

Jan. 31, 1933.

J. ZIMARIK

1,895,958

PRESS

Filed Nov. 15, 1928

3 Sheets-Sheet 1

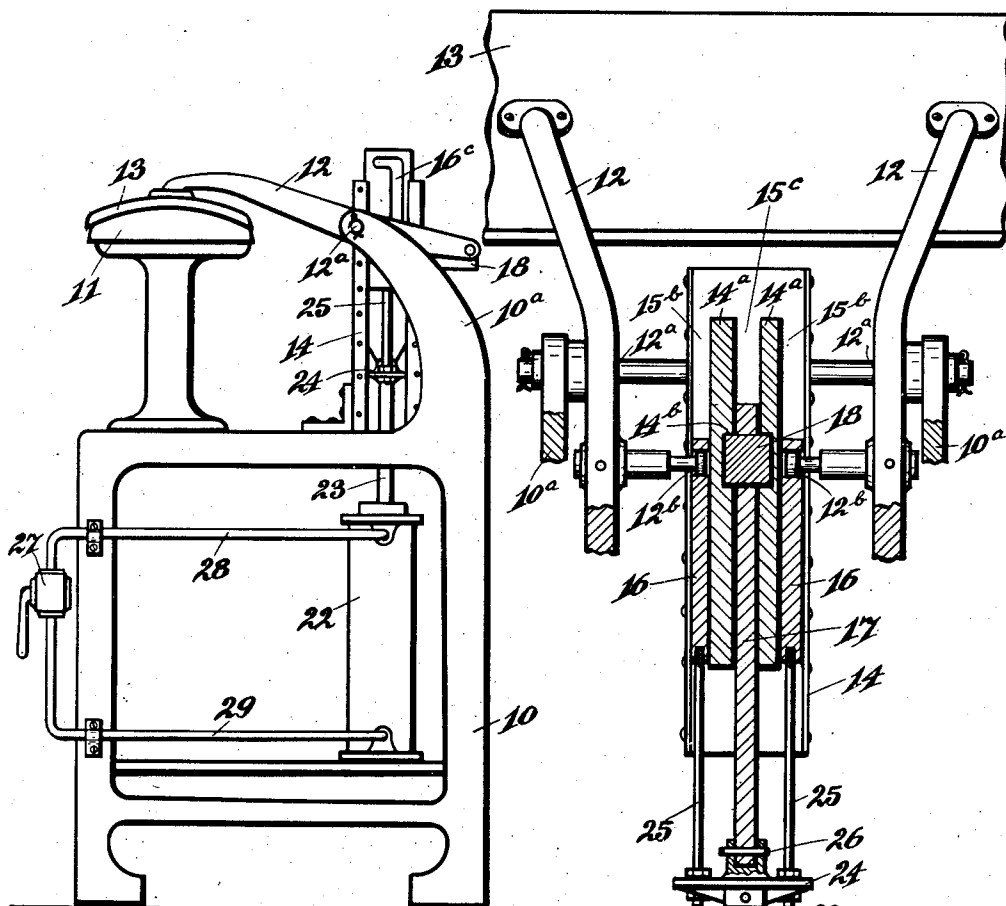


FIG. 1.

