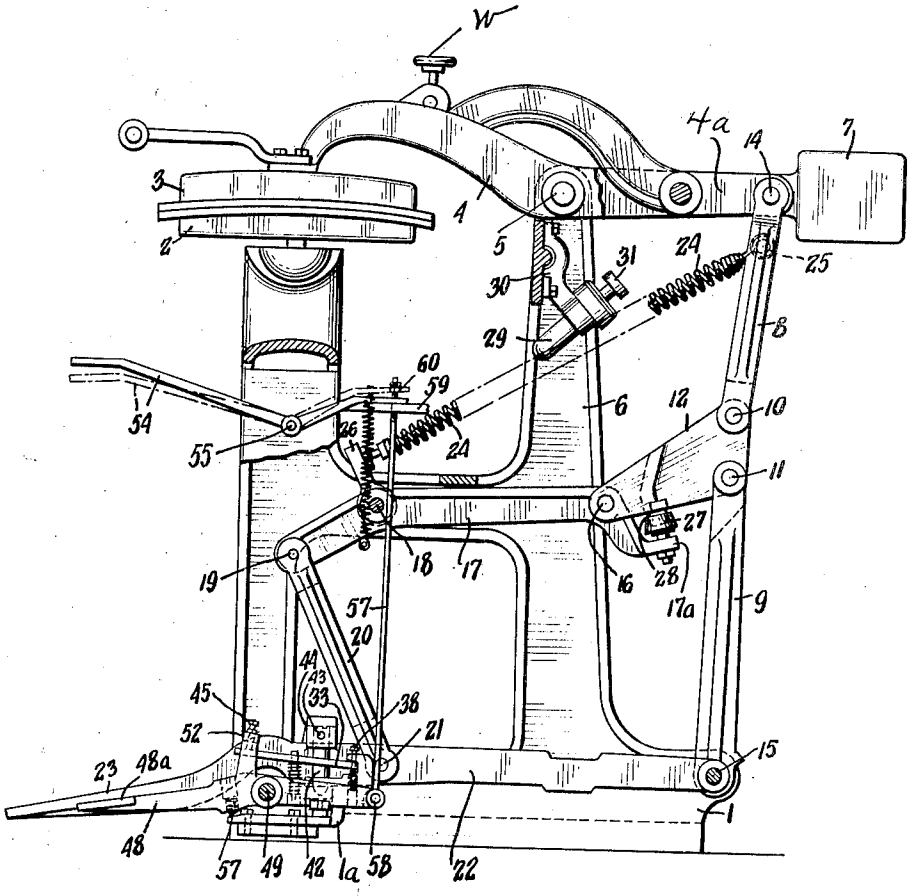
April 6, 1943. W. A. HOCH 2,315,704

GARMENT PRESSING MACHINE

Filed April 18, 1940 4 Sheets-Sheet 1

FIG. 1



Walter A. Hoch INVENTOR.

