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J. P. DALY

ACTUATING MECHANISM FOR PRESSING MACHINES

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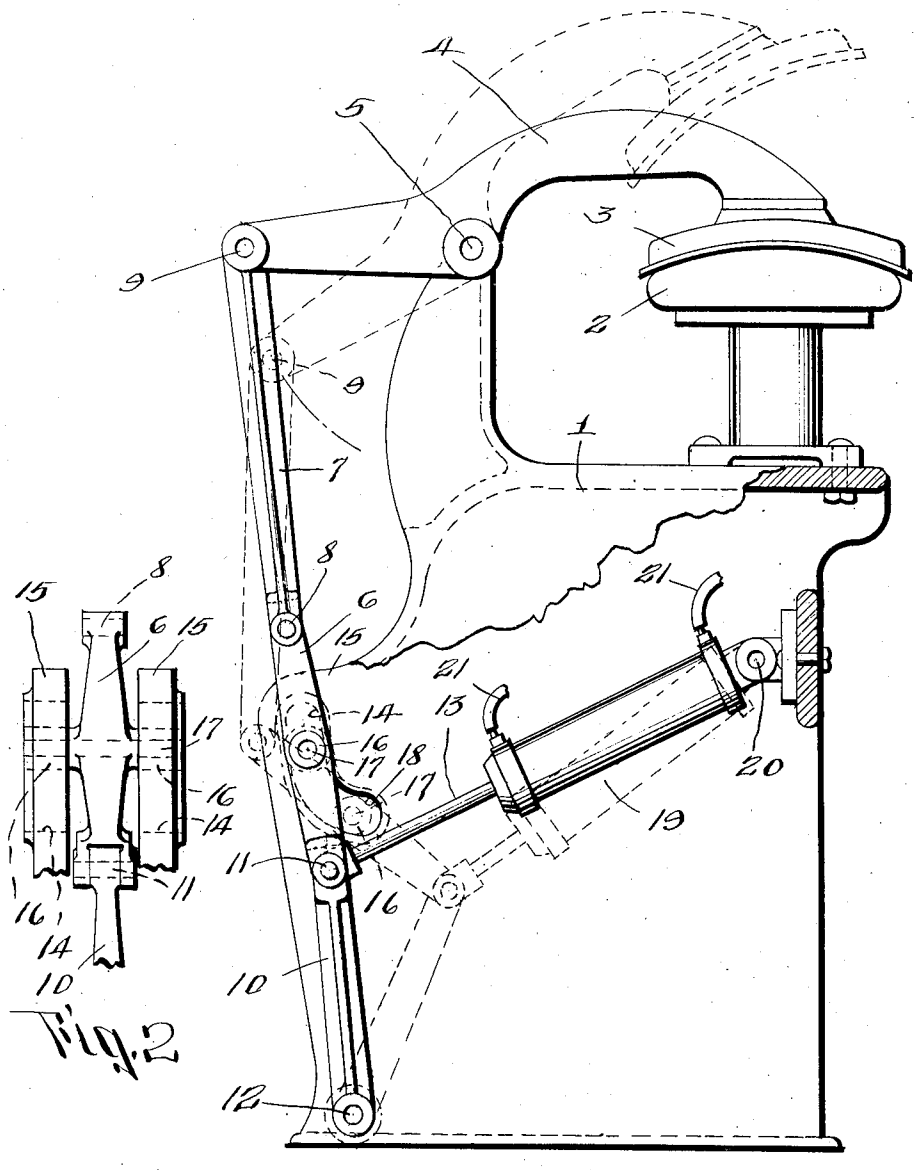


Fig. 1.

Fig. 2

INVENTOR.
Joseph P. Daly
BY
Parsons & Bodell
ATTORNEYS.

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JOSEPH P. DALY, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE PROSPERITY COMPANY, INC., OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

ACTUATING MECHANISM FOR PRESSING MACHINES.

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This invention relates to actuating mechanism for pressing machines particularly garment and laundry pressing machines, and has for its object particularly simple and efficient connections by which power from a reciprocating actuator is most effectively applied.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawings in which like characters represent corresponding parts in all the views.

Figure 1 is a side elevation, partly broken away, of one form of pressing machine embodying my invention.

Figure 2 is a fragmentary rear elevation of the intermediate lever of the actuating mechanism and the contiguous parts of the frame.

1 designates the frame of the machine.

2 and 3 the pressing elements, the element 2 being a buck mounted on the frame 1, the element 3 a head movable toward and from the buck, and here illustrated as carried on the front end of a yoke or lever 4, pivoted at 5 between its ends to the frame.

6 is an intermediate lever of the actuating mechanism. 7 is a link pivoted at 8 to the upper end of the upper arm of the lever 6 and at 9 to the rear end of the yoke lever 4.

