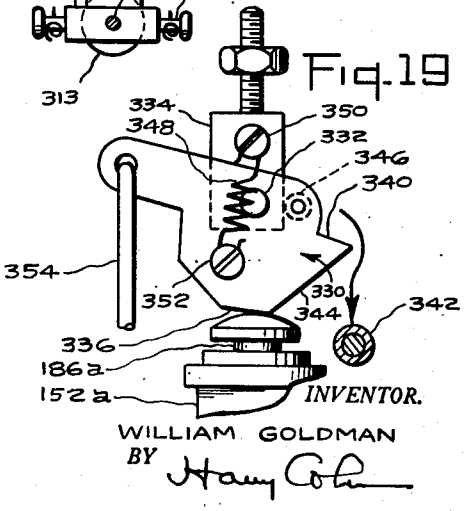


Fig. 19



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Patented Dec. 29, 1953

2,663,954

UNITED STATES PATENT OFFICE

2,663,954

STEAM PRESSING MACHINE

William Goldman, Brooklyn, N. Y.

Application July 3, 1948, Serial No. 36,832

34 Claims. (Cl. 38—15)

1

My present invention relates to steam pressing machines.

The primary object of the invention is the provision of a steam pressing machine which is operable automatically with efficiency and uniformity, and in such manner as to perform its operation within a short period of time.

Another object is the provision of an automatic steam pressing machine which is operable with a high degree of safety and without requiring a highly skilled operator.

Another object is to provide a machine which operates automatically in a predetermined cycle under the control of a master motor and push-button or other manual means associated with said master motor for initiating the operation thereof.

Another object is the provision of an automatic steam pressing machine wherein the movable presser head although not provided with a heating means is prevented from accumulating moisture resulting from the condensation of steam which issues from the stationary buck during the pressing operation.

A further object is to provide a pressing machine which is particularly well adapted for, although not limited to, steam pressing knitted goods.

A further object is to provide a steam pressing machine which is highly flexible in the sense that the operator may perform various operations on the garments or other work with a considerable range of manual control of the machine operations.

Yet a further object is generally to provide an automatic steam pressing machine which is highly advantageous in the use thereof.

The above and other objects, features, and advantages of my invention will be fully understood from the following description considered in connection with the accompanying drawings which are to be considered as illustrative of the invention but not in limitation thereof.

In the drawings:

Fig. 1 is a front perspective view of a steam pressing machine embodying my present invention;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a side view of the machine;

Fig. 4 is a perspective view of a cover plate for the frame;

Fig. 5 is a sectional view of parts of the frame on the line 5—5 of Fig. 3;

Fig. 6 is a detail sectional view on the line 6—6 of Fig. 4;

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Fig. 7 is a side view of the machine, various parts being omitted for purposes of illustration;

Fig. 8 is a perspective view of parts of the machine with parts cut away for illustrative purposes;

Fig. 9 is a front view of the steam unit which includes the lower buck of the machine;

Fig. 10 is a sectional view of the steam unit on the line 10—10 of Fig. 14;

Fig. 11 is a perspective view of the master control motor and certain parts operated thereby;

Figs. 12 and 13 are perspective views which illustrate the pneumatically operated and controlled parts of the machine and certain parts associated therewith;

Fig. 14 is a perspective view illustrating the steam system of the machine;

Fig. 15 is a perspective view of the latching device for the presser head of the machine;

Fig. 16 is a rear view of certain upper parts of the machine;

Fig. 17 is a horizontal view, partly in plan and partly in section, of certain parts of the machine, as viewed from line 17—17 of Fig. 14;

Figs. 18 and 19 are side views of the actuating mechanism for the main control valve, illustrating the operations of said mechanism;

Figs. 20 and 21 are sectional views of valves which are provided with the pneumatic system of the machine.

The automatic steam-pressing machine embodying the present invention comprising a stationary supporting frame which includes a standard 10 (Fig. 8) having a base 12 and a top 14 on which the steam-presser unit 16 is supported and to which it is secured in any suitable way, as by bolts 18 (Fig. 9). Said unit is also supported by the corner posts 20. A front cover plate 22 and side cover plates 24 are detachably secured to pairs of posts 20 by the clips 26 (Figs. 3, 4 and 5) which engage companion studs or pins 28 on the posts 20. Figs. 4 and 6 illustrate the construction of the side plates 24 and it will be understood that front plate 22 is of the same construction as, but longer than, said side plates. Also, front plate 22 may be provided with the shelves 30, as shown.

The steam presser unit 16 is preferably, but not necessarily, of the type shown in my U. S. Patent No. 1,915,821, granted to me June 27, 1933. Said unit, which is a metal casting, comprises a steam chest 32 and the lower or stationary buck 34, the latter having a flat perforated plate 36 secured thereto. The usual fluid-pervious padding 38 is provided on buck 34 (Figs. 1 and 3). Steam under suitable pressure is sup-

plied to chest 32 from a boiler or other suitable source (not shown) through a supply pipe 39 and the branch pipes 39a and 39b (Fig. 14), and a drain pipe or return (not shown) is provided, preferably as shown in said patent. Steam is supplied from chest 32 to buck 34 under the control of valves 40 and 42 (Figs. 10 and 14) which are connected to the fittings 44 and 46, respectively, by the companion connecting pipes 48 and 50. It will be apparent from Fig. 14, that fittings 44 and 46 are connected to the buck 34 at spaced points so as to provide a substantially uniform distribution of steam in said buck and from the latter to the garment or other article on which the steaming and pressing operations are performed. Control valves 40 and 42 are spring closed and are opened by actuating rods 52 and 54, respectively. The latter are extended to the base of the machine for foot operation, as by the pedals 56 and 58 (Figs. 1, 3, 7, 8, 11 and 14), which are pivotally mounted on shaft 60. As will hereinafter more fully appear, valves 40 and 42 are also automatically operable pursuant to one of the objects of the present invention.

