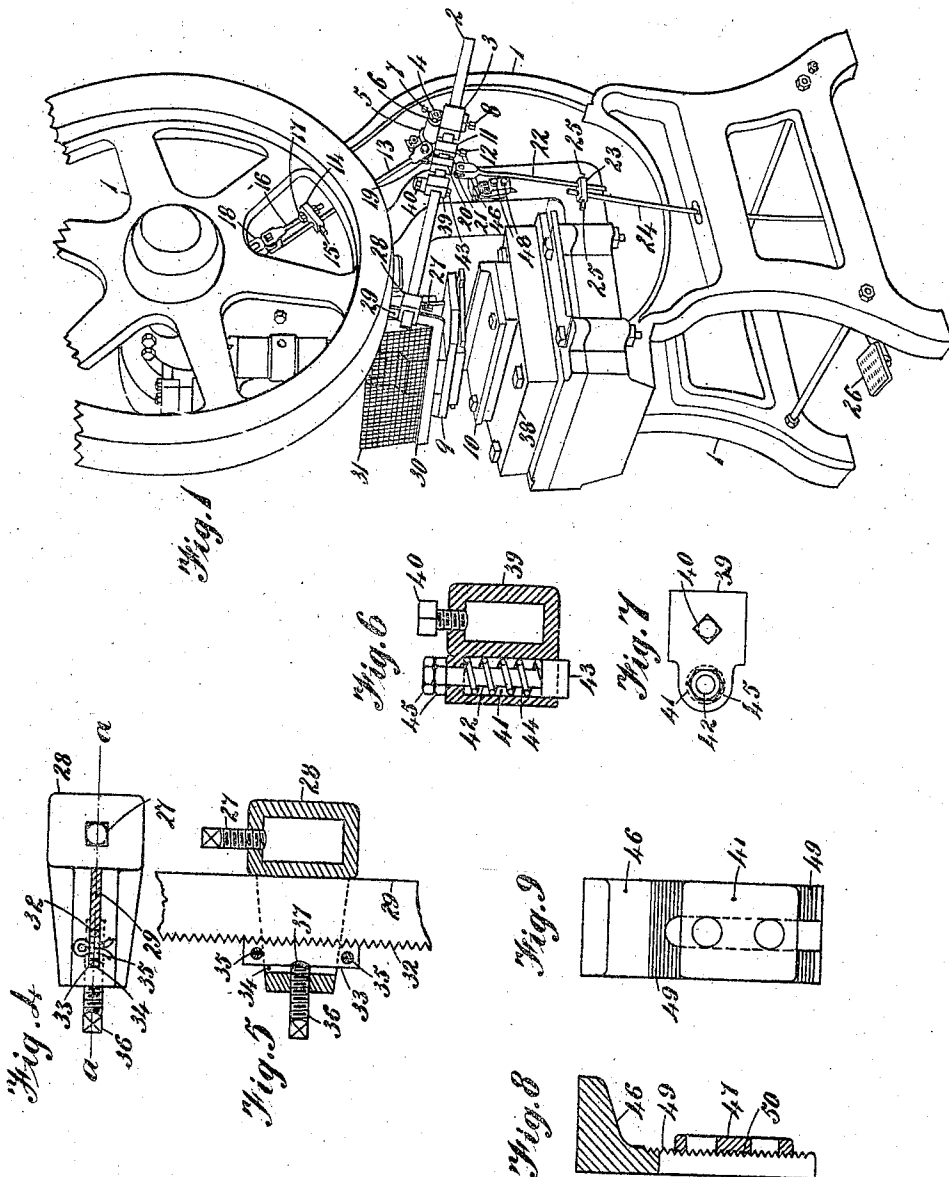


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SAFETY GUARD FOR STAMPING PRESSES.
APPLICATION FILED AUG. 18, 1910.

977,953.

Patented Dec. 6, 1910.
2 SHEETS—SHEET 1.



Witnesses,
Alfred S. Bratton,
A. Nicholson.