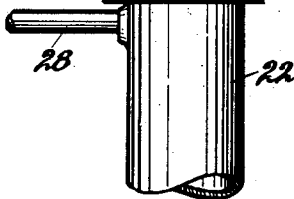


FIG. 3

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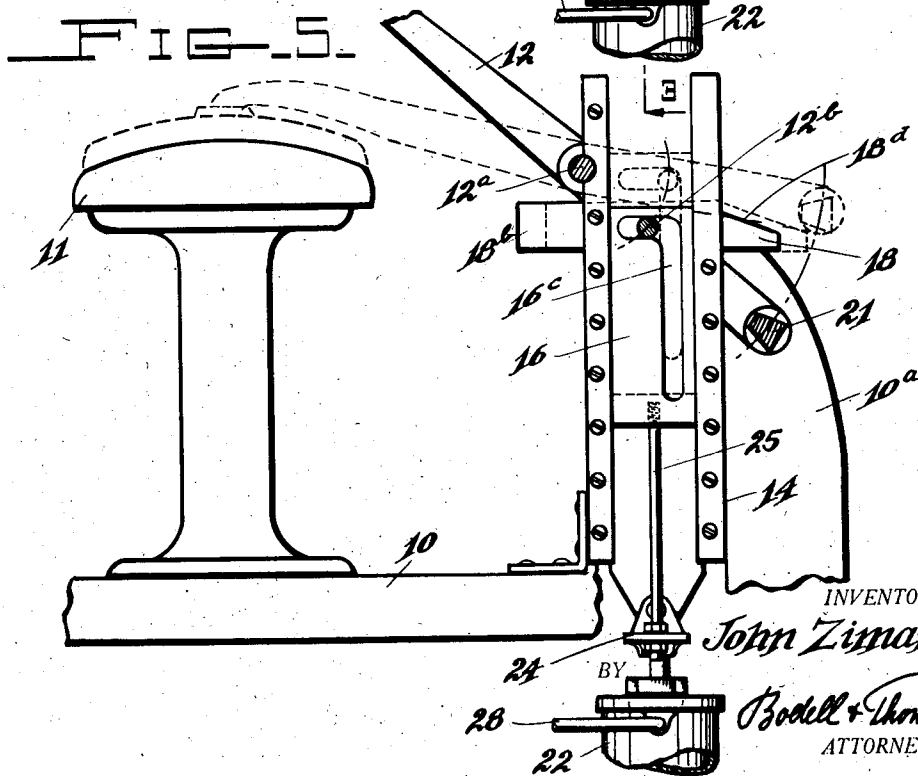
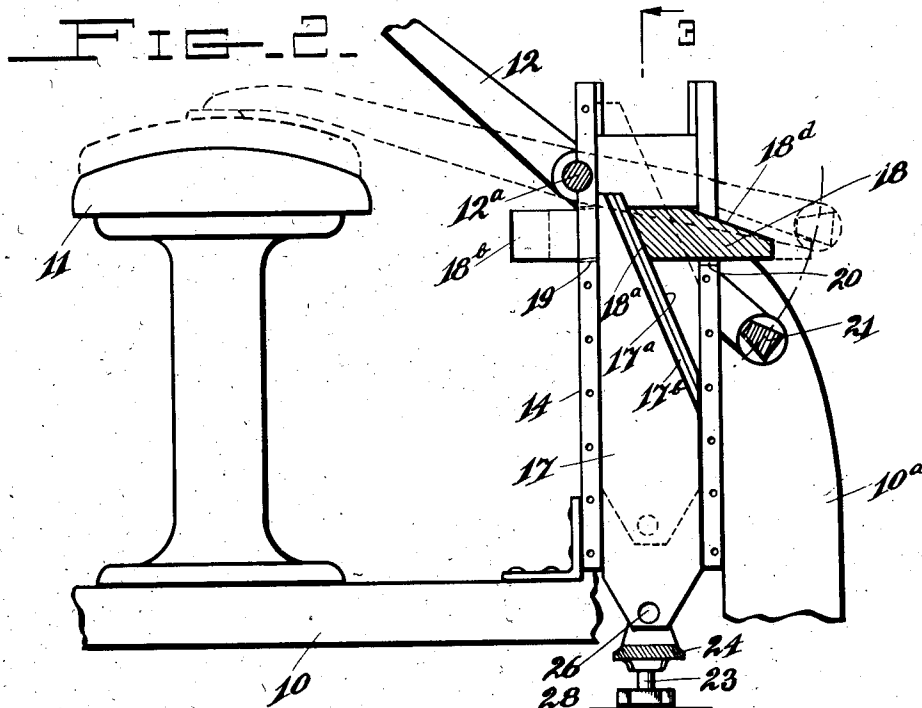