The machine is also provided with means for creating a partial vacuum in the buck 34, for producing a flow of air for drying the garment following the steam-pressing operation, it being well understood that the drying air flows through the garment into buck 34 and from the latter usually by the operation of a fluid ejector under the control of a valve. The air flow also prevents the movable presser head, hereinafter described, from becoming wet, as subsequently specifically described herein. As shown in Fig. 14, the ejectors 62 and 64 are connected by a pipe 66 to the outlet of a control valve 68, the inlet of which is connected to steam chest 32 of unit 16. Said ejectors are connected to buck 34 of said unit by the pipe 70, branch pipes 72 and 74, and fittings 44 and 46. It will be noted that steam pipes 48 and 50 are connected to nozzles 75 which direct the steam from chest 32 upwardly into the buck 34 so that said steam does not pass through pipes 72 and 74. Moreover, air is drawn into the buck as a result of the action of nozzles 75, and this has been found to be desirable. It will be readily understood that when valve 68 is opened, steam under pressure flows from chest 32 through ejectors 62 and 64 for operating the latter whereby to exhaust fluid from the buck 34 through fittings 44 and 46 for producing the air flow for the drying operation. It will be noted that fittings 44 and 46 are connected to the buck at spaced points so as to equalize the flow of air through the garment or other article. Control valve 68 is spring closed and is opened by actuating rod 76 which is extended to the base of the machine for operation by the pedal 78 which is pivotally mounted in the bracket 80. As will hereinafter more fully appear, valve 68 is also operable automatically in proper timed relation in respect to valves 40 and 42 in the automatic operation of the latter as subsequently described herein.

The automatic operations of valves 40 and 42, and 68 are performed in proper sequence with the operation of the movable presser head 82 which will now be described.

The movable presser head 82 (Figs. 1, 2 and 3) comprises a frame 84 which is preferably formed of wood and has on its lower surface a padding 86 secured in position removably in any suitable way as by springs 88. Laterally spaced ribs 90 are preferably provided and are carried by the

lower side of presser head 82, as shown in Figs. 1 and 2, to allow a flow of air through said head, as will be readily understood. A porous cover 91 (Fig. 2) is provided on the top of frame 84 to permit air flow through head 82, and it will be understood that padding 86 including its cover is likewise sufficiently porous to allow said air flow. As here shown, presser head 82 is not supplied with steam but it will be understood that it is within the scope of my invention to provide a presser head which has a steam chamber provided therein for the supply of steam therefrom, through the padding, to the garment as will be readily apparent. Said presser head 82 is preferably of substantially the same size and shape as buck 34 for complemental action with the latter and is mounted for pivotal movement in relation to said buck. More particularly, head 82 is pivotally movable forwardly from the retracted position shown in full lines in Fig. 3 to the projected position indicated in dotted lines, and in the reverse direction from said last mentioned position to said retracted position. These forward and reverse movements take place automatically during each operation of the machine, as will be subsequently described in sufficient detail.

The pivotal mounting of presser head 82 comprises brackets 92 (Figs. 1, 3, 15 and 16) which are secured to the under side of unit 16 adjacent the rear edge of the latter. Said brackets are provided with bearings 94 in which a shaft 96 is mounted for turning movement about its own axis. Arms 98 are rigidly fastened to said shaft and to the upper side of the presser head 82 so that the latter moves conjointly with shaft 96. Said presser head is biased by its own weight for movement from its retracted position to its projected position, and it is releasably held in said retracted position by means which will now be described. Said means comprises latching bars 100 and 102 which are disposed at opposite sides of frame standard 10 and are connected to each other, for conjoint movement, by rigid cross members 104 and 106, forming a latching frame. The rear ends 108 and 110 (Fig. 15) of bars 100 and 102, respectively, extend upwardly and are pivotally mounted on a shaft 112 carried by arms 114 which are fixed to shaft 96. Bars 100 and 102 are each provided with a notch 116 in which a companion catch-lug 118, fixed to the adjacent side of standard 10 (Figs. 7 and 11), engages the companion latch bar for holding the latter against longitudinal movement and thus holding the presser head 82 in its retracted position. A spring 120 (Fig. 15) is connected at one end thereof to latch bar 102 for releasably holding the latter and the companion bar 100 of the latching frame against catch lugs 118. The opposite end of the spring is anchored to a bracket 122. Bars 100 and 102 are released from their latched engagement with companion catch-lugs 118 by raising the forward end of bar 100 so that the latter and bar 102, which is connected thereto by cross members 104 and 106, are pivotally moved on cross shaft 112 clockwise, viewing Fig. 11. When bars 100 and 102 are disengaged from catch members 118, presser head 82 moves downwardly by gravity and said bars move rearwardly while slidably supported on said catch members. In the embodiment of the invention specifically disclosed herein, the weight of the presser head 82 and a spring 124 (Fig. 15) provide the pressure of the pressing operation on the garment, since the machine of this embodiment

is intended primarily for imparting a comparatively "light press" to various garments, for example to sweaters or other knit goods which are desirably pressed lightly rather than under heavy pressure. Spring 124 is anchored at one end to stud 125 and is connected at its opposite end to a pin 127 on part of a subsequently described mechanism which is operatively connected to presser head 82 so that said head is tensioned when said head is in its projected position for increasing the pressure of the head against buck 34. If a lighter press is desired, spring 124 may be disconnected from pin 127. As shown in Figs. 7 and 15 the stud 125 is provided with a plurality of holes 125a for the spring-attaching pin 125b so that the tension of said spring may be adjusted for the desired pressure. It will be understood, however, that it is within the scope of the present invention to embody the invention in a pressing machine with provision for exerting a positive force on presser head 82, in the pressing operation. It will be observed, however, that a desirable feature of the present embodiment of the invention is that the downward movement of presser head 82 by gravity, instead of by a positive force through pressure applying means, provides a safety feature because the weight of said head is low enough to prevent injury to the operator should the latter fail to remove his hand or fingers from the path of said presser head before releasing the latter from its latched, retracted position.

The presser head latching frame which, as above mentioned, includes bars 100 and 102 is preferably released by power operated means and the operation of the latter is preferably initiate by manually operable means. As here shown, said power operated means is a fluid-pressure motor 126 (Figs. 7, 8, 11 and 12) supplied with pressure fluid, preferably compressed air, from any suitable source. Motor 126 comprises a cylinder 128 which is fixed at its lower end to a bracket 130 pivotally mounted on a shaft 131 supported by a stationary bracket 132 (Figs. 7, 8 and 11). The pressure fluid is admitted to cylinder 128 at its lower end through inlet 134 beneath the piston 136 (Fig. 12). The piston rod 138 is slidable in a vertical guide member 140 carried by a bracket 142 (Fig. 11) fixed to standard 10. A tappet 144 is fixed to piston rod 138 in position to engage the lower edge of latch bar 100, when piston 136 is moved upwardly in cylinder 128, whereby to unlatch said bar and the companion bar 102 of the latching frame or device. The upward stroke is resiliently opposed by the springs 146 which are connected to shaft 131 and to the cross member 148 which is fixed to piston rod 138, and said springs furnish the power for the return stroke of the motor piston 136. An air port 150 is provided in the upper end of the cylinder to prevent back pressure on piston 136 when it is moved upwardly by fluid pressure and to prevent a vacuum or a partial vacuum in the cylinder above said piston when the latter is moved downwardly by springs 146.