BY Mock & Blum

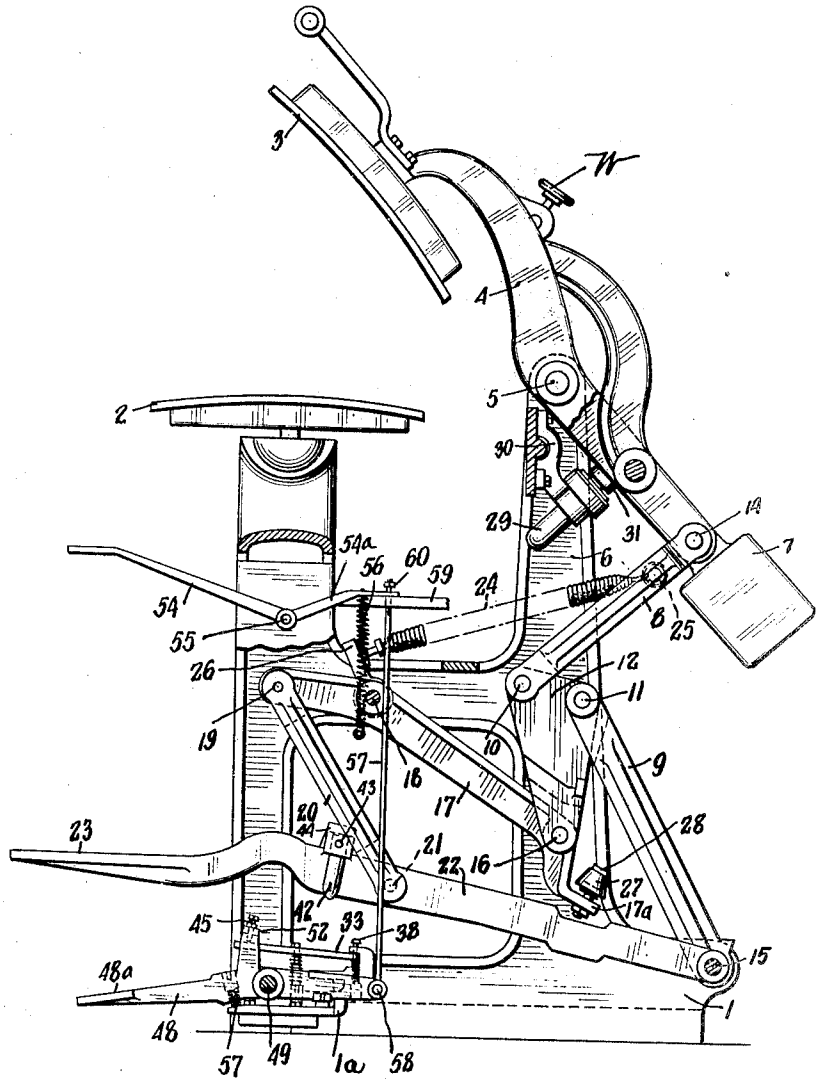
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April 6, 1943. W. A. HOCH 2,315,704

GARMENT PRESSING MACHINE

Filed April 18, 1940 4 Sheets-Sheet 2

FIG. 2



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April 6, 1943. W. A. HOCH 2,315,704