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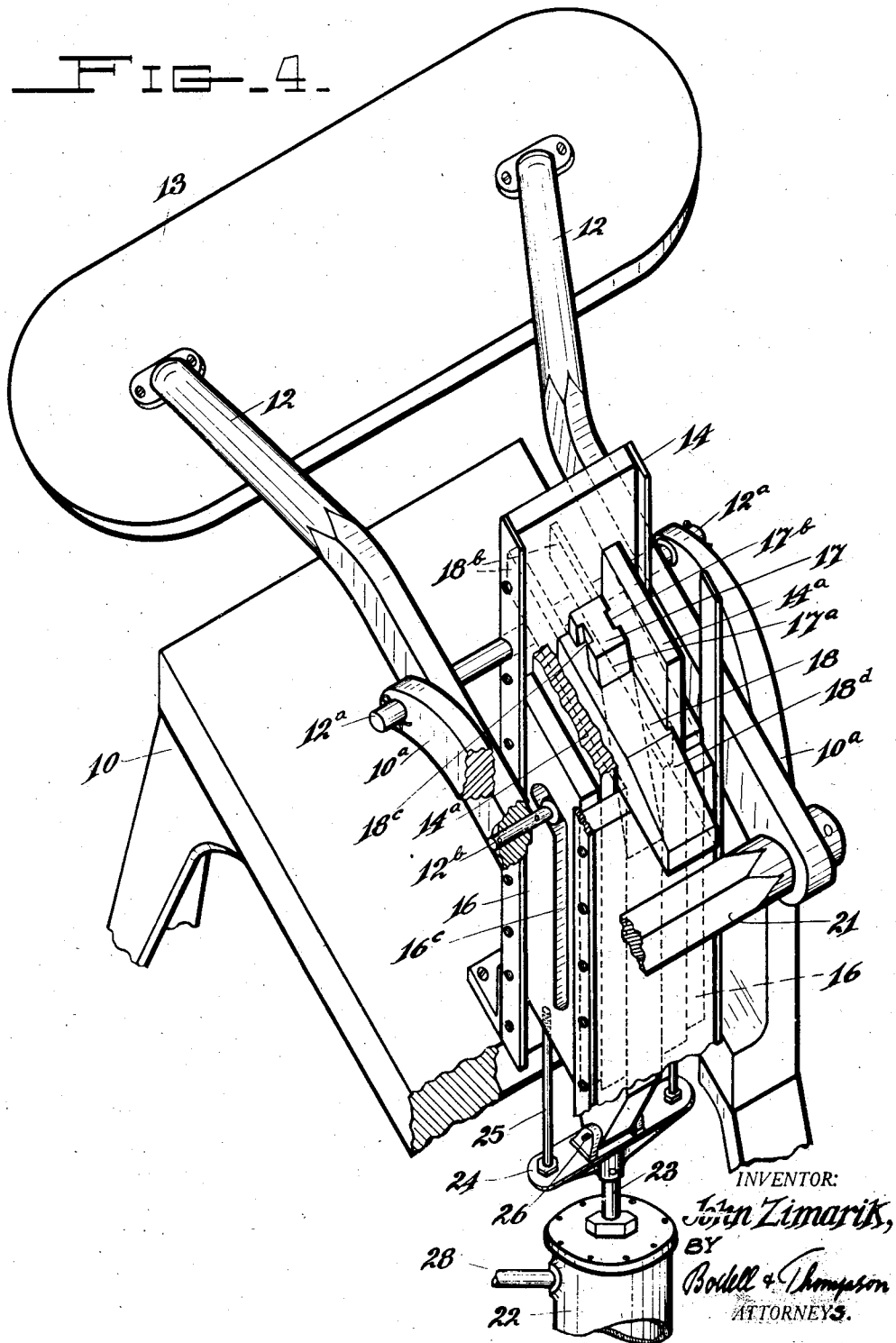
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3 Sheets-Sheet 3

