April 21, 1931. W. R. HOLTTUM 1,802,018

HOT PRESS FOR PRESSING CLOTHES AND TEXTILE FURNISHINGS

Filed Nov. 16, 1929 2 Sheets-Sheet 1

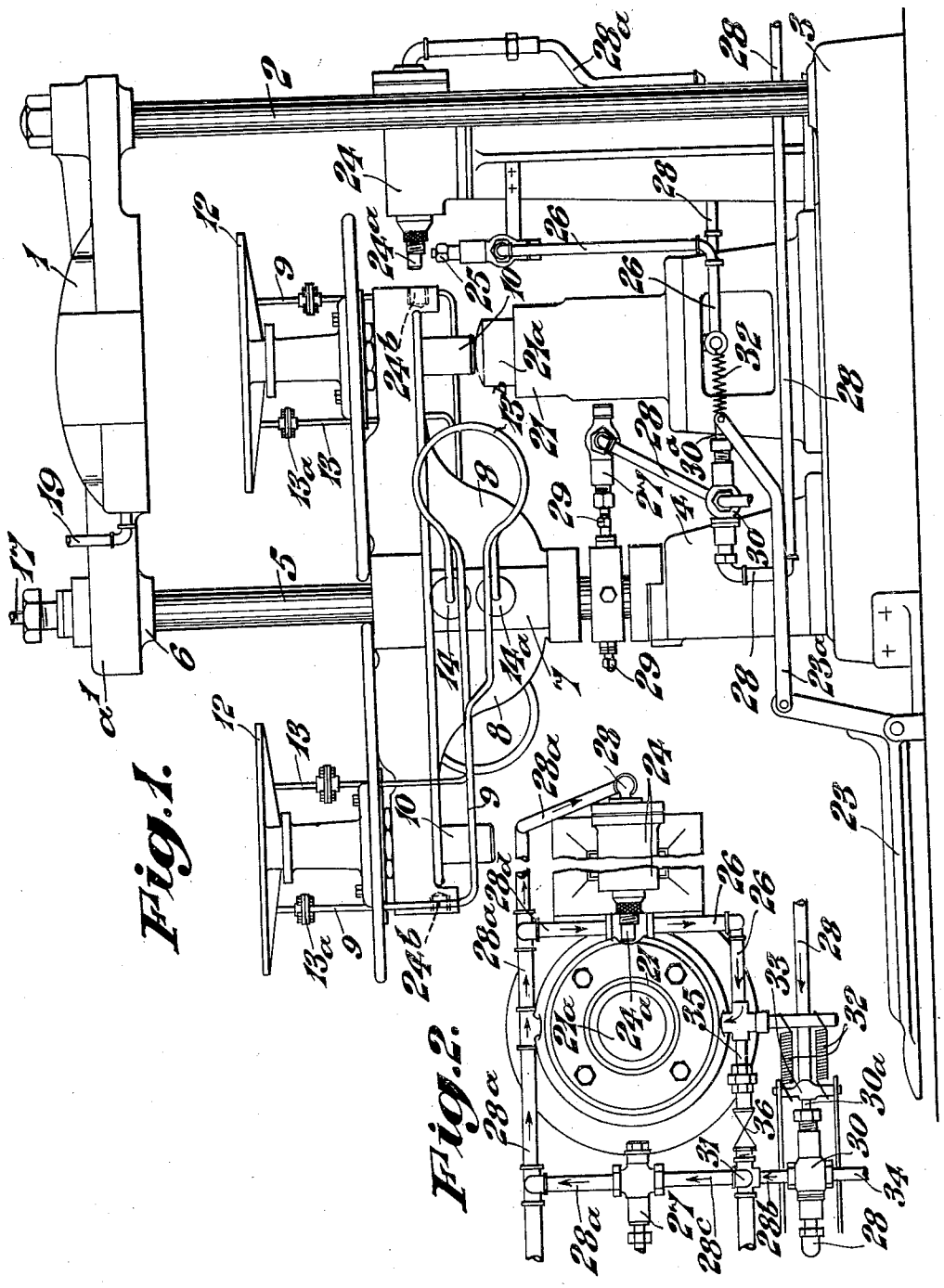


Fig. 1.