10 is a link pivoted at 11 to the lower arm of the lever 6 and at its lower end at 12 to the frame. The frame 1 is formed with a guide for guiding the lever in its floating movement so that the power of a reciprocating actuator 13 is most effectively applied. As shown, the frame 1 is formed with a slot or pair of slots 14 in opposite separated positions 15 thereof, in which work followers or rollers 16 mounted on the pivot pin 17 of the lever 6. The slot is shown as formed with a forwardly extending portion 18 at its lower end extending in the direction of the folding movement of the link of the toggle formed by the link 10 and the lower arm of the lever 6, and an upright portion extending in the same direction as the toggles 4 when they approach a straight line. Owing to the arrangement of the lever 6 and the slots 14 in which the axis of said lever moves, a comparatively long throw of a reciprocating actuator is converted into power or pressure through the toggle mechanism.

The reciprocating actuator 13 is a piston rod having its piston movable in the cylinder 19 pivoted at 20 to the frame so that it oscillates during the movement of the lever in the slot 14. The cylinder is preferably double acting and inlet pipes 21 are shown as connected to opposite ends thereof. The control of the motive fluid as steam or air to and from the cylinder, forms no part of this invention and, therefore, further description is thought to be unnecessary.

In operation assuming the press is opened, or in the position indicated in dotted lines, motive fluid is permitted to flow to the right end of the cylinder so that the piston rod 13 when moving outwardly moves the joint 11 in an arc and the rollers or followers 16 move rearwardly in the lower portion 18 of the slot, and during such movement the toggle links partly straighten. During the remainder of the straightening movement, these followers or rollers 16 move in the upright portion of the slot 14, thus giving a boosting effect in addition to the straightening effect of the toggle. By this actuating mechanism a long throw of a piston is converted into a powerful thrust through the power transmitting mechanism.

I claim:

1. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a lever pivoted between its ends to the frame, connections between one arm of the lever and the movable pressing element, and connections between the other arm of the lever and the frame, the frame being formed with a guide for receiving a pivot of said lever whereby the lever may be moved bodily during its pivotal movement, and a reciprocating actuator connected to the lever.

2. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a lever pivoted between its ends to the frame, connections between one arm of the lever and the movable pressing element, and connections between the other arm of the lever and the frame, the frame being formed with a guide slot for receiving a pivot of said lever by the lever moved bodily during its

pivotal movement, and a reciprocating actuator connected to the latter, the actuator being pivotally connected to the frame to oscillate during the pivotal movement of the lever and the movement of the lever along the slot.

3. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a lever pivoted between its ends to the frame, a link pivoted at one end to one arm of the lever, and connected at its other end to the movable element, a link pivoted at one end to the other arm of said lever and at its other end to the frame, the lever being mounted in the frame to shift bodily relatively thereto, and a reciprocating actuator connected to the lever, the actuator being also pivoted so that it oscillates during the movement of the lever along the slot.

4. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a lever pivoted between its ends to the frame, a link pivoted at one end to one arm of the lever, and connected at its other end to the movable element, a second link pivoted to the other arm of said lever and forming a toggle therewith to the frame, the frame being formed with a slot for receiving the pivot of the lever, and a reciprocating actuator connected to the lever, the actuator being also pivoted so that it oscillates during the movement of the lever along the slot, said slot having one end portion extending in the direction of the folding movement of the toggle formed by the second link and said lever, and another portion arranged at an angle to the former portion and extending in a direction parallel to that assumed by the lever when the links connected thereto approach a straight line.

5. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a double toggle arranged to move into a straight line when in straightened position, said double toggle including an intermediate lever pivoted between its ends, one arm of the lever forming a link of one toggle, and the other arm, the link of the other toggle, the lever being mounted in the frame to shift endwise during the straightening and folding of the toggle and a reciprocating and oscillating actuator connected to the lever.

6. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a double toggle arranged to move into a straight line when in straightened position, said double toggle including an intermediate lever pivoted between its ends, one arm of the lever forming a link of one toggle, and the other arm a link of the other toggle, the lever being mounted to float during the straightening and folding of the toggle, the frame being formed with a slot for receiving the pivot of the lever to permit the floating movement of the lever and a reciprocating and oscillating actuator connected to the lever.

7. The combination with a supporting frame, of an actuating mechanism for a movable element supported by the frame, the actuating mechanism comprising a double toggle arranged to move into a straight line when in straightened position, said double toggle including an intermediate lever pivoted between its ends, one arm of the lever forming a link of one toggle, and the other arm a link of the other toggle, the lever being mounted to float during the straightening and folding of the toggle, the frame being formed with a slot for receiving the pivot of the lever and permit the floating movement of the lever, the slot being formed with a portion at one end extending in the direction of the folding movement of one of the toggles and another portion extending in the direction of the straightened toggles and a reciprocating and oscillating actuator connected to the lever.

In testimony whereof, I have hereunto signed my name, at Syracuse, in the county of Onondaga, and in the State of New York, this 12th day of July, 1926.

JOSEPH P. DALY.