Dec. 31, 1946. R. L. AULENBACK 2,413,282

SAFETY DEVICE FOR STAMPING PRESSES

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Fig. 1.

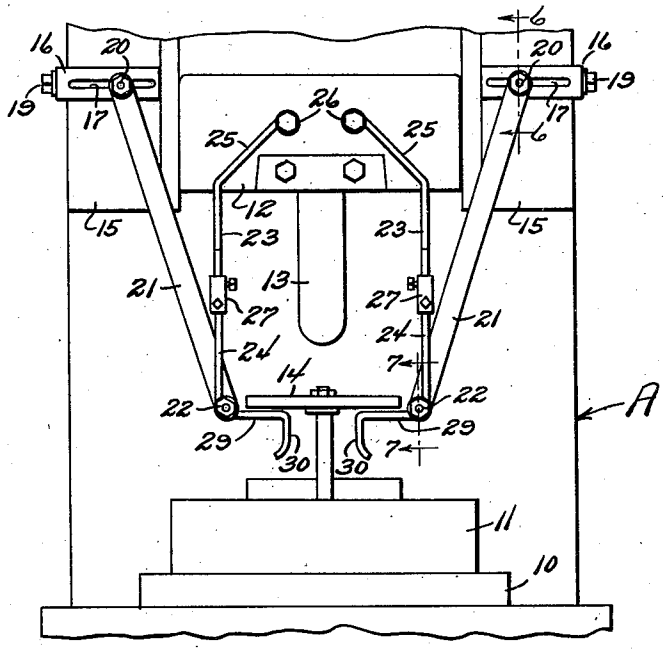
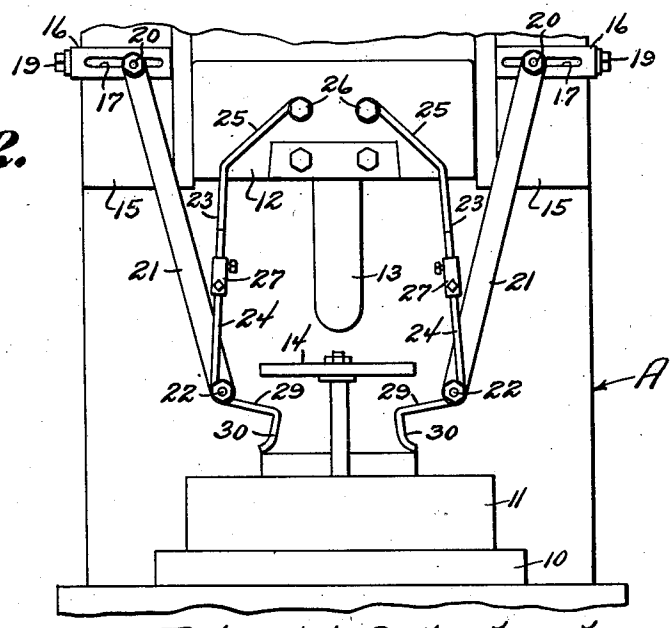


Fig. 2.



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Fig. 3.

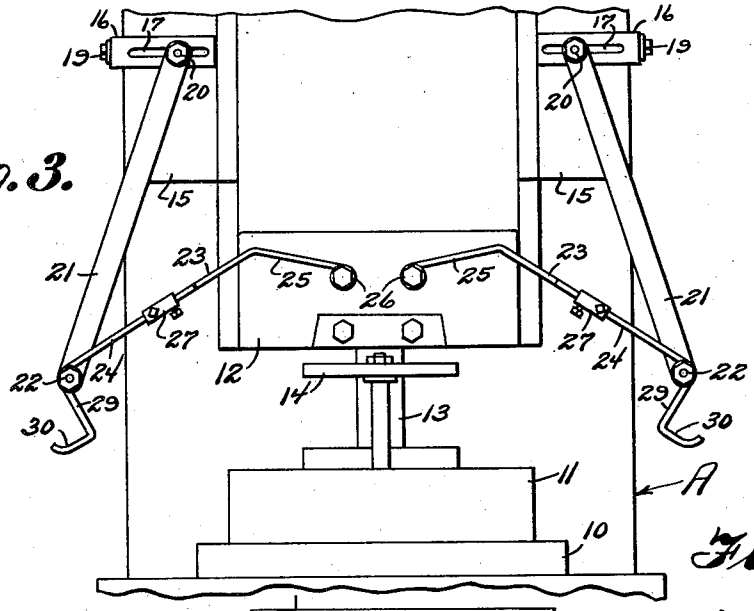


Fig. 5.

