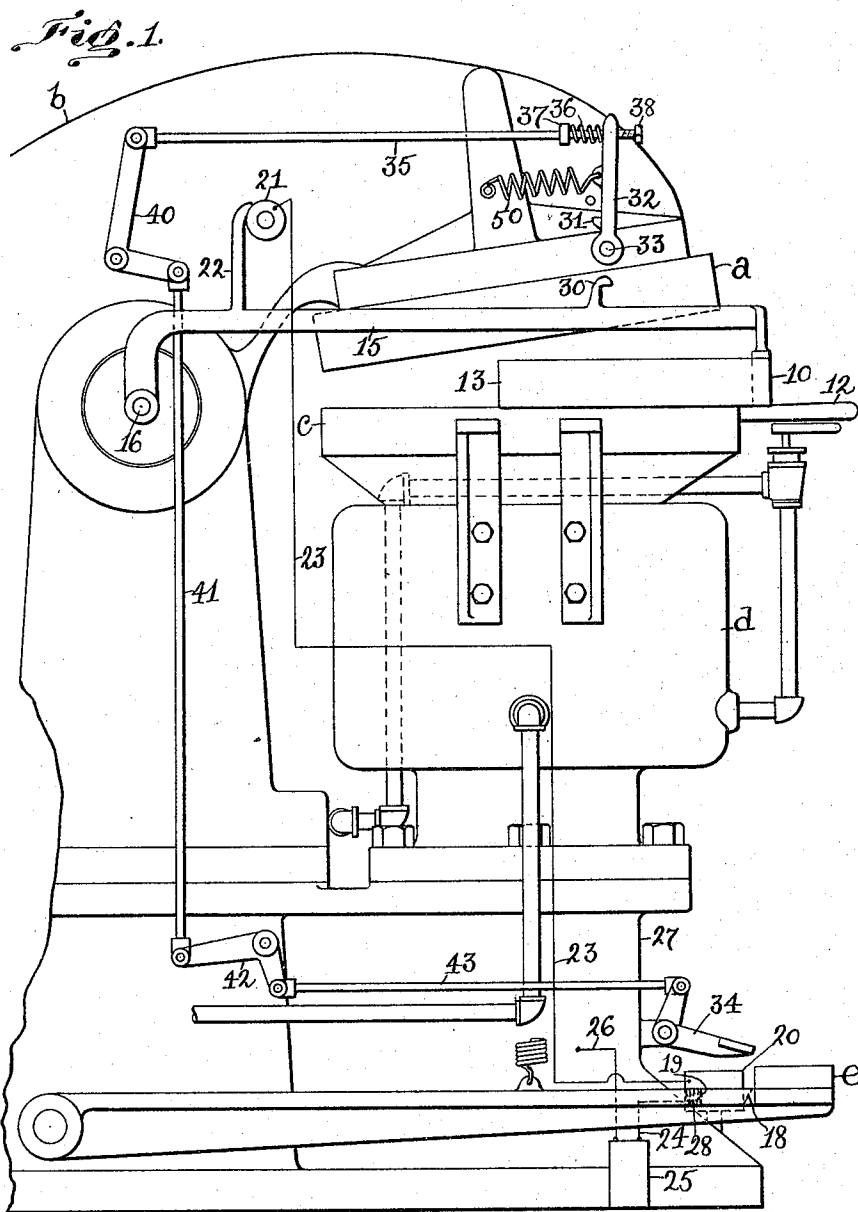


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 GUARD FOR PRESSES.
 APPLICATION FILED DEC. 15, 1913.

1,145,346.

Patented July 6, 1915.
 2 SHEETS—SHEET 1.



Witnesses:

Ernest A. Telfer
J. Murphy.

Inventors.