Compressed air is admitted to cylinder 128 of motor 126 under the control of a two-way valve 152 (Figs. 1 and 12). A pipe 154 leads from the compressed air source (not shown) to an intermediate pipe 156 which is connected to the inlet 158 of valve 152. A pipe 160 is connected to the outlet 161 of said valve and to the motor inlet 134 by branch pipe 160a. A check valve 162 is provided in pipe 160a so as to prevent a reverse flow of air in pipe 160. A by-pass pipe 164 provided with an adjustable valve 166 connects inlet pipe 134 to the fitting 168 of pipe 160. Referring to Fig. 20, valve 152 comprises the valve member 170 which is closed by the spring 172 and opened against said spring by the spindle 174 actuated by the push button 176 located at a convenient point at the front of the machine (Figs. 1 and 2). Valve 170 is pressed by spring 172 against valve seat 178 for closing the valve. When spindle 174 is moved inwardly, the inner end thereof engages valve stem 180 and moves valve member 170 from its seat allowing compressed air to flow through passages 182 and from the latter to the valve outlet 161. The gland 183 is provided with exhaust ports 184 which are in communication with the outlet side of the valve, but these ports are closed by the auxiliary valve 186, which is mounted on spindle 174, when said spindle is moved inwardly sufficiently far to open valve member 170. When valve operating member 176 is released valve 170 is closed against its seat by spring 172 and valve 186 is retracted from its seat to open the outlet ends of exhaust ports 184. It will be noted that the rate of fluid flow for exhaust from motor 126 through valve 152 may be controlled by adjustment of valve 166; hence, the speed of the return stroke of piston 136 by the force of springs 146 may be controlled by adjustment of valve 166. It will be understood that when valve member 170 of valve 152 is moved to its open position for the supply of compressed air to motor 126, the pressure is ample to raise piston 136 quickly, notwithstanding the presence of by-pass pipe 164 since valve member 186 closes ports 184 when valve member 170 is in its open position.

For initiating the operation of motor 126, member 176 need be actuated only momentarily and should be released shortly after it is actuated by the operator of the machine to move valve member 170 to its open position, since only a short time, say a few seconds, is required for the piston 136 to complete its upward stroke in cylinder 128.

Provision is made for admitting live steam from steam chest 32 into the buck 34 as soon as presser head 82 is near to its projected position upon release of the latching frame as described above. This is accomplished by the above mentioned automatic operation of steam valves 40 and 42 by the means and in the manner which will now be described. Referring to Figs. 11 and 14, it will be noted that valve rods 52 and 54 are interconnected for conjoint operation by a cross bar 188 which is disposed below the rear end portions of pedals 56 and 58 to which said rods are respectively fixed. Bar 188 is vertically movable between the guide pins 190. A vertical rod 192 is connected at its lower end 194 to bar 188 and is piovtally connected at its upper end to the lower end of a companion rod 196, as indicated at 198. A lever arm 200 is pivotally mounted at one end thereof on standard 10 as indicated at 202, and the opposite end 204 of said arm has a lost motion connection with cross member 148 of piston rod 138 so that said end of the arm is engaged and raised by said cross member shortly after said rod starts to move upwardly. Lever arm 200 has a hole 206 through which rod 196 projects and the latter also projects through a hole in the fixed lug 208. Said lever arm is secured to rod 196 by a screw 207 (Fig. 7). A compression spring 210 is interposed between lug 208 and the upper edge of arm 200. Accordingly when arm 200 is raised by cross member 148, the

spring is compressed and said arm exerts sufficient force on rod 196 to lift the latter and thus raise rod 192 which in turn lifts bar 188 for raising valve rods 52 and 54 to open valves 40 and 42. The latter remain open until shortly before presser head 82 starts to move to its retracted position.

The means for moving said presser head to its retracted position will now be described. A shaft 212 is mounted in the bearing openings 214 of a bracket 216 fixed to the front of standard 10 (Figs. 7, 8 and 15). Lever arms 220 and 222 are fixed to shaft 212 (Figs. 15 and 17) and are connected to arms 114 by links 224 and 226, respectively, by the pivot pins 228 at arms 220 and 222 and by the pivot pins 230 at the arms 114. Power operated means is provided for turning shaft 212 in the direction for raising said presser head. As here shown said power operated means comprises fluid pressure motive means which, for convenience, is constituted by two motors 232 and 234 operated in unison by compressed air under the control of a valve 235 which is in general similar to valve 152 but will be hereinafter specifically described. The motor cylinders 236 and 238 are pivotally mounted in the openings 240 of bracket 216. The piston rods 252 and 254 are connected to a cross bar 256 which is connected to the outer ends of lever arms 258 the inner ends of which are fixed to shaft 212 for turning the latter (Figs. 7, 12, 15 and 17). It will be observed that the lower ends of piston rods 252, 254 which are connected to bar or rod 256 may turn around the latter as an axis as may be required in the turning of arms 258.

As stated above valve 235 controls the operation of motors 234 and 236. The compressed air for operating said motors is supplied by pipe 154 and a pipe 260 which is connected to the inlet 261 of valve 235. The outlet 262 of said valve is connected by piping 264 and branch pipes 266 and 268 to motors 234 and 236 above their respective pistons. A check valve 270 is provided in piping 264 for the same purpose as check valve 162 which is associated with valve 152 of motor 126, as described above. A by-pass pipe 272 provided with an adjustable valve 274 is also provided for the same purpose as valved by-pass pipe 164 of motor 126, i. e., for exhausting air pressure from above the pistons of motors 232 and 234 at an adjustably regulated rate of flow following the operation of said motors by compressed air. It will be understood that the cylinder of motors 232 and 234 are provided with vent openings below the pistons for the same purpose as the vent opening 150 of motor 126. It may be noted that the piston return springs (146 of motor 126) are not required for motors 234 and 236 because the pistons of the latter are moved upwardly by shaft 212 when the latter is turned as a result of the lowering of the presser head 82 by gravity augmented by spring 124 as described above. It will be observed that adjustment of valve 274 determines the speed at which the preser head is lowered following the release of latch bars 100 and 102 from their respective catch lugs 118, so that said motors also act as a dash pot. Valve 274 is therefore adjusted so as to cushion the downward movement of presser head 82 without, however, unduly retarding its downward movement.