GARMENT PRESSING MACHINE

Filed April 18, 1940 4 Sheets-Sheet 3

FIG. 3

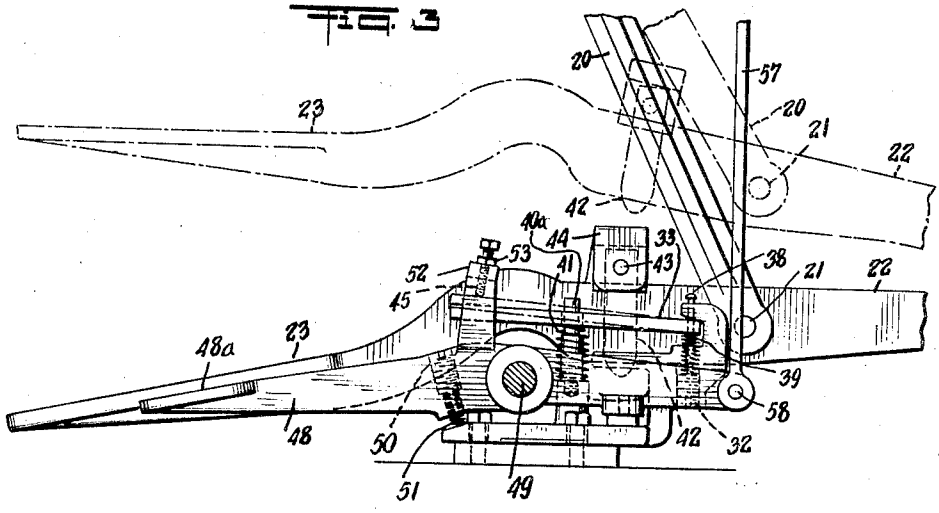


FIG. 4

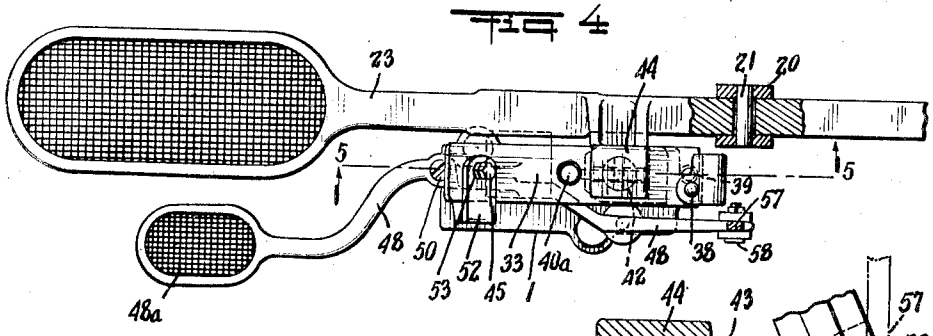
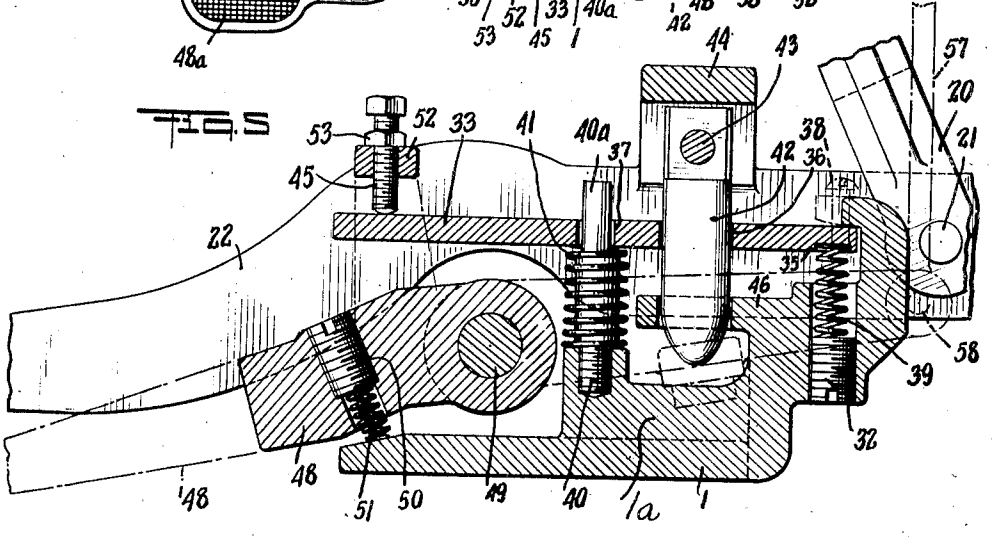


FIG. 5



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April 6, 1943. W. A. HOCH 2,315,704

GARMENT PRESSING MACHINE

Filed April 18, 1940 4 Sheets-Sheet 4

FIG. 9

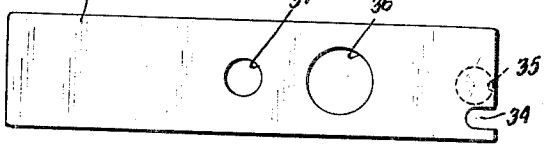
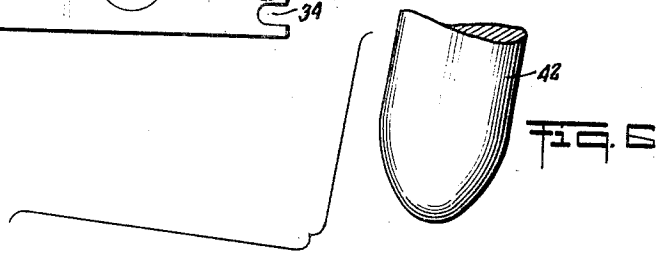


