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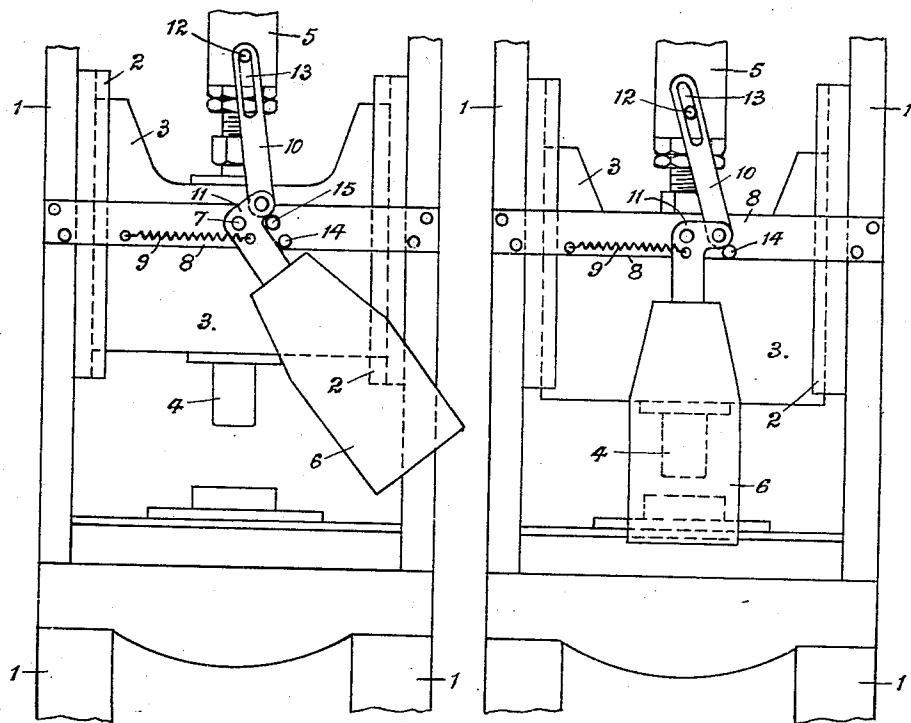
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GUARD APPARATUS FOR POWER PRESSES

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FIG. 1.

FIG. 2.



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GUARD APPARATUS FOR POWER PRESSES

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This invention has reference to guard apparatus for use in connection with power presses for stamping articles or metals by dies, or like acting machines, and it relates more particularly to the type of guard apparatus which is pivoted at the front of the machine or press, and is in each action of the press, moved from in front of the disc in the upstroke of the machine, and then at a certain point in down stroke is automatically moved into position in front of the die, and so that the hands of the operator cannot be placed in the space between the upper and lower die, or similar accidents take place.

In the power press or like acting machine guard mechanism according to this invention the guard is pivoted, and has a circular or pendulous movement about its pivots, and is operated from the ram or slide carrying or moving part through connecting rod or member operated thereby; and while in the upward movement of the ram or slide the connecting member is engaged and moves therewith, in the downstroke the engaging part is free to move independently of the said rod or member, and exceed the movement of same, by the free connection so that after the guard has fallen or moved to the closed or vertical position by a spring or gravity, it is not acted on by the operator part.

The guard is operated from a part operated from the crank shaft of the machine, that is by a part connecting it with the slide or ram so that adjustment or alteration of the guard, or its operating or connecting parts, is not required with different lengths of stroke of the ram or slide or die; that is the guard without adjustment or alteration can be employed in the making of articles requiring different degrees of action of stroke of the dies or tools.

Furthermore, the swinging guard is brought into protecting position by the spring or gravity, that is, is not positively driven, so that it is not in itself a danger.

A simple and convenient arrangement having the characteristic above described, or by which these ends are accomplished, consists

in providing an elongated slot in the upper end of the connecting rod which connects the slide or upper tool or die carrier with the head of the pivoted guard, the point of connection being to one side of the pivot of the guard, so that it forms a species of crank or lever.

By this means when the slide is moved upwards, a pin or stud, which is passed through the slot of the rod, and entered in a part of the slide or tool carrier, will in its upward stroke come in contact with the rod at the top of the slot, and so lift the rod and move the guard away to the open position of the press; and then in the return of the downstroke, when the guard has reached the vertical position covering the tools or dies, (which motion and position is governed by a suitable stop) the said stud can pass downwards away from the upper end of the slot, and travel down it without further action upon the guard, the spring referred to pulling the guard to the said closed or guarded position.

The drawings hereto annexed illustrate the invention, Figure 1, being a front view of the power press provided with the guard, and showing it to the removed or open position; and Figure 2, being in a similar view showing the guard in the covering or guarded position.

In the case shown 1 are the main frames of the press, 2 are the slide guides of the inside of said frames, in which the tool carrier works, 3 is the tool slide or carrier; 4 is the upper tool or die on the lower end of same, and 5 is the member or rod which is operated from the driving shaft of the machine in the usual way.

The guard member marked 6, is hinged by a hinge pin 7, to a cross frame 8, attached to and carried from the side frames 1, and 9 is the spring by which the guard 6 is moved into the vertical guarded position; and 10 is the connecting rod connecting the slide or die carrier 3 with the right angle head or crank 11 of the guard 6; the connection of this rod with the slide being by means of a stud 12 passing through a slot 13 in the up-

per end of the rod, and screwing into a suitable part of the slide.

5 The downward movement of the guard 6 is controlled by a stop 14 on the front of the cross frame 8, so that it cannot move past the vertical position in front of the tools; and a hole 15 is provided in the frame for the insertion of a pin for holding up the guard when required.

10 As seen by the drawings, the position of the guard in Figure 1 is that the stud 12 is at the top of the slot 13, and is supporting the rod, and the guard is in the open position, the slide itself being in the upper position; whilst in Figure 2, showing the guard and parts in the lower position, the stud 12 will be seen standing away from or below the upper end of the slot 13 so that the rod, and consequently the guard 6 is free of the stud 12 and slide, and the spring is free to pull the guard 6 to the vertical or guarding position.

20 Thus different downward positions and adjustments of the tool slide and tool, can be made to suit requirements, without affecting the guard, which will operate as required in all different conditions and positions or adjustments of the slide and tools.

What is claimed is:—

30 1. In a power press or like acting machine guard mechanism, the combination of a pivoted guard the pivot of which is at right angles to the face of the press, and having a bell crank upper end, a reciprocating part, 35 a connecting member operated therefrom connecting an arm of the bell crank with the reciprocating part and adapted to be moved by said reciprocating part in its upward stroke, and to move the guard on its pivot, 40 the connection between the reciprocating part and connecting member permitting downward movement of the reciprocating part without affecting the connecting member, so that in the down stroke the reciprocating 45 part can exceed the movement of the said connecting member, and a spring for operating the guard.

50 2. In a power press or like acting machine guard mechanism, the combination of a bell crank guard having a long end and a short end, a pivot for the guard, a reciprocating part, a connecting member having an elongated slot, a pin extending through said slot, on the reciprocating part, the connecting 55 member being connected with the short end of the bell crank guard.

In testimony whereof I have signed my name to this specification.

WILLIAM HENRY JONES.