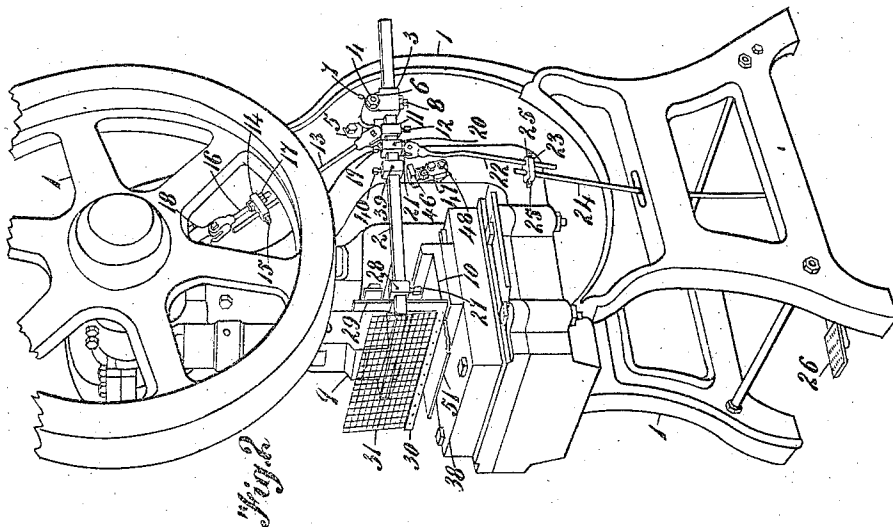
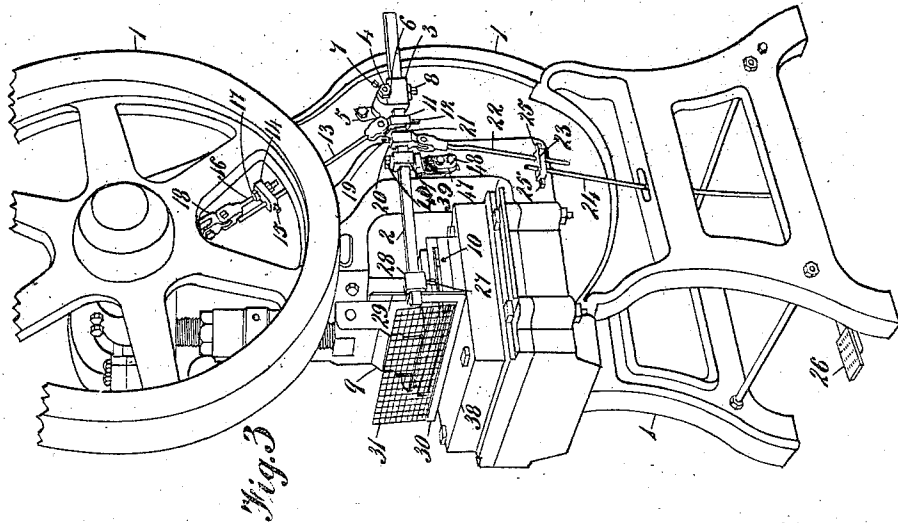
Inventor,
James Melvin Jones,
per Wm. Bruce
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UNITED STATES PATENT OFFICE.

JAMES MELVIN JONES, OF BUFFALO, NEW YORK.

SAFETY-GUARD FOR STAMPING-PRESSES.

977,953.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Application filed August 18, 1910. Serial No. 577,812.

To all whom it may concern:

Be it known that I, JAMES MELVIN JONES, a citizen of the Dominion of Canada, residing at 44 Henry street, Buffalo, in the county of Erie and State of New York, have invented a new and useful Safety-Guard for Stamping-Presses, of which the following is a specification.

My invention relates to a safety guard and means for actuating the same which is adapted for attachment to stamping presses or any other class of machine where there is a danger of the operator's fingers or hands getting caught between the die and matrix for example and consequently injured or cut off.

The invention primarily consists of a safety attachment for machines of the type above referred to which is characterized by its extreme simplicity in construction while at the same time positively insuring that the safety guard will not allow the die of the press to descend at all until the guard is down flush with the table, or, in other words, so long as there is the slightest obstruction between the lower edge of the gate and the upper face of the matrix or that part of the machine upon which it may be mounted, the die is effectively held elevated and prevented from descending.

A further feature of the invention consists in providing rigid and direct connections between the foot-lever and the guard operating lever, and between said latter lever and the latch mechanism whereby positive action is insured.

A still further feature of the invention resides in the fitment of an adjustable buffer device or shock absorber in connection with the guard operating lever.

Another object of my invention is the provision of means which insure the immovableness of the guard gate when adjusted to particular requirements.

I attain the foregoing objects by the mechanism illustrated in the accompanying drawings which show a stamping press of ordinary and well known construction fitted with my improved safety guard.