Fig. 2.

INVENTOR.
W. R. HOLTTUM.
per George Hughes
ATTORNEY

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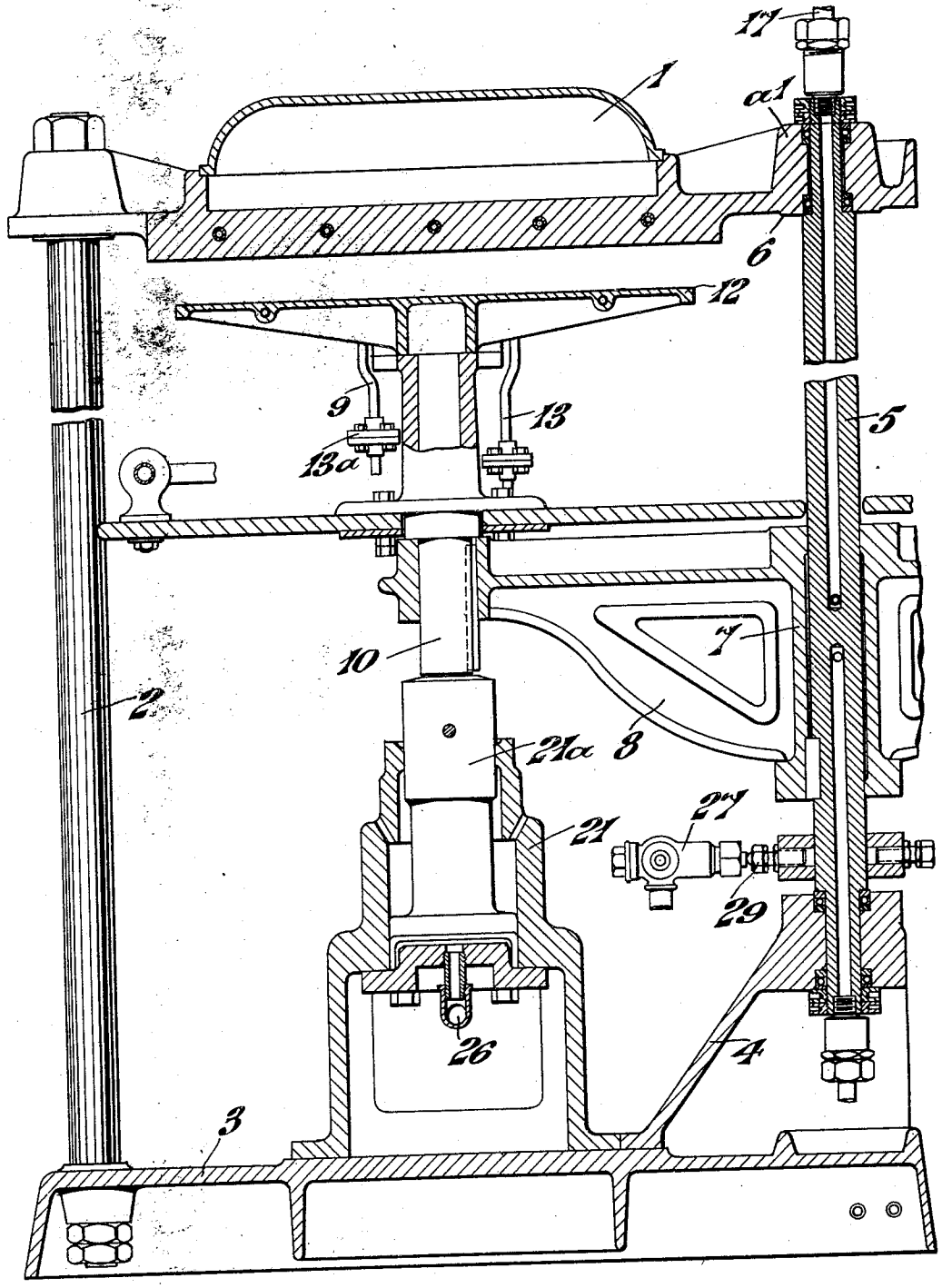


Fig. 3.