As indicated above valve 235 is generally similar to valve 152. As illustrated in Fig. 21, valve 235 comprises a spring pressed valve member 237 which is spring-closed by spring 239. A spindle 241 is provided with an auxiliary valve member 243 engageable with the seat 245 to close an exhaust passage formed by a plurality of grooves 247 in said spindle. A lever 249 pivoted on a bracket 251 at 253 is engageable with the outer end of spindle 241 for moving the latter inwardly to open valve 237 and simultaneously to close auxiliary exhaust valve 243. When lever 249 releases spindle 241, valve 237 is closed by its spring 239 and valve 243 is opened.

Valve 235 is operated by and under the control of motor 126. For this purpose, a tappet 276 is fixed to piston rod 138 of said motor in position to engage valve operating lever 249 of valve 235 just before the end of the return or down stroke of rod 138 whereby to open valve 235, for the passage of compressed air from pipe 260 to piping 264 for moving the pistons of motors 232 and 234 downwardly, and to close the exhaust bores 247 of said valve. It will be understood that the down stroke of the pistons of motors 232 and 234 is very rapid and occurs as soon as the piston 136 of motor 126 is close to the end of its down or return stroke. As soon as bar 100 of the latching device returns to its forward position, as a result of the raising of the presser head accomplished by the down stroke of the pistons of motors 232 and 234, valve tappet 276 is raised slightly so as to release valve operating lever 249, whereby the valve is closed by its spring and the exhaust bore of said valve is opened. For this purpose, a member 277 (Figs. 7 and 11), here shown as a bell crank lever, pivoted at 278 on bracket 142a carried by bracket 142, is provided. One arm 280 of lever 277 is arranged under tappet 144 to engage the latter for raising rod 138 and thereby raising tappet 276. The other arm 282 is positioned to be engaged by the forward free end of latch bar 100 when the latter moves to its forward position for re-setting of the latching device. The slight upward movement of tappet 276 thus accomplished by the engagement of bar 100 with member 277, is sufficient to allow the spindle of the valve to move to its open position so that air may exhaust through the valve bore as described above with reference to Fig. 21, and at the same time the internal movable valve member 237 of valve 235 is closed by its spring, thus interrupting the flow of compressed air from pipe 260 through said valve.

As hereinbefore stated, the air-drying operation commences while the presser head 82 is still in its projected position and continues after said presser head starts to move to its retracted position. Said air-drying operation begins as soon as the supply of steam to the stationary buck 34 is interrupted under the control of valves 40 and 42, and as a result presser head 82 is subjected to the drying action and is thus prevented from becoming unduly wet due to steam condensation on its padding 86. The air drying operation on the garments or other articles continues, after head 82 starts its retractive movement, for the sufficient length of time required to dry such articles to the desired degree.

The means for automatically operating the valve 66 which controls the operation of ejectors 62 and 64 for the air-drying operation, referred to above, comprises a lever 286 (Figs. 7, 13 and 14) which is mounted for pivotal movement on a pivot member 288 carried by standard 16. Lever 286 has a worked end 290 which acts on collar 292 of rod 76 through an interposed spring 294 to open valve 66 against the closing spring

of the latter. Power operated means, here shown as a fluid-pressure motor 296 operated, by compressed air, under the control of a valve 152a and mechanism hereinafter described, is provided for actuating lever 286. Motor 296 is supported from the under side of steam unit 16 (Fig. 7) by brackets 298 to which the strap 300 is pivotally connected at its opposite ends as indicated at 302. Strap 300 is fastened to the top of the motor cylinder 304. The piston rod 306 is fixed to a strap 308 which is pivotally connected to a bracket 310 fixed to lever 286, said pivotal connection comprising a pivot rod 312. A stop here shown as a post 313 is provided to limit the down movement of rod 306, the upper end of said post being in the path of movement of lever 286. Springs 314 are connected at their opposite ends to pivot pins 302 and pivot rod 312, respectively. Piston rod 306 is moved downwardly by fluid pressure, admitted to cylinder 304 above the piston through the pipe 316, to open valve 68; and said piston rod is moved upwardly by springs 314 to allow said valve to be closed by its spring. An air vent opening, such as opening 150 of motor 126, is provided in cylinder 304 below the piston for the same purpose as said opening 150 of motor 126. The length of time during which valve 68 remains open is predetermined by adjustment of the valve 318 in the by-pass pipe 320 which is connected to the piping 322 which connects pipe 316 of motor 296 to the outlet side of valve 152a. A check valve 326 is provided between piping 322 and pipe 316 to prevent return air flow from the motor 296 except through valve controlled by-pass 320.

The mechanism for operating valve 152a will now be described, it being understood that said valve is of the same construction as valve 152 which controls the operation of the master motor 126. Referring to Figs. 11, 18 and 19, the valve operating mechanism comprises a cam 330 mounted for pivotal movement by a pivot pin 332 carried by a bracket 334 which is mounted on the underside of steam unit 16. Said cam has an edge 336 which is arranged to engage the valve spindle end or button 176a (Fig. 19) for opening the valve member to allow compressed air to pass from pipe 338 (Figs. 11 and 12) to pipe 322 for operating motor 296, the auxiliary valve 186a being then closed. Said cam is provided with a shoulder 340 on its upper edge releasably engageable by a roller 342 carried by tappet 276. The cam edge 344 allows the roller 342 to move upwardly without turning the cam when rod 138 is raised in the operation of motor 126. A stop 346 is carried by cam 330 in position to engage bracket 334 to limit the movement of said cam in both directions. A spring 348 is connected at one end to a pin 350, carried by bracket 334, and at its opposite end to a pin 352 carried by cam 330, the arrangement being such that said spring holds the cam releasably in either of its two positions shown by Figs. 18 and 19. In Fig. 18, the roller 342 is shown in engagement with the shoulder 340 and in this position rod 138 of motor 126 begins its down-stroke. In moving downwardly, rod 138 causes roller 342 to move cam 330 to the position thereof shown in Fig. 19 for opening valve 152a to admit air into motor 296, as described above, and to close exhaust valve 186a. The valve is held in this position by spring 348. During the down movement of rod 138, roller 342 disengages cam 330 as shown by Fig. 19. During the up movement of rod 138 when roller 342 is in engagement with cam edge 344, rod 138 turns about its longitudinal axis, against the force of springs 146, so that roller 342 can follow the upwardly inclined edge 344, and as soon as said roller clears the upper end of said edge at shoulder 340, said springs turn rod 138 in the opposite direction to move roller 342 into its position over said shoulder as shown in Fig. 18. When rod 138 moves downwardly, a similar turning of said rod against springs 146 allows roller 342 to move off the shoulder 340 as soon as the cam has been moved by said roller to the valve-opening position illustrated in Fig. 19. A rod 354 is connected to cam 330 for returning the latter to its valve released position so that valve 152a is closed for cutting off the supply of compressed air to motor 296 and for opening the exhaust valve 186a for the exhaust of air from pipe 322 during the return stroke of the piston of motor 296 by springs 314. Rod 354 is actuated by an arm 356 fixed to tappet 144. Accordingly when rod 138 reaches the end of its down stroke, arm 356 engages stop 358 on rod 354 and moves the latter downwardly for returning cam 330 to its starting position (Fig. 18) in which it is releasably held by spring 348. Arm 356 has a loose connection with rod 354 so that said arm can move upwardly without moving said rod.