FIG. 4.



UNITED STATES PATENT OFFICE

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PRESS

Application filed November 15, 1928. Serial No. 319,470.

This invention relates to presses and particularly that type of press used for ironing or pressing clothing.

This class of press usually comprises a fixed lower buck and an upper head mounted on an arm pivoted so as to swing the upper head toward or from the lower buck. Mechanisms of various types have been employed to operate the swinging head, but these have not been entirely satisfactory, due to their complicated construction.

The present invention has for its purpose the provision of a simple, effective mechanism for operating the swinging head of a press of the above-mentioned type.

More particularly the invention has for its objects the provision of a simple reciprocatory means for lowering or raising the swinging head and simple reciprocatory mechanism to apply pressure to the swinging head after it has been lowered on the fixed buck.

The foregoing and other objects of the invention are attained in the press illustrated in the accompanying drawings and described below. It is to be understood that the invention is not limited to the specific form thereof shown and described.

Of the accompanying drawings,

Figure 1 is a side elevation of a press embodying the invention;

Figure 2 is an enlarged side elevation of the upper portion thereof, partly in section;

Figure 3 is a section on line 3—3 of Figure 2;

Figure 4 is a perspective view of the press, partly broken away, and taken from the rear of the press.

Figure 5 is a view similar to Figure 2 showing in full, parts omitted in Figure 2.

Referring to the drawings, the numeral 10 designates a suitable supporting frame for the press on which the lower buck 11 of the press is mounted. Frame 10 is provided with brackets 10^a on which is pivoted at 12^a, 12^a a pair of members 12, 12 comprising a lever secured to the upper head 13.

A vertical guideway 14 is mounted on frame 10 between brackets 10^a and is provided with partitions 14^a, 14^a defining pref-

erably three vertical passageways 15^b, 15^b and 15^c, the two former to receive vertically reciprocatory press opening and closing cam plates 16, 16. The plates 16 are provided with cam slots 16^c forming shoulders co-operating with studs 12^b on lever 12, the horizontal portions or shoulders of the slots acting to raise and lower the upper head to preliminary closed position and the vertical portions permitting movement of a pressure applying wedge plate or cam, to be described, while the press is closed. The vertical portions of the slots 16^c, in other words, permit relative movement of the cam plates 16 relatively to the studs 12^b after the press has been preliminarily closed and provide thereby a lost-motion connection between the actuating mechanism and the motor means. The actuating mechanism is the mechanism above described which closes the press.

The passageway 15^c receives a vertically reciprocable wedge plate or cam 17 for applying pressure to the closed press, this plate having a wedge surface 17^a cooperating with a corresponding wedge surface 18^a on a wedge block or cam 18 laterally reciprocable through apertures 19, 19 and 20 in the guideway 14 and grooves 14^b, 14^b in partitions 14^a. Block 18 has extensions 18^b, 18^b on each side of wedge surface 18^a fitting into apertures 19 to slidably mount said block at its front end. The wedge block 18 preferably is interlocked with wedge plate 17 by projections 18^c, 18^c thereon engaged in grooves 17^b so that the wedge block 18 is reciprocable by wedge plate 17. The upper rear end of wedge block 18 is formed with a wedge surface 18^a operable to and from engagement with a cooperating and correspondingly surfaced wedge block 21 on the rear end of lever 12 in back of pivot 12^a. The wedge plate 17 and the wedge block 18 each form a cam for finally closing the press under heavy pressure. The cam formed by the wedge block 18 may be moved laterally by any means other than the wedge plate 17 and, similarly, the cam formed by the wedge plate 17 may give lateral movement to the wedge block by its cam or wedge surface, which lateral movement may be

transmitted to the pivoted arm 12 in any suitable way.

While any suitable means for actuating the reciprocating cam and wedge plates or the actuating means to operate the press may be employed, a fixed double acting fluid pressure cylinder 22 is preferred, the latter having its piston (not shown) connected by rod 23 to a cross head 24 on which cam plates 16 are mounted by means of rods 25, 25 and to which wedge plate 17 is secured at 26. Supply of fluid under pressure to either end of said cylinder may be controlled by manually operable valve mechanism 27 connected between a supply line (not shown) and branches 28 and 29 to each end of cylinder 22.

The operation of the press is best illustrated in Figure 2. When the cam and wedge operating plates are in their lowermost position, the parts are in the full line positions shown. Upon actuating these upwardly, the cam plates with their shoulders pushing upwardly on the studs 12^b, swing the upper press head downwardly into preliminary closed position with the head preliminarily cooperating with the buck 11, studs 12^b pass from the horizontal portions of slots 16^c into alignment with the vertical or lost motion portions thereof during this operation and wedge block 18 moves rearwardly toward wedge block 21. The movement of block 18 is so coordinated with the movement of the cam plates 16 that it engages cooperating wedge block 21 only after it has been swung to its position when the press is closed, such as the dotted line position thereof shown in Figure 2.