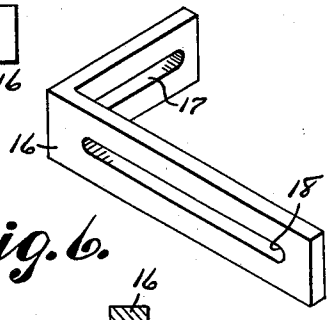


Fig. 4.

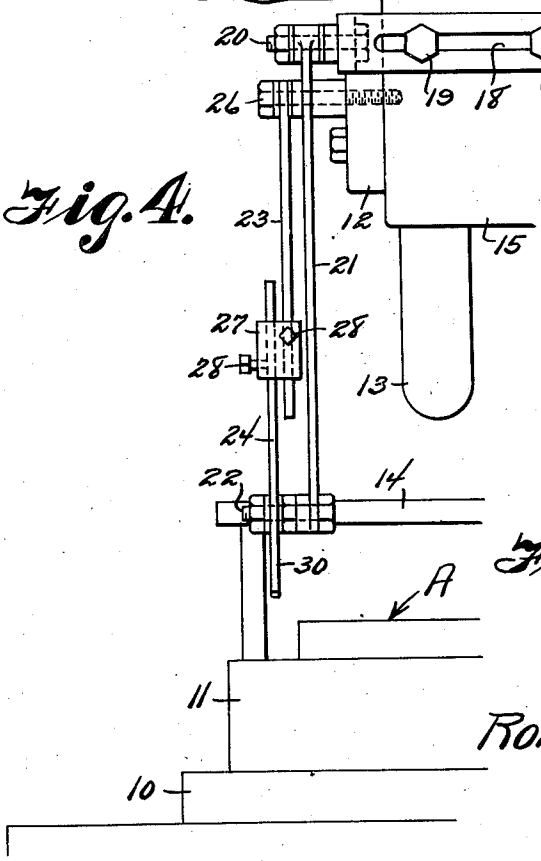


Fig. 6.

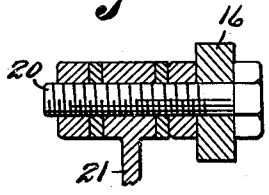
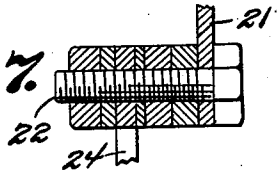


Fig. 7.



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SAFETY DEVICE FOR STAMPING PRESSES

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Application May 15, 1944, Serial No. 535,774

1 Claim. (Cl. 74—615)

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The invention relates to a metal stamping press or punch attachment, and more particularly to a safety device for metal presses or punches.

The primary object of the invention is the provision of a device of this character, wherein the hands of an operator will be excluded from the path of movement of the stamping press or punch tool as well as the stripper of such machine, thereby eliminating injury to such operator during the operation of the same.

Another object of the invention is the provision of a device of this character, wherein it is adjustable to regulate the relationship between it and the press or stamping machine or the like, the device being in the nature of a guard which automatically works concurrently with the operation of the machine with which it is associated, and assures against injury to an operator during the working of the said machine.

A further object of the invention is the provision of a device of this character, wherein the same not only acts as a guard but it will push the arms or hands of an operator out of the path of the moving parts of the machine, so that any injury to the arms or hands is avoided, while the machine is in operation.

A still further object of the invention is the provision of a device of this character, which is simple in construction, thoroughly reliable and efficient in operation, strong, durable, readily and easily applied to the machine, conveniently adjusted to the working conditions of such machine, automatic in its operation, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which show the preferred embodiment of the invention, and hereinafter pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a front elevation of a punching machine showing the device constructed in accordance with the invention applied thereto.