Presser head 82 is provided with means to cushion the stop of said head when moved to its retracted position by motors 232, 234. For this purpose arms 360 are fixed to shaft 96 (Figs. 1, 3, and 15). As shown more clearly in Figs. 3 and 15, the arms 360 are provided at their free ends with spring buffers 362 positioned to engage the underside of steam unit 16. As hereinbefore pointed out, the stop of head 82 at the down movement thereof is cushioned pneumatically by the dash pot action of motors 232, 234 through adjustment of valve 274. Referring to Figs. 7, 13 and 14, it will be noted that a rod 364 is connected at its lower end to pedal 78 and passes through an opening 366 in lever 286 which is actuated by motor 296. A spring 368 bears against lever 286 and against a stop nut 370 fixed to rod 364. When pedal 78 is actuated for opening valve 68, rod 364 moves upwardly through lever 286 without opposition by spring 368 and rod 76 similarly moves upwardly through said lever without opposition by spring 294. However, when lever 286 is operated by motor 296 for opening valve 68 for the drying operation, as described, springs 368 and 294 are both compressed and the forces of these springs are transmitted to valve opening rod 76, spring 368 acting indirectly on said rod through rod 364 and pedal 78. It will be understood, however, that either spring may be omitted when the other is strong enough to lift rod 76.

It will have been observed from the above description that motor 126 constitutes master power-operated means for controlling the operating cycle of the pressing machine, since said motor operates to unlatch the presser head 82 and controls the operation of valve 235 which, in turn, controls the operation of motors 234, 236, which raise the presser head, and valve 152a which controls motor 296 which operates valve 68 of the ejectors 62 and 64 for the air-drying operation.

In operating the machine for steaming and pressing a garment or other article, the latter is placed on the stationary buck 34, the presser head being latched in its raised position. Steam is admitted to buck 34 by manual operation of valves 40 and 42, foot pedals 56 and 58 being actu-

ated for this purpose. The garment which is thus steamed and made more pliable by this steam operation may be further arranged or adjusted on the buck so that it will be pressed smoothly when the presser head 82 is operated. After this preliminary manual operation is performed by the operator of the machine, manual control member 176 is operated to open valve 152 of motor 126 to initiate the operation of the latter. Member 176 is released by the operator almost immediately after it is actuated to open valve member 170 of valve 152, since piston 136 of said motor moves quickly upwardly and thus operates quickly to release the latch bars 100 and 102 of the latching device of the presser head 82 so that the latter can move by gravity to its projected position, shown in dotted lines in Fig. 3. Valves 40 and 42 are opened almost immediately by the engagement of cross member 148 with arm 260. Then on the downstroke of rod 138 valve 68 is operated by motor 296 under the control of valve 152a for the drying operation which starts while presser head 82 is still in its down or projected position, valves 40 and 42 having closed in the meantime to cut off the supply of steam to the buck. When the downward movement of said rod is almost completed, tappet 276 engages the lever 249 of valve 235 for operating the latter. This operation of valve 235 results in the operation of motors 232, 234 for raising the presser head to its retracted position. More particularly, when valve 235 is operated, piston rods 252, 254 move downwardly and operate arms 258 of shaft 212 to turn the latter thereby operating arms 220, 222, links 224, 226 and arms 114 to turn shaft 96 in a clockwise direction, viewing Fig. 3, for raising the presser head to its retracted position. While head 82 is being raised, the latching frame is moved forwardly by arms 114 and as soon as the bar 100 of the latching device reaches its forward position it engages member 277 which is thereby turned and engages tappet 144 to lift piston rod 138 sufficiently to release tappet 276 from valve lever 249, so that valve 235 is operated by the inner spring thereof to close the internal valve member and to open the outer end of the fluid-exhaust bore whereby to interrupt the supply of air to motors 232, 236 and to allow the exhaust of air from said motors through their valve-controlled by-pass 272. This completes the operating cycle of the machine. It will be noted that if the main manual control member 176 is held in valve opening position, i. e., so that valve member 170 of valve 152 is held open, presser head 82 stays down, whereby the pressing operation may be prolonged if that is desired by the operator of the machine. However, as soon as member 176 is released, the automatic operation is automatically resumed and the cycle is completed as above described pursuant to the downward movement of piston rod 138 of motor 126.

It will be understood that the invention may be embodied otherwise than as herein specifically shown or described and that in the illustrative embodiment various changes in the details of construction and in the arrangement of parts may be made without departing from the underlying idea or principles of my invention within the scope of the appended claims.

This application is a continuation in part of my application, Ser. No. 30,873, filed June 3, 1949 now abandoned.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means including a valve for admitting steam into said buck, power-operated means for controlling the movement of said presser head toward and away from the buck and for controlling the operation of said valve in timed relation to the movements of said presser head, and manually operable means for controlling the operation of said power-operated means, said power-operated means including a plurality of motors, one of said motors being operatively connected to said presser head for moving the latter, means for controlling the operation of said one motor, another of said motors being operatively connected to said valve, and means operable by said latter motor for actuating the controlling means of said one motor in timed relation with the operation of said valve by said latter motor, said manually operable means being operatively connected to said latter motor for controlling the operation thereof.

2. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, said presser head being pivotally mounted for said movement thereof, releasable latching means for releasably holding said presser head in a retracted position in relation to said buck, means biasing said presser head when in said retracted position for movement toward the buck, means for releasing said latching means, and time-delay means operating in opposition to said biasing means and operatively connected to said presser head for controlling the speed of movement of the latter toward the buck when said latching means is released.

3. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position comprising a motor having a piston operable by fluid pressure and a valve operable to admit pressure fluid to the motor to move said piston, and motive means having a predetermined cycle of operation, said motive means being engageable with said valve to operate said valve in timed relation to said cycle, whereby said presser head is moved to said retracted position in timed relation with said cycle of said motive means.

4. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means for controlling said movement of the presser head comprising a motor including a cylinder and a piston movable therein and operatively connected to said presser head for moving the latter away from said buck, a check valve operable to admit pressure fluid into said cylinder for moving said piston in one direction to move the presser head away from said buck, and fluid exhaust means connected to by-pass said valve, said by-pass means including an adjustable valve for exhausting said fluid from said cylinder at a controlled rate of flow for controlling the speed of movement of said piston in the opposite direction, whereby to control the speed of movement of said presser head towards said buck.

5. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from an operative position in relation to said buck for the pressing operation, said buck

and presser head having cooperating air pervious surfaces adapted to receive therebetween an article to be pressed, means including a valve for admitting steam into said buck and through the latter for the steaming operation, said buck having means for inducing a flow of air by suction, through said presser head and through said buck while the presser head is in its operative position, said latter means including a valve for permitting the steam to flow out of said buck and means operatively connected to said presser head and to said valves and operable automatically in timed relation to said movement of the presser head first to actuate said valves in predetermined timed relation to admit steam to the buck before the presser head arrives at its operative position and to cut off said steam and institute said suction before the presser head moves from its operative position.

6. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from an operative position in relation to said buck for the pressing operation, said buck and presser head having cooperating air pervious surfaces adapted to receive therebetween an article to be pressed, means including a valve for admitting steam into said buck and through the latter for the steaming operation, said buck having means for inducing a flow of air by suction through said presser head and through said buck while the presser head is in its operative position, said latter means including a valve for permitting the steam to flow out of said buck and manually controlled power operated means operatively connected to said presser head and to said valves for controlling said movement of the presser head and the actuation of said steam-admitting means and said airflow inducing means in predetermined timed relation to admit steam to the buck before the presser head arrives at its operative position and to cut off said steam and institute said suction before the presser head moves from its operative position.

7. A steam pressing machine, comprising a buck, a companion presser head movable toward and away from an operative position in relation to said buck for the pressing operation, said buck and presser head having cooperating air pervious surfaces adapted to receive therebetween an article to be pressed, means including a valve for admitting steam into said buck and through the latter for the steaming operation, means including a valve for inducing a flow of air by suction through said presser head and through said buck while the presser head is in its operative position, power-operated means operatively connected to said presser head and to said valves for controlling the movement of said presser head toward and away from the buck and for controlling the operation of said valves in timed relation to the movements of said presser head to admit steam to the buck before the presser head arrives at its operative position and to cut off said steam and institute said suction before the presser head moves from its operative position, and manually operable means for controlling operation of said power-operated means, said power-operated means including a plurality of motors, said manually operable means being operatively connected to one of said motors for controlling said one motor directly and another of said motors having controlling means operable by said one of the motors, whereby said motors are operable in predetermined timed relation to effect said operation of said valves in timed relation to the movements of said presser head.

8. A steam pressing machine comprising a stationary buck, a companion presser head mounted for pivotal movement from a retracted position to an operative position in relation to said buck, releasable latching means for releasably holding said presser head in said retracted position, means for releasing said latching means whereby to release said presser head for said movement thereof from said retracted position to said operative position thereof, a fluid-pressure motor including a piston operatively connected to said latch-releasing means and operable in one direction to actuate said latch-releasing means, a manually operable valve for controlling the admission of pressure fluid to said motor to operate said piston in said direction, means for moving said piston in the opposite direction to return said piston to its starting position and to retract said latch-releasing means whereby the latching means can be re-set, adjustable time delay means in the fluid-exhaust line of said motor for predetermining the time of movement of said piston in said opposite direction, means operatively connected to said presser head for moving said presser head from said operative position to said retracted position thereof, and means provided on said piston and disposed relative to said presser head moving means to actuate the latter on said return movement of said piston for effecting said retracted movement of said presser head.

9. A steam pressing machine comprising a stationary buck, a companion presser head mounted for pivotal movement from a retracted position to an operative position in relation to said buck, releasable latching means for releasably holding said presser head in said retracted position, means for releasing said latching means whereby to release said presser head for said movement thereof from said retracted position to said operative position thereof, a fluid-pressure motor including a piston operatively connected to said latch-releasing means and operable in one direction to actuate said latch-releasing means, a manually operable valve for controlling the admission of pressure fluid to said motor to operate said piston in said direction, means for moving said piston in the opposite direction to return said piston to its starting position and to retract said latch-releasing means whereby the latching means can be re-set, adjustable time-delay means in the fluid-exhaust line of said motor for predetermining the time of movement of said piston in said opposite direction, and means operatively connected to said presser head for moving said presser head from said operative position to said retracted position, said last mentioned means being actuated by said piston on said return movement thereof for effecting said retracted movement of said presser head, said latching means being movable with said presser head and automatically re-set by said movement of the presser head to its retracted position.

10. A steam pressing machine comprising a stationary buck, a companion presser head mounted for pivotal movement from a retracted position to an operative position in relation to said buck, releasable latching means for releasably holding said presser head in said retracted position, means for releasing said latching means whereby to release said presser head for said movement thereof from said retracted position to said operative position thereof, a fluid-pressure

motor including a piston operatively connected to said latch-releasing means and operable in one direction to actuate said latch-releasing means, a manually operable valve for controlling the admission of pressure fluid to said motor to operate said piston in said direction, means for moving said piston in the opposite direction to return said piston to its starting position and to retract said latch-releasing means whereby the latching means can be re-set, adjustable time-delay means in the fluid-exhaust line of said motor for predetermining the time of movement of said piston in said opposite direction, and means operatively connected to said presser head for moving said presser head from said operative position to said retracted position, said last mentioned means being actuated by said piston on said return movement thereof for effecting said retracted movement of said presser head, said latching means being movable with said presser head and automatically reset by said movement of the presser head to its retracted position, said means for moving the presser head to its retracted position comprising a fluid-pressure motor operatively connected to said presser head and a valve for controlling the admission of pressure fluid to said latter motor for operating the latter to retract the presser head, said latter valve being actuated by said piston of said first mentioned motor on the return movement thereof.

11. A steam pressing machine, comprising a stationary buck and a companion presser head mounted for movement in relation to said buck to retracted and operative positions, valve controlled means for supplying steam to said buck for the pressing operation, valve controlled means for inducing a flow of air into said buck through the upper surface thereof, means to actuate the valve of said steam supplying means to admit steam into said buck and to interrupt the supply of steam to said buck, and manually controlled power operated means for operating the valves of said valve-controlled means in timed relation, first to admit steam into the buck and then to induce said flow of air into the buck through said upper surface thereof, said power operated means including a first motor operatively connected to the valve of said steam supply means, a second motor operatively connected to the valve of said air-flow inducing means, and means operatively interconnecting both of said motors for controlling the operation of said second motor, said interconnecting means being operable by said first motor, whereby the valve of said air-flow inducing means operates in timed relation to the valve of said steam supply means.