Continued upward movement of the cam plates 16 and wedge plate 17 propels the wedge block 18 laterally so that it engages with wedge block 21 and exerts the required pressure of the upper head downwardly on the work, cam plates 16 being ineffective on the arm 12 during this operation by reason of the straight vertical portions of the cam slots 16^c.

Upon lowering of the cam and wedge plates after a pressing operation, the wedge block 18 is first disengaged from block 21 and then the top edges of slots 16^c of cam plates 16 engage studs 12^a and pull the rear end of lever 12 downwardly opening the press, studs 12^a moving into the horizontal portions of slots 16^c by reason of the arcuate movement of the lever with respect to the straight movement of the cam plates.

It will be noted that regardless of the thickness of the work in the press, the press will always apply the required pressure since within workable limits the relative angular position of arm 12 when closed onto the work only affects the relative positions of the pressure transmitting wedge blocks.

Modifications of the invention may be resorted to without departing from the spirit

thereof or the scope of the appended claims.

What is claimed is:—

1. A press comprising upper and lower cooperating press members, the upper member being mounted on a lever so as to be swung toward and from the lower press member, and means for actuating the lever comprising a vertically reciprocable unit including a slotted cam, a stud on the lever engaged in the cam slot for opening and closing the press, a wedge plate associated with said reciprocable unit and movable therewith, a wedge cooperating and interlocked with the wedge plate to be reciprocated by the wedge plate laterally thereof, a wedge block on the lever adapted to be engaged by said laterally swung toward and from the lower press members are together to apply pressure thereto, said slotted cam being movable with respect to the stud so as to be ineffective on the lever when the latter is moved with the wedge plate to apply pressure through the wedge blocks to the lever, and means including a fixed fluid pressure cylinder directly connected to said unit for reciprocating the same.

2. A pressing machine including upper and lower cooperating press members, the upper member being mounted on a lever so as to be swung toward and from the lower press member, and means for actuating the lever including a vertically reciprocable unit having a slotted cam, a stud on the lever engaged in the cam slot for opening and closing the press, a wedge plate movable with said reciprocable unit, a wedge block cooperating and interlocked with the wedge plate to be reciprocated by the wedge plate laterally thereof, a wedge block on the lever adapted to be engaged by said laterally reciprocable wedge block when the press members are together to apply pressure thereto, said slotted cam being movable with respect to the stud so as to be ineffective on the lever when the lever is moved with the wedge plate to apply pressure through the wedge blocks to the lever, and means for reciprocating said unit.

3. A pressing machine including upper and lower cooperating press members, the upper member being mounted on a lever so as to be swung toward and from the lower press member and means for actuating the lever including a vertically shiftable unit having a slotted cam, a stud on the lever engaged in the cam slot for opening and closing the press, a wedge plate movable with said reciprocable unit, a wedge block cooperating with the wedge plate to be reciprocated by the wedge plate laterally thereof, means on the lever adapted to be engaged by said laterally shiftable wedge block when the press members are together to apply pressure thereto, said slotted cam being movable with respect to the stud so as to be ineffective

on the lever when moved with the wedge plate to apply pressure through the wedge block to the lever, and means for reciprocating said unit.

4. A press comprising upper and lower cooperating press members, the upper member being mounted on a lever so as to be swung toward and from the lower press member, and means for actuating the lever comprising a vertically shiftable unit, including means cooperating with the lever for opening and closing the press, a wedge plate movable with said press opening and closing means, a wedge block cooperating with the wedge plate to be reciprocated by the wedge plate laterally thereof, means on the lever adapted to be engaged by said laterally shiftable wedge block when the press members are together to apply pressure thereto, said press opening and closing means being movable with respect to the lever when moved with the wedge plate to apply pressure through the wedge block to the lever, and means for reciprocating said unit.

5. The combination with a press including relatively movable press members, one of which is supported on a lever, of means for applying pressure to said press members including a reciprocable wedge plate, a wedge block cooperating with the wedge plate and shiftable by said wedge plate laterally thereof, and means on the lever engageable by the wedge block.