Figure 2 is a view similar to Figure 1 showing the device in a changed position.

Figure 3 is a view similar to Figure 1 showing the device in a further shifted position or opened.

Figure 4 is a side view thereof.

Figure 5 is a perspective view of one of the hanger brackets of the device detached.

Figure 6 is a sectional view taken on the line 6—6 of Figure 1 looking in the direction of the arrows.

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Figure 7 is a sectional view on the line 7—7 of Figure 1 looking in the direction of the arrows.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates generally and fragmentarily a standard type of a metal stamping machine, having as usual a bolster plate 10, a die bed 11, a plunger 12 co-acting with the latter, a punch 13 and a stripper plate 14, the said punch and the stripper plate being co-related to each other in the conventional manner. The plunger reciprocates between spaced vertical gibs 15 therefor and is power driven, as is common practice.

Constituting the present invention is an adjustable safety device for attachment to the machine A, and this device comprises a pair of substantially L-shaped brackets or angle hangers 16, each having elongated slots 17 and 18, respectively, in its arms which are at substantially right angles to each other. These brackets or hangers 16 are adjustably mounted on the gibs 15 by fasteners 19, which are accommodated in the slots 18 and engaged in the gibs so that the slots 17 are forwardly of the said gibs 15 to be disposed transversely thereof in the same plane with one another.

Adjustably fitting the slots 17 are pivot bolts 20 for depending swinging links 21, which are extended downwardly and are of uniform length with respect to each other, the brackets or hangers being elevated relative to the stripper plate 14, and such links 21 are at opposite sides of the path of movement of the plunger 12.

The links 21 at their lower ends are connected by pivots 22 to opening and closing guard arms, each including the upper and lower sections 23 and 24, respectively. The upper sections 23 of these guard arms have the bent inwardly converging upper ends 25, which are pivoted at 26 to the plunger 12 outwardly spaced an equi-distance from the longitudinal vertical center thereof at the front face of such plunger. The sections 24 are adjustably joined to the sections 23 by coupling sleeves 27 carrying set screws 28, the sections 23 and 24 at their meeting ends being telescoped in the said sleeves. These sections 24 are formed with inwardly directed elbow lower ends 29 to have an underslung relationship to the stripper plate 14 in the closing movements of the said arms, while the extreme free ends of such sections 24 are provided with outwardly curled terminals or tips 30. The links 21 are pivoted to the sections 24 at the outermost crotches of the elbow ends 29 bent therefrom.

In the working of the device when the punch 13 lowers by the descending of the plunger 12, the guard arms which prior thereto are in full closed position with relation to the stripper plate 14, the elbow ends 29 being underslung thereto, open outwardly in a lateral direction, as is shown in Figure 3 of the drawings, thereby pushing the hands or arms of an operator away from the path of the punch and out of danger of injury from being caught between the punch and stripper plate while the machine is in operation. When the punch 13 is raised the device is in the position shown in Figure 1 of the drawings, then when this punch begins to lower the device gradually changes its position therefrom and its arms open, the first opening step thereof being shown in Figure 2 of the drawings.

By adjusting the sections 23 and 24 of the guard arms of the device, they can be lengthened or shortened as may be required for the proper working of the said device and its fitting to the stamping machine or press. Under this adjustment, the links 21 are regulated with relation to the brackets or hangers, as will be obvious.

From the foregoing, it is thought that the construction and manner of operation of the safety device will be clearly understood, and therefore a more extended explanation has been omitted for the sake of brevity.

What is claimed is:

A safety device of the kind described, comprising a pair of sectional guard arms having pivotal connection with a movable part of a press carrying a stamping tool for opening and closing movements with respect to the latter, means for adjustably connecting the sections of the arms together for lengthening and shortening the same, hangers adjustably connected to a fixed part of the press, adjacent to and outside of the arms, links adjustably pivoted to the hangers and fixedly pivoted to the arms and inwardly directed elbows at the lower ends of the arms for underslung movement of a stripper plate of the press.

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