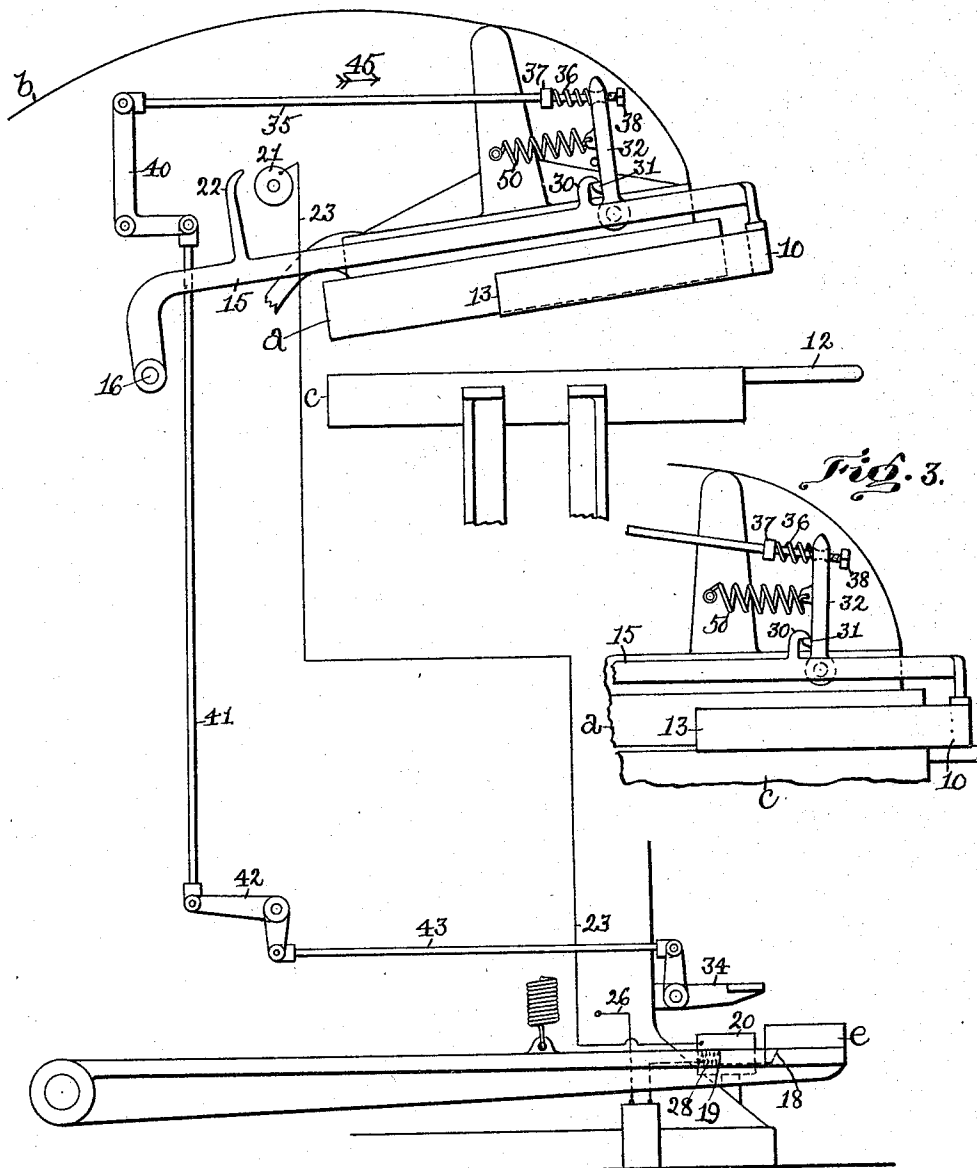
John J. Brophy
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Att'y.

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Fig. 2.



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UNITED STATES PATENT OFFICE.

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GUARD FOR PRESSES.

1,145,346.

Specification of Letters Patent.

Patented July 6, 1915.

Application filed December 15, 1913. Serial No. 806,681.

To all whom it may concern:

Be it known that we, JOHN J. BROPHY and WESLEY C. ROCHE, citizens of the United States, and residents of Salem and Beverly, in the county of Essex and State of Massachusetts, respectively, have invented an Improvement in Guards for Presses, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to a safety device or guard for presses and like machines, in which a movable member or platen is employed, and is herein shown as embodied in a press substantially such as shown in U. S. Patent No. 981468 dated January 10, 1911, which is especially adapted for pressing hides, skins and leather.

In the press shown in the patent referred to, an upper platen and a lower platen are employed, and the upper platen is moved down into its operative position and is then held stationary while the work is being subjected to pressure by the lower platen which is moved toward the upper platen.

The movement of the upper platen into its lowered or operative position is controlled by a starting device, shown as a foot treadle, and the present invention has for its object to provide a guard or safety device, which is moved into operative relation to the lower platen, so as to offer an obstruction to the hands of the operator and prevent him from placing his hand or hands on the lower platen and in position to be injured by the upper platen, when the latter is lowered into its operative position.

In the present instance, one embodiment of the invention is shown, in which the guard or safety device controls the starting device for the upper platen, which will be hereinafter referred to as the movable platen, as the lower platen is stationary until the upper platen has been moved into its operative position.