INVENTOR
W.R. Holttum.
per George Hughes
ATTORNEY

Patented Apr. 21, 1931

1,802,018

UNITED STATES PATENT OFFICE

WALTER RICHARD HOLTTUM, OF LUTON, ENGLAND

HOT-PRESS FOR PRESSING CLOTHES AND TEXTILE FURNISHINGS

Application filed November 16, 1929, Serial No. 407,755, and in Great Britain April 5, 1929.

This invention relates to improvements in and relating to hot press for pressing clothes and textile furnishings and has for its object to provide a form of press which can be conveniently operated for pressing shirt fronts and other articles.

The invention more particularly relates to hot presses of the type which comprise a frame supporting a steam heated hollow press head, and a structure carrying a pair of relatively movable press members adapted to support articles to be pressed, means being provided for moving one of the said press members towards the said press head.

According to my invention, a hot press is characterized by the provision of means being provided to ensure automatic locking of each press member in the pressing position before the press can be operated.

If desired each of the press members may have a neck band receiving portion whereby a shirt front or the like can be laid flat upon the said press member without the neck band of the shirt or the like being pressed flat between the press head and the press member carrying it.

In order that my invention may be clearly understood and readily carried into effect, I have appended hereto a sheet of drawings illustrating an embodiment of same and wherein,

Fig. 1 is a side elevation of a complete apparatus.

Fig. 2 is a plan view showing the arrangement of conduits.

Fig. 3 is a detail sectional side elevation view showing the arrangement of the ram for applying pressure and the rotary pillar carrying the tables.

Referring to the drawings, the press head 1 is supported by two or more vertical posts 2 rigidly secured to a base 3. Secured on the base 3 is a pedestal 4 acting as a support for a vertical shaft 5 engaged in a bearing 6 in an integral extension a' of the upper member of the press head. Supported for axial rotation about the shaft 5 is a sleeve 7 having extending radially from it in diametrically opposite directions a pair of symmetrical brackets 8 having bosses at their free ends supporting pins 10 depending from a pair of pedestals 11 each supporting a hollow metal table member 12, these tables being adapted to have placed upon them the articles to be pressed.

The tables 12 have steam inlet pipes 13 and outlet pipes 9 leading to them, these pipes leading from the sleeve 7 which has ports $14a$ receiving the pipes 13 and ports 14 to receive the pipes 9 and adapted to register with a radial steam passage of an axial steam passage in the shaft 5. Steam is led into this fixed shaft 5 by a pipe 17 which by means of a T piece can be connected to the steam pipe 19 leading to the press head. If desired a hand operated cock on the pipe 17 can control the admission of steam to both the pipes 17 and 19. Each pipe 13 has a coupling $13a$ to connect the pipes 13 to the tables 12. The pipes 9 and 13 have a bend $13b$ adjacent their points of connection to the ports 14 and $14a$ to provide for the up and down movement of the tables.

The tables are brought in turn beneath the press head by rotating the brackets 8 about the shaft 5. When a table is correctly positioned beneath the press head the ram barrel 21 is operated by opening a valve 27, and the movable element $21a$ of the ram barrel engages the pin 10 and forces the selected table 12 towards the press head. In order to correctly position the tables 12 when the structure supported by the brackets 8 is swung into one of its two operative positions, a pressure fluid operated locking plunger in a cylinder 24 is provided, the movable plunger member $24a$ of this cylinder 24 being adapted under the influence of fluid pressure to engage in a recess $24b$ in the ends of the brackets 8, spring means returning the member $24a$ to its retracted position.