FIG. 6



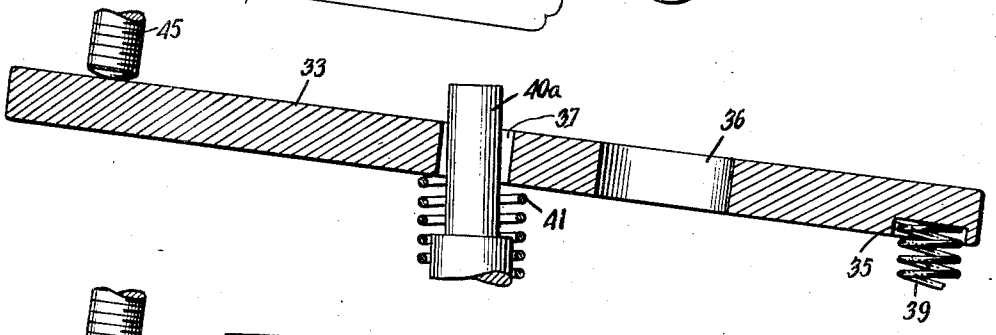


FIG. 7



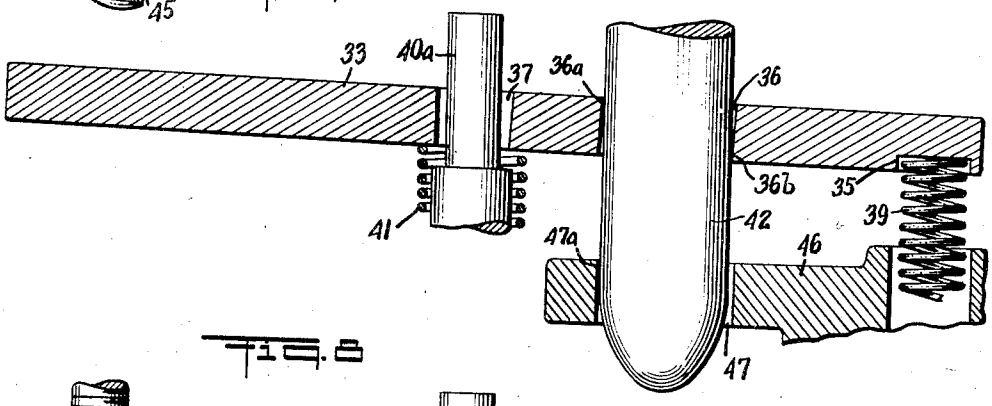
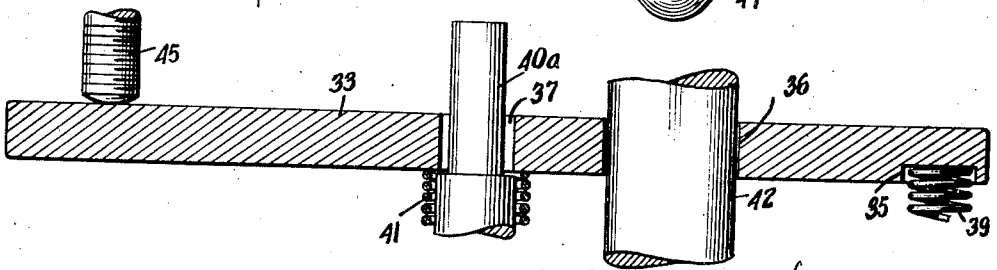


FIG. 8



Walter A. Hoch INVENTOR.

BY Mock & Blum

ATTORNEYS

Patented Apr. 6, 1943 2,315,704

UNITED STATES PATENT OFFICE

2,315,704

GARMENT PRESSING MACHINE

Walter A. Hoch, Forest Hills, N. Y., assignor to New York Pressing Iron Company, Inc., New York, N. Y., a corporation of New York

Application April 18, 1940, Serial No. 330,285

5 Claims. (Cl. 38—36)

My invention relates to a new and improved garment pressing machine.

One of the objects of my invention is to provide improved locking means for holding the press in its closed position.

Another object of my invention is to provide a simple and noiseless lock which can be readily released by the operator by means of a hand lever or a foot lever, which remains stationary when the press is closed. The improved lock is free from backlash so that the closing lever of the press cannot move backwards, after the closing pressure thereon is released.

Another object of the invention is to provide a lock which will hold the press closed under light pressure or under heavy pressure, and which will be effective even if the padding of the buck wears or becomes compressed. This improved lock permits the pressing of garments of different thicknesses, and it permits the adjustment of the head relative to the buck.

Another object of the invention is to provide an improved bumper for cushioning the operation of the mechanism for closing the press.

Other objects of my invention will be set forth in the following description and drawings which illustrate a preferred embodiment, it being understood that the above statement of the objects of my invention is intended to generally explain the same without limiting it in any manner.

Fig. 1 is a side elevation of the press, the representation of certain of the parts having been omitted in order to show the remaining parts more clearly. In this view the press is shown in its closed position.

Fig. 2 is a side elevation similar to Fig. 1, showing the press in its open position.

Fig. 3 is an enlarged detail elevation of the lock mechanism for holding the press in its closed position. When the parts are in the full line position shown in Fig. 3, the press is in the closed position, and when said parts are in the broken line position shown in Fig. 3, the press is open.

Fig. 4 is a top view of Fig. 3, with the parts shown in the full line position of Fig. 3.

Fig. 5 is an enlarged sectional view on the line 5—5 of Fig. 4. In this figure, the locking plate 33 is shown in its depressed release position.

Fig. 6 is an enlarged detail view, partially in elevation and partially in section, showing the locking plate 33 of the lock mechanism in its normal inoperative position, and showing the locking bolt 42 in the position which it occupies when the press is open.