In the present embodiment of the invention, the guard or safety device is movable upwardly with the movable platen, and is movable downwardly independently of said platen. The guard is released from the movable platen by mechanism under control of the operator as will be described, and said mechanism controls the starting

device for the press, as will be described, so that, the guard is first operated and brought into its operative position with relation to the lower or stationary platen or bed, before the starting device for the press can be operated.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a side elevation of a sufficient portion of a press provided with a guard or safety device in accordance with this invention, to enable the latter to be understood, the guard being shown in its operative position and the movable platen in its inoperative position. Fig. 2, a similar view of the press with the guard in its inoperative position, and Fig. 3, a detail showing both the guard and movable platen in their operative positions.

The construction of the press herein shown is substantially the same as that shown in the patent referred to and only a sufficient portion of the same is herein shown, to enable the present invention to be understood.

Referring to the drawings, *a* represents the upper platen, which is secured to a lever *b*, which is mechanically operated as described in the patent referred to, so as to move the platen *a* from its raised or inoperative position shown in Figs. 1 and 2 into its operative position shown in Fig. 3, in which latter position it coöperates with a lower platen *c*, which is normally stationary until the upper platen has been brought into its operative position, after which the lower platen *c* is moved toward the now stationary upper platen to compress the work interposed between said platens and which is placed by the operator on the lower platen, when the upper platen is in its raised or inoperative position. The lower platen *c* is supported by a piston or ram (not shown) but which is located in a cylinder *d* and is moved by fluid pressure admitted into the cylinder and controlled as described in the patent referred to. The mechanism which operates the movable upper platen *a* is controlled by a starting device or foot treadle *e*, substantially the same as in the patent referred to.

To safeguard the operator from injury to his hand or hands, which might happen

if he should designedly or accidentally depress the foot treadle *e*, while his hand is on the work supported by the lower platen, as for instance while smoothing out the work

5 on the lower platen, a guard is provided, which is associated with the foot treadle or starting device *e*, so as to render said starting device inoperative until the guard has been brought into its operative position.

10 In the present instance, the guard is shown as a bar 10, which may be of wood or other suitable material and extends in front of the movable platen *a*, and is adapted to rest upon the table or support 12 for the

15 work. The bar 10 may be provided with end extensions or side bars 13, only one of which is shown, and which extend on opposite sides of the movable platen *a* for the whole or a portion of the length of said

20 sides. The front bar 10 and the side bars 13 form an inclosing frame which is secured to a movable support, shown as a lever 15, which is mounted on the pivot 16 for the lever *b* carrying the movable platen.

25 It may be preferred to provide two levers 15, one at each side of the press and both mounted on the pivot 16. The guard 10 controls means for rendering the foot treadle *e* inoperative, and in the present instance, said means is shown as a bolt or

30 latch 18, which is secured to or forms part of the armature 19 of an electromagnet 20, preferably a solenoid, which is suitably supported in proximity to the foot treadle *e*, so that, the bolt or latch 18 may be projected into the path of movement of the treadle and prevent its downward movement to start the press in operation.

Provision is made for energizing the solenoid 20, so as to withdraw the latch or bolt 18 and leave the starting treadle *e* free to be operated. To this end a circuit controller is provided, one member 21 of which is secured to the lever *b* carrying the movable

45 platen *a*, and the other member 22 of which is movable with the guard. The member 21 is shown as a roller or disk, and the member 22 as an arm attached to the supporting lever 15, and having its free end adapted to

50 engage the roller or disk 21, and thus complete the circuit in which the solenoid 20 is included. In the present instance the solenoid 20 has one end of its coil connected by wire 23 with the member 21, and its other

55 end connected by wire 24 with one pole of the battery 25, which has its other pole connected by wire 26 with the frame 27 of the press and thereby with the movable member 22 of the circuit controller. Normally the member 22 of the circuit controller is out of contact with the member 21, see Fig. 2, and the solenoid 20 is deenergized, and the latch or bolt 18 is projected into the path of movement of the starting

65 treadle *e*, which may be effected by a suitable

spring 28 indicated by dotted lines in Figs. 1 and 2. When the guard is in its lowered or operative position, the member 22 engages the member 21 and closes the circuit of the solenoid, which attracts its core and

70 moves the latch or bolt 18 out of engagement with the treadle *e*, thereby leaving the latter free to be depressed to start the press in operation to lower the platen *a* into its operative position, represented in Fig. 3.