The outward movement of the positioning members $24a$ is utilized to open a spring loaded valve 25 which opens the pressure fluid supply conduit 26 to the ram barrel 21 so that until the selected table is properly positioned the ram $21a$ cannot be oper-

ated to raise the selected pin 10 and its appropriate table 12.

The inflow pressure fluid pipe 28 connected to an air compressor or other suitable source of fluid pressure is connected via a valve 30 to a short pipe 28*b* connected in turn by a T coupling 31 to a pipe 28*c* which by a valve 27 is connected to a conduit 28*a* leading to the rear end of the cylinder 24. Normally the valve 27 is held by a spring in such position that the pressure fluid cannot enter the pipe 28*a*, and as the valve 27 is opened automatically only when the selected recess 24*b* comes opposite the positioning member 24*a*, the tables are automatically locked in the correct position as soon as they reach such position, by reason of the pressure fluid now flowing through the pipe 28*a* to the cylinder 24. The valve 27 is operated by reason of one of a pair of diametrically opposite spherical headed radial studs 29 on the hollow shaft 5 engaging and pressing inwards the spring loaded movable valve member of the valve 27.

As soon as the tables are locked as above described the valve 25 is opened by reason of the outward movement of the locking member 24*a* and the presure fluid in the pipe 28*a* can now flow through a branch pipe 28*d* from the pipe 28*a*, through the opened valve 25 and then through the pipe 26 into the base of the ram cylinder 21 with a consequent raising of the ram 21*a* and the application of pressure to the garment on the appropriate table.

When the desired pressure has been applied, the treadle 23 is depressed by the operator and this results in the valve 30 being adjusted so as to cut off the flow of pressure fluid from the pipe 28 and to open a normally closed pressure fluid outlet 34 leading from the valve 30 whereby all pressure fluid on the ram side of the valve 30 will escape to atmosphere and the ram 21*a* will fall to release the pressure on the garment, and also the locking member 24*a* will be retracted to release the table.

The foot treadle 23 is connected by links 23*a* to a transverse bridge member 33 adapted to engage a rod 30*a* of the valve 30 to change the position of the valve 30, springs 32 maintaining the treadle and bridge piece 33 in their normal position. The pressure fluid escapes from the ram 21 via a pipe 35 branching from the end of the pipe 28*a* into the T piece 31 and containing a one-way valve 36 which prevents the pressure fluid flowing in the reverse direction into the ram through the pipe 35.

When the appropriate striker 29 carried by the pillar 5 strikes the movable member of the valve 27 the pressure fluid is admitted to the cylinder 24 and the member 24*a* engages in the appropriate recess 24*b* to lock the tables against movement. During this locking operation the valve 25 is opened by the member 24*a* and admits the pressure fluid to the ram barrel 21, and the appropriate pin 10 is engaged by the movable ram member 21*a* and the desired pressure applied. The presure can be cut off and released by depressing the foot pedal 23.

What I claim is:—

1. A hot press of the fluid pressure operated type, a press head, tables to receive garments, a pressure fluid operated ram for effecting pressure between one of the press members and the press head, a fluid pressure operated device for locking the tables in operative position connected to the source of pressure fluid supply, a main valve adapted to be opened automatically upon bringing a table to a pressing position, a conduit connecting said valve to the locking device and to the source of pressure fluid supply, and a further valve automatically operated from the said locking device for admitting pressure fluid to the said ram, and means for cutting off the pressure fluid supply and releasing the pressure on the ram.

2. A hot press of the fluid pressure operated type, a press head, tables to receive garments, a pressure fluid operated ram for effecting pressure between one of the press members and the press head, a fluid pressure operated device for locking the tables in operative position connected to the source of pressure fluid supply, a main valve adapted to be opened automatically upon bringing a table to a pressing position, a conduit connecting said valve to the locking device and to the source of pressure fluid supply, and a further valve automatically operated from the said locking device for admitting pressure fluid to the said ram, and means for cutting off the pressure fluid supply and releasing the pressure on the ram, an axially rotatable vertical pillar carrying the movable press tables, a projection on the said pillar for each said press table, said projection being adapted to successively engage and operate said main valve in unison with the correct operative positioning of the press tables.