12. A steam pressing machine, comprising a stationary buck and a companion presser head mounted for movement in relation to said buck to retracted and operative positions, valve controlled means for supplying steam to said buck, valve controlled means for inducing a flow of air into said buck through the upper surface thereof, means to actuate the valve of said steam supplying means to admit steam into said buck and to interrupt the supply of steam to said buck, means to actuate the valve of said air-flow inducing means, and manually controlled power operated means for operating the valves of said valve-controlled means in timed relation, first to admit steam into the buck and then to induce said flow of air into the buck through said upper surface thereof, said power operated means comprising a fluid-actuated piston having a rod provided with a pair of spaced tappets, one of said tappets operating the means which actuate the steam supply valve for opening the latter, and another of said tappets operating the means which actuate the air-flow valve for opening said last mentioned valve.

13. A steam pressing machine, comprising a stationary buck and a companion presser head mounted for movement in relation to said buck to retracted and operative positions, valve controlled means for supplying steam to said buck, valve controlled means for inducing a flow of air into said buck through the upper surface thereof, means to actuate the valve of said steam supplying means to admit steam into said buck and to interrupt the supply of steam to said buck, means to actuate the valve of said air-flow inducing means, and manually controlled power operated means for operating the valves of said valve-controlled means in timed relation, first to admit steam into the buck and then to induce said flow of air into the buck through said upper surface thereof, said power operated means comprising a fluid-actuated piston having a rod provided with tappets which operate said valve to open the same, said tappets being disposed to operate the means which actuate the steam supply valve and the means which actuate the air-flow valve so that the valve of said steam-supplying means is opened when said rod moves in one direction to operate the actuating means therefor and the valve of said air-flow inducing means is opened when said rod moves in the opposite direction to operate the actuating means for the latter valve.

14. In a steam pressing machine having a steam unit including a steam chest and a buck with a valved connection between said chest and said buck for the passage of steam from said chest to said buck, and having steam operated ejector means for inducing a flow of air into said buck through the upper surface of the latter for drying the article after the pressing operation thereon, and having a valved connection from said chest to said ejector means for the passage of steam from the chest to said ejector means for operating the latter; the combination with the valves of said first mentioned and last mentioned connections of means operable automatically for opening said valves in predetermined timed relation, said automatically operable means comprising means including a first motor operatively connected to the valve of said first mentioned connection for controlling the operation thereof, a second motor operatively connected to the valve of said second mentioned connection, and means operatively interconnecting both of said motors for controlling the operation of said second motor, said interconnecting means being operable by said first motor, whereby the valve of said second-mentioned connection operates in timed relation to the valve of said first mentioned connection and an air-pervious presser head movable to and from an operative position in relation to the buck, for the pressing operation, said flow of air passing through said head and into the buck when said head is in said operative position thereof.

15. In a steam pressing machine having a steam unit including a steam chest and a buck with a valved connection between said chest and said buck for the passage of steam from said chest to said buck, and having steam operated ejector means for inducing a flow of air into said buck through the upper surface of the latter for drying the article after the pressing operation thereon, and having a valved connection from

said chest to said ejector means for the passage of steam from the chest to said ejector means for operating the latter; the combination with the valves of said first mentioned and last mentioned connections of means operable automatically for opening said valves in predetermined timed relation, said automatically operable means comprising means including a first motor operatively connected to the valve of said first mentioned connection for controlling the operation thereof, a second motor operatively connected to the valve of said second mentioned connection and means operatively interconnecting both of said motors for controlling the operation of said second motor, said interconnecting means being operable by said first motor, whereby the valve of said second-mentioned connection operates in timed relation to the valve of said first-mentioned connection and an air-pervious presser head movable to and from an operative position in relation to the buck, for the pressing operation, said flow of air passing through said head and into the buck when said head is in said operative position thereof, and means operatively connected to said presser head for controlling the movement of said head to and from said operative position thereof, said last mentioned means including a third motor, and means operatively interconnecting said first and third motors for controlling the operation of said third motor, said interconnecting means being operable by said first motor.

16. A pressing machine comprising relatively movable pressing members having cooperating air pervious surfaces adapted to receive therebetween an article to be pressed, means including a valve for admitting steam into one of said members and through said one member for the steaming operation, means operatively connected to said steam admitting means for inducing a flow of air by suction into said one member upon said admission of steam thereto, and said one member having means for inducing a flow of air by suction through said other member while said members are in pressing disposition, said latter means including a valve for permitting steam to flow out of said one member, through said operatively connected means.

17. A pressing machine comprising relatively movable pressing members having cooperating air pervious surfaces adapted to receive therebetween an article to be pressed, means including a valve for admitting steam into one of said members and through said one member for the steaming operation, means operatively connected to said steam admitting means for inducing a flow of air by suction into said one member upon said admission of steam thereto, and said one member having means for inducing a flow of air by suction through said other member while said members are in pressing disposition, said latter mean including a valve for permitting steam to flow out of said one member, through said operatively connected means, said operatively connected means including ejector means through which air flows into said one member upon said admission of steam thereto, steam flowing from said last mentioned valve through said ejector means for inducing said air flow through said other member.

18. In an automatic steam pressing machine comprising relatively movable companion presser members at least one of which has a steam chamber and a fluid pervious pressing surface for the passage of steam from said chamber through said surface and for the passage of air through said surface into said chamber, for respectively steaming and drying the article which is pressed between said members in the operation of the machine, a first normally closed valve for controlling the supply of steam into said chamber, and means operable under the control of a second normally closed valve for withdrawing steam and air from said chamber and thereby causing air to flow into the chamber through said pervious surface; first power actuated means operatively connected to said first valve for opening the latter to admit steam to said steam chamber for said steaming operation, second power actuated means operable to open said second valve to withdraw steam and air from said chamber for the drying operation, and control means operatively interconnecting both of said power means, said interconnecting means being operable by said first power means, whereby said second power means is actuated under the control of said first power means and means operatively connected to one of said presser members for moving the latter toward and away from said other presser member.

19. A steam pressing machine as defined by claim 18, in which said presser member moving means includes a fluid-pressure motor which also provides the power for said power actuated means for opening said second valve.

20. A steam pressing machine as defined by claim 18, in which said second power-actuated means includes a fluid-pressure motor having a control valve which is actuated through the medium of said control means under the control of said first power actuated means and in which said fluid-pressure motor actuates said second valve to open the latter, whereby said second power actuated means and said second valve are operated in timed relation to the operation of said first power actuated means.