In the drawings, Figure 1 is a perspective view, partly broken away, of the stamping press with the improved mechanism attached and the gate or guard raised. Fig. 2, is a similar view but showing the guard lowered and impeded by an obstruction, as herein-after more fully explained. Fig. 3, is a like

illustration to the two preceding ones but exemplifying the guard down or fully lowered to permit the stamping operation. Fig. 4, is an enlarged plan of the means for locking the guard gate at the required position. Fig. 5, is a sectional elevation on the line *a, a*, in Fig. 4. Fig. 6, is a sectional elevation of the guard operating lever buffer device. Fig. 7, is a plan of the same. Fig. 8, is a vertical section through the contact stop for the buffer device shown in Figs. 6 and 7; and Fig. 9, is a front view of the same.

Like reference numerals designate the same parts throughout the several figures.

According to my invention and as illustrated 1, designates one known form of stamping press, of which there are numerous types, but it is to be clearly understood that my improved safety guard is equally applicable to all with but very slight modification and that only to make it conform to the particular construction of press.

2, is a lever or bar mounted at the side of the press, 1, by means of a slotted bracket or sleeve, 3, which in turn is pivotally mounted on a pin or bolt, 4, carried by a bracket, 5, projecting laterally from the press frame.

6, is a nut threaded upon the outer end of the pin, 4, for adjusting the sleeve, 3, and 7, is a set screw for locking said nut, 6, when properly adjusted. To provide means for adjusting the lever, 2, I fit the sleeve 3, with a set screw 8, which, when slackened allows said lever 2, to be moved longitudinally of its axis and thereby adapt the guard for accurate adjustment relative to the die, 9, and matrix 10. To one side of the bracket 3, and adjustable longitudinally of the lever 2, I fit a slotted bracket 11, which is clamped in place by means of a set screw 12, and said bracket has pivotally connected thereto a connecting rod 13, which passes through a block or coupling piece 14, and is held thereto by a set screw 15. 16 is another short connecting rod held to the coupling-piece, 14, by lock nuts, 17, said rod being fastened at its upper end to the releasing latch 18, of the press 1, and by this means it will be seen that the distance between the said latch, 18, and the lever 2, may be accurately adjusted.

Adjacent the slotted bracket, 11, is secured by a set screw 19, a sleeve or block 20, furnished at its lower part with a depending lug, 21, to which is pivoted a more or less vertical connecting rod, 22, the lower part

of which passes through a coupling piece, 23, another more or less vertical connecting rod 24, having its upper end similarly held thereto, said rods being clamped in adjusted
 5 relation by set screws, 25, 25. The lever connecting rod, 24, is united by appropriate means with the foot lever or treadle, 26. Secured at or near the front end of the lever
 10 by a set screw 27, is a box-shaped bracket, 28,—shown in detail by Figs. 4, and 5,—furnished with a more or less vertically situated slot in which is made to fit a smooth bar 29, provided at its lower end with a
 15 horizontally disposed arm 30, having attached thereto a wire screen 31. The parts 29, 30, and 31, comprise in their entirety the safety guard proper which is made to move up and down in front of the die 9, and matrix 10, as hereinafter fully described.

20 In order to insure that the guard 31, may be properly adjusted and when so adjusted be effectively prevented from displacement I form on the inner edge of the bar 29 fine teeth or serrations, 32, with which cooperate
 25 a similarly toothed key-piece, 33. This key-piece 33, is disposed in a vertically situated slot, 34, and is prevented from falling out, when the parts are disconnected, by split pins, 35. Locking engagement of the parts
 30 33, and 29 is effected by means of a set screw 36, cooperating with a notch 37, in the back of the key piece, 33. A lock nut—not shown—may if desired be fitted in connection with the set-screw, 36, for further
 35 insuring positive rigidity of the parts 29, 30, and 31, when assembled and adjusted.

In practice I have found that considerable and much unnecessary noise is caused during the manipulation of the safety guards by the
 40 tendency of the lower edge of the guard to hammer, or approximately so, upon the bed, 38, supporting the matrix, 10, and in order to effectively obviate any such tendency with my improved appliance I fit a buffer
 45 or shock absorbing device, shown to an enlarged scale and in detail by Figs. 6, 7, 8, and 9 inclusive. This device consists essentially of two parts one of which is attached to the lever 2, and the other carried by the
 50 press frame. The former part consists of a box-shaped sleeve, 39, adapted for clamping engagement with the lever 2, by means of a set screw 40, and at one side of said box-sleeve I form a cylindrical or other
 55 shaped recess 41, in which is fitted a piston rod 42, having a plunger 43 at its lower end under the action of a coil spring 44, lock nuts 45, regulating the throw of the plunger as well as controlling the compression on the
 60 spring.