3. A hot press of the fluid pressure operated type comprising a pressure ram, a rotary vertical pillar, press tables carried by said pillar, a projection on said pillar for each table, a normally closed main valve adapted to be engaged and opened by one of said projections, a manually operated valve connecting said main valve to a source of pressure fluid supply, a conduit connecting said main valve to a pressure fluid operated locking device adapted to lock each table in the pressing position, a normally closed valve for connecting said conduit to the said ram and adapted to be opened by

said locking member when it moves to the locking position, and a pressure fluid escape passage opened simultaneously with the closing of said manually operated valve.

4. A hot press of the fluid pressure operated type comprising a pressure ram, a hollow steam conveying vertical pillar carrying a pair of pressure tables, steam conduits connecting the said pillar to the tables, a pair of projections fixed to said pillar and a main valve adapted to be successively engaged by said projections, a sliding locking member actuated by fluid pressure, and a conduit connecting it and the main valve, a pipe from said conduit leading to the ram, a normally closed valve with said pipe, a projection on said sliding locking member adapted to engage and open said latter valve to admit pressure fluid to the ram, a pressure fluid escape conduit from said ram, a one-way valve in said escape conduit cutting off connection of the ram to the source of supply of the pressure fluid through the escape conduit, and a manually operated lever for simultaneously opening said escape conduit to atmosphere and cutting off the supply of pressure fluid to the said main valve.

5. A hot press of the fluid pressure operated type comprising a pressure ram, a rotary vertical pillar, press tables carried by said pillar, a projection on said pillar for each table, a normally closed main valve adapted to be engaged and opened by one of said projections, a manually operated valve connecting said main valve to a source of pressure fluid supply, a conduit connecting said main valve to a pressure fluid operated locking device adapted to lock each table in the pressing position, a normally closed valve for connecting said conduit to the said ram and adapted to be opened by said locking member when it moves to the locking position, and a pressure fluid escape passage opened simultaneously with the closing of said manually operated valve, a foot treadle actuating said manually operated valve, and a one-way valve in said fluid pressure escape passage, said manually operated valve containing a connection to the escape passage and a connection to said main valve.

6. A hot press of the fluid pressure operated type comprising a pressure ram, a rotary vertical pillar, press tables carried by said pillar, a projection on said pillar for each table, a normally closed main valve adapted to be engaged and opened by one of said projections, a manually operated valve connecting said main valve to a source of pressure fluid supply, a conduit connecting said main valve to a pressure fluid operated locking device adapted to lock each table in the pressing position, a normally closed valve for connecting said conduit to the said ram and adapted to be opened by said locking member when it moves to the locking position, and a pressure fluid escape passage opened simultaneously with the closing of said manually operated valve, said locking device being a fluid pressure operated plunger, supports slidably carrying said tables and secured to the said pillar, and recesses in said supports adapted to successively receive said plunger.

7. A hot press of the fluid pressure operated type comprising a pressure ram, a hollow steam conveying vertical pillar carrying a pair of pressure tables, steam conduits connecting the said pillar to the tables, a pair of projections fixed to said pillar and a main valve adapted to be successively engaged by said projections, a sliding locking member actuated by fluid pressure, and a conduit connecting it and the main valve, a pipe from said conduit leading to the ram, a normally closed valve with said pipe, a projection on said sliding locking member adapted to engage and open said latter valve to admit pressure fluid to the ram, a pressure fluid escape conduit from said ram, a one-way valve in said escape conduit cutting off connection of the ram to the source of supply of the pressure fluid through the escape conduit, and a manually operated lever for simultaneously opening said escape conduit to atmosphere and cutting off the supply of pressure fluid to the said main valve, said sliding locking member being a fluid pressure operated plunger, supports slidably carrying said tables and secured to the said pillar, and recesses in said supports adapted to successively receive said plunger.

In witness hereof I have signed this specification.

WALTER RICHARD HOLTTUM.