Fig. 7 is a view similar to Fig. 6, showing the same parts when the press is closed and locked. This figure illustrates the operative position of the locking plate.

Fig. 8 is generally similar to Figs. 6 and 7, and it shows how the locking plate 33 has been turned counter-clockwise from the position shown in Fig. 7, in order to release the bolt 42.

Fig. 9 is a top plan view of the locking plate.

The invention is shown in association with a press which is mainly of standard design. The press has a frame which is provided with a base 1, and the press has the usual buck 2 and the usual head 3. The head 3 is connected to a lever 4 which is pivotally mounted at 5 to the standard 6. The standard 6 is integral with base 1 and it is part of the frame of the press. The lever 4 has the usual counterweight 7.

The press is closed by means of toggle-levers 8 and 9, which are respectively pivotally connected at 10 and at 11 to the knee-lever 12. The lever 8 is pivotally connected at 14 to the pressure adjustment arm 4a, which turns in unison with lever 4 around pivot pin 5. A pressure-wheel W adjusts the angle between arm 4a and lever 4. This adjustment is conventional and well-known so that it requires no further description. The lever 9 is pivotally connected at 15 to the base 1. The knee-lever 12 is pivotally connected at 16 to a lever 17 which is pivotally connected at 18 to the frame of the machine. The lever 17 is pivotally connected at 19 to a link 20, which is pivotally connected at 21 to a lever 22 which is connected by the pivot member 15 to the base 1 of the machine. The lever 22 is provided with a treadle portion 23. Any other suitable means may be used for opening and closing the press.

A tension spring 24 has one end thereof connected at 25 to the lever 8 and the other end of said tension spring 24 is connected to a lug 26, which is fixed to the frame of the machine. The tension spring 24 automatically opens the press, when the lever 22 is released.

The bumper device comprises a cup or holder 27, in which a resilient member 28 is held. This resilient bumper 28 can be made of vulcanized rubber or other suitable material. The cup 27 is adjustably connected to the arm 17a of the lever 17. When the press is closed, the resilient member 28 abuts a portion of the bottom wall of the knee-lever 12, thus producing the necessary cushioning effect during the operation of closing the press. When the press is closed, the resilient member 28 is under compression.

The shock-absorbing means which include

cylinder 29 are conventional. Said shock-absorbing means are of the oil-hydraulic type.

The cylinder 29 is held rigidly to the standard 6 of the frame of the machine, by means of a bracket or arms 30. A head 31 is connected to the piston rod of a piston which is movably located in the cylinder 29. When the press is moved to the open position which is shown in Fig. 2, the arm 4a abuts and it inwardly pushes the head 31, and since this head 31 is moved inwardly under pressure, this cushions the opening movement of the press.

Referring to Fig. 5, the casting 1a is suitably connected to the base 1. Said casting 1a is provided with a vertical tapped bore in which a screw 32 is held adjustably. A locking plate 33, which is shown in Figs. 5 and 9, is provided at one end wall thereof with a slot 34 which is closed at its inner end. The bottom wall of the plate 33 is also provided with a recess 35. Said plate 33 is also provided with a large bore 36, and with a small bore 37. The casting or bracket 1a is provided with an angular lug, part of which overlies and abuts a part of the top wall of the locking plate 33. The shank of a screw 38 is held in the tapped bore of said overlying part of said lug, and the shank of said screw 38 is located in the slot 34 of the aforesaid end wall of the plate 33. The plate 33 is thus prevented from twisting or turning relative to the vertical axis of the bore 37, but said plate is free to turn up and down. A compression spring 39 has one end thereof abutting the upper end of the screw 32 and the other end of said spring 39 is located in the recess 35. The inner end of the locking plate 33 is thus held yieldably against said overlying lug-portion, and said spring 39 and said overlying part of the lug operate as a pivot for the turning movement of plate 33. The normal and inoperative position of the locking plate 33 is shown in Figs. 2 and 5.

A pin 40 has a threaded lower end which is screwed into a suitable tapped recess of the casting 1a. Said pin 40 has a reduced top portion 40a which extends through the bore 37. A compression spring 41 has its lower end abutting a lug of the casting 1a and its upper end abutting the bottom wall of the plate 33. When the plate 33 is in the normal position shown in Fig. 5, it can be turned counter-clockwise through a short arc, thus compressing the spring 41, before the bottom wall of the plate 33 abuts a stop-shoulder which is provided on the pin 40.