6. The combination with a press including relatively movable press members, one of which is supported on a lever, of means for applying pressure to said press members including a reciprocable wedge plate, a wedge block cooperating with the wedge plate and shiftable by said wedge plate laterally thereof, means on the lever engageable by the wedge block, and means operable along with the pressure applying means for closing the press before said wedge block is actuated to its position of engagement with the lever and for opening the press after the wedge block is disengaged from the lever.

7. The combination with a press including relatively movable members, one of which is mounted on a lever to swing toward and from the other, of means for swinging the lever to move the press members adjacent each other and apart, wedge means associated therewith for engaging the lever when the members are adjacent each other to apply pressure to the press members, and means for actuating the lever swinging means and the wedge means.

8. The combination with a press including relatively movable press members and a lever mounting for one press member whereby it is movable toward and from the other, of a single unit reciprocable along a fixed path including means for engaging the lever to swing one press member into cooperative re-

lation respecting the other at variable distances apart dependent upon the thickness of the work between the press members, and additional means engaged by the lever during such swinging movement for applying pressure to the press unaffected by the relative positions of the press members in cooperation with the work.

9. The combination with a press including relatively movable members, one of which is mounted on a lever to swing toward and from the other, of means for swinging the lever to move the press members adjacent each other and apart, wedge means associated therewith for engaging the lever when the members are adjacent each other to apply pressure to the press members, and means for actuating the lever swinging means and the wedge means, said means comprising a fixed fluid pressure cylinder, the piston of which is directly connected to the lever swinging means and the wedge means.

10. The combination with a press including relatively movable press members, means associated therewith to close and open the press, and wedge means including a reciprocable wedge plate and a wedge block operable thereby and cooperating with one press member to apply pressure to said press members.

11. In a garment or laundry pressing machine in combination cooperative pressing elements and operating mechanism therefor including cam means for moving the pressing elements into preliminary closed position; other separate cam means to apply heavy pressure to the pressing elements; and operating mechanism for the cam means.

12. In a garment or laundry pressing machine in combination cooperative pressing elements one of which is movable toward and from the other; actuating mechanism for moving the movable pressing element into preliminary closed position; cam means, inoperative during preliminary closing of the press, and operable for applying heavy pressure to the pressing elements; and common operating mechanism for the actuating mechanism and the cam means.

13. In a garment or laundry pressing machine in combination cooperative pressing elements one of which is movable toward and from the other; actuating mechanism for moving the movable pressing element into preliminary closed position; cam means for applying heavy pressure to the pressing elements; and common operating mechanism for the actuating mechanism and the cam means, including a lost motion connection in the actuating mechanism so that the cam means may move the movable pressing element independently of a portion of the actuating mechanism.

14. In a garment or laundry pressing machine in combination cooperative pressing

elements one of which is movable toward and from the other; actuating mechanism for moving the movable pressing element into preliminary closed position; cam means for
5 applying heavy pressure to the pressing elements; motor means common to both the actuating mechanism and the cam means, including a lost motion connection between the actuating mechanism and the motor means
10 so that the cam means is operable independently of a portion of the actuating mechanism when the cam means applies heavy pressure to the pressing elements.

15 15. In a garment or laundry pressing machine in combination cooperative pressing elements and operating mechanism therefor including cam means for moving the pressing elements into preliminary closed position; other separate cam means to apply
20 heavy pressure to the pressing elements; and common motor means for operating both of said cam means.

16. In a garment or laundry pressing machine in combination cooperative pressing
25 elements one of which is movable with respect to the other; a lever on which the movable pressing element is mounted; power means for moving the lever to bring the movable pressing element into preliminary
30 closed position; and cam means operating directly against the lever to apply heavy pressure to the pressing elements.

17. A garment or ironing press comprising cooperating press jaws one of which is movable towards and from the other, movable
35 actuating means having a shoulder and a cam, a pivoted arm having a part thereof engaging the shoulder during the initial movement of the actuating means and moving out of
40 engagement with the shoulder during the latter part of the movement of the actuating means, the pivoted arm having a part engaging the cam after the arm disengages from the shoulder, and means connecting the piv-
45 oted arm to the movable jaw.

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