21. A steam pressing machine as defined by claim 18, in which said second power-actuated means includes a fluid-pressure motor having a control valve which is actuated through the medium of said control means under the control of said first power actuated means and in which said fluid-pressure motor actuates said second valve to open the latter, whereby said second power actuated means and said second valve are operated in timed relation to the operation of said first power actuated means, and wherein said first power actuated means includes a fluid pressure motor having a manually operable control valve.

22. A steam pressing machine as defined by claim 18, wherein said presser member moving means includes a first fluid-pressure motor having a manually operable valve, a second fluid-pressure motor having a control valve actuated through the medium of said control means under the control of said first motor, and wherein said first and second power actuated means comprise said first and second motors, respectively.

23. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, first power-operated means for controlling the movement of said presser head toward and away from the buck, a valve for admitting steam into said buck, second power-operated means for controlling the operation of said valve, and means operatively interconnecting both of said power-operated means for controlling the operation of said first power-operated means, said interconnecting means being operable by said sec-

ond power-operated means, whereby said valve is operable in timed relation to the movements of said presser head.

24. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, first power-operated means for controlling the movement of said presser head toward and away from the buck, a valve for admitting steam into said buck, second power-operated means for controlling the operation of said valve, and means operatively interconnecting both of said power-operated means for controlling the operation of said first power-operated means, said interconnecting means being operable by said second power-operated means, whereby said valve is operable in timed relation to the movements of said presser head, and manually operable means operatively connected to said second power-operated means for controlling the operation thereof.

25. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, first power-operated means for controlling the movement of said presser head toward and away from the buck, a valve for admitting steam into said buck, second power-operated means for controlling the operation of said valve, and means operatively interconnecting both of said power-operated means for controlling the operation of said first power-operated means, said interconnecting means being operable by said second power-operated means, whereby said valve is operable in timed relation to the movements of said presser head, releasable latching means for releasably holding said presser head in position away from said buck, and means for releasing said latching means whereby to release said presser head for movement toward said buck, said releasing means being operatively connected to said second power-operated means for operation thereby.

26. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, first power-operated means for controlling the movement of said presser head toward and away from the buck, a valve for admitting steam into said buck, second power-operated means for controlling the operation of said valve, and means operatively interconnecting both of said power-operated means for controlling the operation of said first power-operated means, said interconnecting means being operable by said second power-operated means, whereby said valve is operable in timed relation to the movements of said presser head, releasable latching means for releasably holding said presser head in position away from said buck, and means for releasing said latching means whereby to release said presser head for movement toward said buck, said releasing means being operatively connected to said second power-operated means for operation thereby, and manually operable means operatively connected to said second power-operated means for initiating the operation thereof.

27. A steam pressing machine comprising a stationary buck, a companion presser head mounted for pivotal movement from a retracted position to an operative position in relation to said buck, releasable latching means for releasably holding said presser head in said retracted position, said latching means comprising a latch member operatively connected to said presser head for linear movement therewith in one direction when said presser head moves to said retracted position thereof, and a stationary catch member disposed in the path of movement of said latch member in said one direction for releasable engagement thereby.

28. In a steam pressing machine having a steam unit including a steam chest and a buck with a valved connection between said chest and said buck for the passage of steam from said chest to said buck, and having steam operated ejector means for inducing a flow of air into said buck through the upper surface of the latter for drying the article after the pressing operation thereon, and having a valved connection from said chest to said ejector means for the passage of steam from the chest to said ejector means for operating the latter; the combination with the valves of said first mentioned and last mentioned connections of means operable automatically for opening said valves in predetermined timed relation, said automatically operable means comprising means including a first motor operatively connected to the valve of said first mentioned connection for controlling the operation of the valve of said first mentioned connection, a second motor operatively connected to the valve of said second mentioned connection, and means operatively interconnecting both of said motors for controlling the operation of said second motor, said interconnecting means being operable by said first motor, whereby the valve of said second-mentioned connection operates in timed relation to the valve of said first mentioned connection.

29. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position comprising fluid motor means and a valve operable to admit pressure fluid to the motor to move the presser head, motive means having a predetermined cycle of operation, said motive means acting upon said valve to operate the latter in timed relation to said cycle, whereby said presser head is moved to said retracted position in timed relation with said cycle of said motive means, said buck being air pervious, and means operable by said motive means for inducing a flow of air through said buck in timed relation to said cycle whereby said air flow is in timed relation to the movement of said presser head.

30. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position, motive means having a predetermined cycle of operation, means operatively inter-connected between said presser head moving means and said motive means and operable by the latter for operating said presser head moving means in timed relation to said cycle, said buck being air pervious, and means operable by said motive means for inducing a flow of air through said buck in timed relation to said cycle whereby said air flow is in timed relation to the movement of said presser head.

31. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position, said buck being air pervious

and having means for providing a flow of air through the pressed article when said presser head is at least partly retracted, fluid pressure motive means for moving said presser away from said buck toward a retracted position, and valve means actuated automatically in timed relation with movement of said presser head for operating said air-flow means when said presser head is at least partly retracted from said buck.

32. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position, said buck being air pervious and having means for providing a flow of air through the pressed article when said presser head is at least partly retracted, fluid pressure motive means for moving said presser head away from said buck toward a retracted position, and valve means actuated automatically in timed relation with movement of said presser head for operating said air-flow means when said presser head is at least partly retracted from said buck, and manually operable fluid pressure means for initiating the operation of said motive means to operate the presser head.

33. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position, said buck being air pervious and having means for providing a flow of air through the pressed article when said presser head is at least partly retracted, fluid pressure motive means for moving said presser away from said buck toward a retracted position, and valve means actuated automatically in timed relation with movement of said presser head for operating said air-flow means when said presser head is at least partly retracted from said buck, and manually operable valve means for initiating the operation of said motive means to operate the presser head.

34. A steam pressing machine comprising a buck, a companion presser head movable toward and away from said buck for the pressing operation, means operatively connected to said presser head for moving the latter away from the buck to a retracted position, said buck being air pervious and having means for providing a flow of air through the pressed article when said presser head is at least partly retracted, valve means actuated automatically in timed relation with movement of said presser head for operating said air-flow means when said presser head is at least partly retracted from said buck, means for moving said presser head toward and away from the buck for the pressing operation including motive means operatively connected to said presser head for moving the latter away from the buck to a retracted position, means operable in timed relation with the movement of the presser head by said motive means to actuate said valve means, and manually controlled automatically operable means to control the actuation of said motive means.

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