The locking bolt 42 is connected by a pin 43 to a bracket or extension 44 of the lever 22. This bolt 42 is offset relative to the lever 22. When the lever 22 is turned so as to close the press, the plate 33 initially remains in the upwardly inclined position which is shown in Fig. 6. The bolt 42 enters the bore 36 of the plate 33, before the press is closed. The bolt 42 first turns plate 33 downwardly, until bolt 42 fully enters bore 36, so that bolt 42 moves plate 33 approximately to the position shown in Fig. 7. When the press is closed, the lower end of the bolt 42 is located in the bore of an arm or bracket 46 of the casting 1a. Fig. 7 shows the position of the bolt 42 when the press is closed and locked. As shown in Fig. 7, the upper edge wall 36a of the bore 36 then makes partial contact with the bolt 42, and the lower edge wall 36b of the bore 36 makes partial contact with the bolt 42. However, the wall of bore 47 has little or no locking action on bolt 42, and said bore 47 acts substantially only as a guide for bolt 42. The diameter of bore 36 exceeds the maximum diameter of bolt 42. This has a cylindrical body whose end is tapered to bullet-shape. The upper edge wall 47a of the bore 47 of the arm 46 also makes partial contact with the bolt 42. The compression spring 41 urges the plate 33 to turn in the clockwise direction, in the view shown in Fig. 7. The plate 33 thus acts as a locking plate and said plate 33 must be turned in a counter-clockwise direction from the position shown in Fig. 7, in order to release the bolt 42. When the press is locked, the axis of bolt 42 is vertical or substantially vertical, and it is inclined to the axis of bore 36. The friction between bolt 42 and the wall of bore 36 is sufficient to hold the bolt 42 in its locking position against the force of spring 24.

In order to release the bolt 42, the plate 33 is therefore turned counter-clockwise from the position shown in Fig. 7 to the position shown in Fig. 8, in which position the vertical axis of the bore 36 is parallel to the vertical axis of the bolt 42. The plate 33 is thus turned by means of a release lever 48. The lever 48 is turnably mounted on a pivot pin 49, which is suitably connected to the frame of the press. The lever 48 is provided with a tapped bore, in which a screw 50 is adjustably held. When the lever 48 is in the normal position shown in Fig. 3, the compression spring 51 has one end thereof abutting the base 1 and the other end thereof abutting the screw 50. This spring prevents lever 48 from turning counter-clockwise, save when pressure is applied to said lever. Fig. 5 shows said lever 48 in the position to which it is depressed in order to move the plate 33 to the release position which is shown in Fig. 5, in which the axis of bore 36 is vertical and parallel to the axis of bolt 42. The lever 48 has an upwardly extending yoke 52. The top wall of said yoke has a tapped bore, in which a pressure screw 45 is adjustably held. The screw 45 is held in its adjusted position by means of a lock nut 53. The top wall of plate 33 abuts the tip of the screw 45, when said plate 33 is in its normal inoperative position. When the press is locked, the plate 33 is spaced from the tip of the screw 45.

When the lever 48 is turned to the release position shown in Fig. 5, its screw 45 contacts with the plate 33, to turn said plate to the release position which is shown in Fig. 8. The lever 48 is provided with a treadle 48a.

A manually operated control can be used instead of the foot-operated control 48a. As shown in Fig. 2, a lever 54 is turnably connected at 55 to the frame of the machine. A tension spring 56 has the upper end thereof connected to the lever 54, and the lower end of said spring 56 is connected to the frame of the machine. The spring 56 normally and yieldingly holds the lever 54 in the position shown in Fig. 2. The lower end of a link 57 is pivotally connected at 58 to the lever 48. The upper end of the link 57 passes through a guide bore of an arm 59 of the frame. The upper end of the link 57 is provided with a vertically adjustable head 60. The arm 54a of the lever 54 is bent so that when the lever 54 is turned counter-clockwise, referring to Fig. 2, said arm 54a will contact with the head 60, thus upwardly moving the link 57 and turning the lever 48 counter-clockwise. The action is the same as though the lever 48 were turned by the foot of the operator. The spring 56 normally and yieldingly holds the arm 54a abutting the arm 59.