Provision is made for holding the guard in its raised or inoperative position shown in Fig. 2, and for releasing said guard and allowing it to drop into its operative position shown in Fig. 1, while the movable

80 platen *a* remains in its elevated position. In the present instance one arrangement of mechanism is shown for accomplishing this result. To this end, the supporting lever 15 for the guard 10 is provided with a bent

85 arm or hook 30, which is adapted to engage a latch or projection 31 on a lever 32, pivoted at 33 to the movable platen *a*, and having its free or upper end operatively connected with a foot treadle or lever 34. In the present instance, the lever 32 is provided with a

90 hole through which a rod 35 is passed and has a play therein, and said rod is encircled by a spring 36, which bears at one end against the lever 32 and at its other end

95 against a fixed collar 37 on the said rod. The rod 35 is further provided at its free end with a nut 38, and has its other end pivotally connected to one end of an elbow

100 lever 40, pivoted to the lever *b* and having its other end joined by a link 41 to an elbow lever 42, which is joined by a link 43 to the foot treadle 34. These connections are such that when the foot treadle 34 is depressed, the rod 35 is moved in the direction of the

105 arrow 45 in Fig. 2, and the spring 36 is compressed and moves the lever 32 so as to disengage the latch 31 from the hook 30, and thereby leave the guard free to be moved by gravity or otherwise down into its operative position shown in Figs. 1 and 3, in

110 which position, it rests on the table 12 and forms a closure or obstruction, which prevents the operator inadvertently placing his hand upon the lower platen or upon the

115 work thereon, and the very fact that he must first operate the lever 34 before he can operate the starting treadle *e* serves to call his attention to the fact that his hands should not be on the work or on the lower platen

120 or bed, and if he should accidentally step on the starting treadle *e* before the guard is lowered no harm will be done, as the starting treadle cannot be operated until he has first depressed the guard treadle or lever 34.

125 The lever 32 is acted upon by a spring 50, which serves to keep the latch 31 in engagement with the hook 30 in the elevated position of the guard and movable platen, and which also serves to return the lever 32 into

130

its normal position after the latch 31 has been disengaged from the hook 30, so that, when the movable platen *a* is lowered into its operative position, the latch 31 will click
 5 by the hook 30 on the downward movement of the platen *a* and will pass under and into engagement with said hook, so that, when the platen *a* is moved upwardly into its inoperative or starting position, the guard
 10 will be carried therewith into its elevated or inoperative position shown in Fig. 2.

In the present instance one embodiment of the invention is shown as applied to one construction of press, but it is not desired to limit
 15 the invention to the particular arrangement or construction of guard and its cooperating mechanism herein shown or to its application to the particular press or apparatus shown. The members 22, 21 of the circuit
 20 controller are arranged so that the circuit of the electromagnet 20 will not be closed until the guard is in its fully lowered or operative position, so that, if the operator should depress the treadle 34 with his hand
 25 on the bed or lower platen *c*, the guard will be released and will descend and strike the hand of the operator, but the starting treadle *e* will not be released, as the hand will prevent the guard being lowered sufficiently
 30 to bring the member 22 of the circuit controller into contact with the member 21, and the locking or holding device 18 will remain in its operative position, until the hand of the operator has been withdrawn
 35 from under the guard. The bottom of the guard may be covered with suitable material to prevent injury to the hand if it should be struck by the guard.

Claims.

40 1. In an apparatus of the character described, in combination, a movable platen, a starting device controlling the movement of said movable platen, a cooperating platen
 45 toward which the movable platen is moved, a guard detachably secured to said movable platen, means for releasing said guard to enable it to move toward the cooperating
 50 platen in advance of the movable platen, a locking device to render said starting device inoperative, an electromagnet for operating

said locking device to release said starting device, and a circuit controller for said electromagnet actuated by said guard, substantially as described.

2. In an apparatus of the character described, in combination, a movable platen, a starting device controlling the movement of said movable platen, a cooperating platen toward which the movable platen is moved, a guard detachably secured to said movable
 60 platen, means for releasing said guard to enable it to move toward the cooperating platen in advance of the movable platen, a locking device to render said starting device inoperative, an electromagnet for operating said locking device to release said
 65 starting device, and a circuit controller for said electromagnet actuated by said guard, and means movable with said movable platen and cooperating with said guard for raising said guard with the movable platen.

3. In an apparatus of the character described, in combination, a movable platen, a guard cooperating therewith, means carried by said movable platen for normally holding
 75 said guard in its inoperative position, and means for releasing said guard from said platen to enable the guard to be moved into its operative position independently of the said platen.

4. In an apparatus of the character described, in combination, a movable platen, a starting device for said movable platen, a guard detachably secured to said movable
 85 platen, means for releasing said guard from said platen, a locking device to render said starting device inoperative, an electromagnet for operating said locking device to release said starting device, and a circuit controller for said electromagnet actuated by
 90 said guard.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN J. BROPHY.
 WESLEY C. ROCHE.

Witnesses:

H. A. HOLDER,
 GEORGE P. BECKETT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."