When the press is closed by exerting pressure upon the treadle 23 of the lever 22, the lever 48 and the lever 54 remain stationary. The bolt

42 will be retained frictionally by the locking plate 33, when the bolt 42 is in the position shown in Fig. 7, and said plate 33 will frictionally hold said bolt 42, even if it is in advance of the position shown in Fig. 7. Therefore, the plate 33 is fully effective to hold the press against the opening force of the spring 24, when the press is closed under light pressure or under heavy pressure.

Likewise, the improved lock makes it possible to hold the press closed when pressing thick garments or thin garments. After a press is used for some time, the body of the buck becomes pressed down so that the height of the buck is lowered. In ordinary locking devices for garment presses, the lock does not operate efficiently under such conditions. In the usual type of locking device, after the press has been closed, it is necessary to move a lever which controls the latch or lock. If the head is not adjusted properly relative to the effective height of the buck, the ordinary latch permits a slight opening movement of the press. This is eliminated according to my invention. In using the ordinary lock, when the press is closed, the press can open through a slight distance even under proper adjustment, thus permitting a backlash or rearward movement of the closing treadle. This is prevented by the improved lock disclosed herein.

Likewise, even if the press is not fully closed, the plate 33 engages the bolt 42 so as to prevent the press from opening, when the operator does not expect this opening movement. The location of the resilient bumper 28 is also advantageous. This bumper is located directly between the lever 17 which is connected to the foot-operated lever 22 and the knee-lever 12. Since the respective pivot pins necessarily have a slight play in their respective bearings, this provides a more easy and gradual compression of the bumper 28, when the press is closed under pressure. In the position of the toggle levers shown in Fig. 1, the operating toggle is close to but anterior to the position of dead center. This permits the automatic opening of the press by the spring 24, when the lock is released. The location of the bumper 28 eases the movement of the closing toggle, as it moves close to this point of dead center, without arriving at said point. Likewise, the bumper 28 prevents the closing toggle from being moved up to the point of dead center or beyond said point. There is therefore a coöperation between the bumper 28 and the improved locking device, because the improved locking device makes it possible to utilize a toggle or other lever system which is moved close to the point of dead center.

The member 42 may be designated as a locking member which is connected to the press-operating means, and which is movable in unison with said press-operating means. The plate 33 may be designated as a locking member which is turnably or pivotally connected to the frame of the machine. The spring 39 and the member 38 provide a pivotal connection which is superior to an ordinary pivot pin, because the spring 39 can yield when the releasing pressure is applied to the plate 33.

The invention is not restricted to a member 42 which has a cylindrical cross-section, as said member 42 may be of any shape. Of course the shape of the bore 36 must correspond to the shape of the cross-section of the member 42, to an extent sufficient to secure the releasable locking action previously described. The bore 36 is oversized relative to the cross-section of the member 42, so that the member 42 is released by the member 33, when the member 33 is in the predetermined release position which is shown in Fig. 8. When the press is closed, the lever 48 can be turned until its pressure screw 45 is moved downwardly from the position shown in Fig. 7, until the tip of screw 45 abuts plate 33. Said screw 45 forces plate 32 to the position shown in Fig. 8. The clearance of bolt 42 in bore 36 is sufficient to enable bolt 42 to move out of bore 36, to the position shown in Fig. 2. When bolt 42 is thus moved to the position shown in Fig. 2, said bolt moves along an arc of small curvature.

While I have shown one type of friction clutch for holding the press against opening, the invention is not restricted to any type of friction clutch or to any type of locking or holding means.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. A garment press having press-operating means and a frame, and a buck fixed to said frame and a head movable up and down relative to said buck, said press-operating means being adapted to operate said head, a first member fixed to a part of said press-operating means and automatically movable in unison with said press-operating means, a locking-member turnably connected to said frame and movable independently of said press-operating means, said first member being moved towards said locking-member by said press-operating means when said head is moved towards said buck by said press-operating means during the closing movement of said press, said locking-member having a bore which is oversized relative to the cross-section of the part of said first member which enters said bore when the press is closed, the locking-member being located so that the first member enters said bore during the closing movement of the press, said bore and said first member being shaped so that said first member moves said locking-member in unison with said first member when said first member is moved in unison with said press-operating means during the movement of the head towards the buck, resilient means adapted to urge said locking-member to a position relative to the first member when the first member is in said bore in which the wall of said bore frictionally locks said first member against movement out of said bore, a release member adapted to move said locking-member against the force of said resilient means to a position in which the locking-member releases the first member.

2. A garment press having press-operating means and a frame, and a buck fixed to said frame and a head movable up and down relative to said buck, said press-operating means being adapted to operate said head, a first member fixed to a part of said press-operating means and automatically movable in unison with said press-operating means, a locking-member turnably connected to said frame and movable independently of said press-operating means, said first member being moved toward said locking-member by said press-operating means when said head is moved towards said buck by said press-operating means during the closing movement of said press, said locking-member having a bore which is oversized relative to the cross-section of the part of said first member which enters said bore when the press is closed, the locking-

member being located so that the first member enters said bore during the closing movement of the press, the locking-member having a normal position in which said bore is located so that the first member enters said bore at an angle to the wall of said bore when said first member is moved in unison with the press-operating means during the movement of the head towards the buck, so that the first member then contacts with the wall of said bore and the first member then moves the second locking-member in unison therewith away from said normal position, resilient means adapted to urge the locking-member towards said normal position, the wall of said bore frictionally locking said first member against movement out of said bore.

3. A garment press having press-operating means and a frame, and a buck fixed to said frame and a head movable up and down relative to said buck, said press-operating means being adapted to operate said head, a first member fixed to a part of said press-operating means and automatically movable in unison with said press-operating means, a locking-member turnably connected to said frame and movable independently of said press-operating means, said first member being moved towards said locking-member by said press-operating means when said head is moved towards said buck by said press-operating means during the closing movement of said press, said locking member having a bore which is oversized relative to the cross-section of the part of said first member which enters said bore when the press is closed, the locking-member being located so that the first member enters said bore during the closing movement of the press, the locking-member having a normal position in which said bore is located so that the first member enters said bore at an angle to the wall of said bore so that the first member then contacts with the wall of said bore when said first member is moved in unison with said press-operating means during the movement of the head towards the buck, and the first member then moves the locking-member in unison therewith away from said normal position, resilient means adapted to urge the locking-member towards said normal position, the wall of said bore frictionally locking said first member against movement out of said bore, a release member movable independently of said press-operating means, said release member being adapted to turn the locking-member relative to the first member so as to release the first member.

4. A garment press having press-operating means and a frame, and a buck fixed to said frame and a head movable up and down relative to said buck, said press-operating means being adapted to operate said head, a stud connected to said press-operating means and movable in unison with said press-operating means, a plate having a slot at an end wall of said plate and also having a bore between the end walls of said plate, a pin fixed to the frame of the machine and passing upwardly through said slot, said frame having an abutment which overlies the top of the end portion of said plate in which said slot is located, a first spring urging said end portion of the plate against said abutment, a second spring urging said plate to a normal position in which the axis of said bore is inclined to the axis of said stud when the stud is moved to enter said bore, the bore being oversized relative to the cross-section of the stud, the stud engaging said wall and turning the plate in unison with the movement of said stud and said press-operating means during the closing movement of the press, said wall frictionally engaging said stud when the press is closed, a release member adapted to turn the plate relative to the stud so as to release the frictional grip between said wall and said stud, said release member being movable independently of said press-operating means.

5. A garment press having press-operating means and a frame, and a buck fixed to said frame and a head movable up and down relative to said buck, said press-operating means being adapted to operate said head, a stud connected to said press-operating means and movable in unison with said press-operating means, a plate having a slot at an end wall of said plate and also having a bore between the end walls of said plate, a pin fixed to the frame of the machine and passing through said slot, said frame having an abutment which overlies the top of the end portion of said plate in which said slot is located, a first spring urging said end portion of the plate against said abutment, a second spring urging said plate to a normal position in which the axis of said bore is inclined to the axis of said stud when the stud is moved to enter said bore, the bore being oversized relative to the cross-section of the stud, the stud engaging said wall and turning the plate in unison with the movement of said stud during the closing movement of the press, said wall frictionally engaging said stud when the press is closed, a release member adapted to turn the plate relative to the stud so as to release the frictional grip between said wall and said stud, said release member being movable independently of said press-operating means, said press-operating means including a lever pivoted to the frame of the machine, a knee-lever pivotally connected to said lever, a pair of arms pivoted to said knee-lever at spaced points, one of said arms being pivotally connected to the frame of the machine, the other of said arms being connected to the head of the press, said lever having an extension which is provided with a resilient bumper, said bumper contacting with said knee-lever when the press is closed, said press-operating means being in advance of dead center when the press is closed.

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