46, is an angle bracket with which the plunger, 43, contacts when the guard 31, is lowered during the stamping operation and it is adapted for attachment to the press
 65 frame 1, by means of a clamping plate 47

and set screws or bolts 48, Figs. 1, 2, and 3, and it is to be particularly noted that I serrate the meeting faces of the angle bracket and clamping plate as shown at 49, 50, respectively to insure absolute adjustability, 70 and perfect rigidity when so adjusted.

In use, and after the die and matrix have been fixed in place, it will be seen from the foregoing description and accompanying drawings that the guard 31, may be easily
 75 and accurately adjusted relative to the bed 38, and furthermore, that the die 9, cannot descend on to the matrix 10, until the gate guard 31, is fully down in front thereof. If a thin piece of sheet metal for example such
 80 as is indicated at 51, Fig. 2, be placed on the matrix 10, the die 9, cannot descend so long as the gate guard 31 rests thereon. In other words by my invention I have rendered it
 85 possible with machines fitted therewith for a piece of metal one-thirty-second of an inch in thickness placed between the bar 30, and the bed 38, to positively prevent the die 9 descending with force, as the said guard
 90 bar 30, must be brought to its lowest point—in contact with the bed 38—before the latch mechanism 18, is released to permit the impact to take place for stamping anything placed on the matrix 10.

Thus it will be seen that by my improve- 95 ments I have effected a very great improvement in safety guard appliances and at the same time simplified their construction considerably, while by making a direct and rigid connection from the foot-lever to the
 100 guard operating-lever, and thence to the latch mechanism positive action is always insured.

Finally I wish to point out that my safety guard device may be adapted to all types of
 105 stamping presses worked or operated by a foot lever release for the latch mechanism with but little alteration as all parts are made relatively adjustable and without in any way departing from the essential features as hereinbefore specifically set forth, for example after the rods 13, 16, have been accurately adjusted to a particular type of stamping press they may be disconnected from the latch 18, and lever 2, and welded
 115 to the coupling-piece 14, and thereby rendered permanently inseparable and rigid. The rods 22, 24, may also be similarly rendered permanently rigid as will be self evident from the foregoing statement. 120

I claim:—

1. The combination with a stamping press of a safety guard attachment comprising a lever pivoted by means of a slotted bracket to a projection on the press frame, an adjustable guard carried by said lever and adapted for up and down movement in front of the dies, an adjustable buffer device carried by the aforesaid lever for preventing
 125 hammering and rigid connections between 130

said lever and the latch and foot lever, substantially as set forth.

2. In combination with the latch and foot lever of a stamping press, a lever pivoted to the press framework intermediate said latch and foot lever, by means of a slotted bracket, a box-shaped bracket arranged at or near the front end of said intermediate lever and adapted to be firmly clamped thereto, a slot formed in one side of said box-shaped bracket to receive one arm of an angle bar, a wire screen rigidly attached to the other arm of said bar, teeth formed on the inner edge of the arm received in the aforesaid slot, a similarly toothed key-piece for co-operation with said toothed arm, a set screw for locking said key-piece to said arm and rigid connections from said intermediate lever to the latch and foot lever, substantially as described for the purpose specified.

3. In combination with the latch and foot lever of a stamping press, a lever pivoted to the press framework intermediate said latch and foot lever by means of a slotted bracket, a box-shaped bracket arranged at or near the front end of said intermediate lever and adapted to be firmly clamped thereto, a slot formed in one side of said box-shaped bracket to receive one arm of an angle bar, a wire screen rigidly attached to the other arm of said bar, teeth formed on the inner edge of the arm received in the aforesaid slot, a similarly toothed key-piece for co-operation with said toothed arm, a set screw for locking said key-piece to said arm, a box-shaped sleeve adapted for clamping en-

gagement with the intermediate lever, said box-shaped sleeve having formed at one side thereof a cylindrical recess in which is disposed a spring pressed plunger adapted for adjustment relative to said box-shaped sleeve, an angle bracket having serrations formed on one arm thereof, a clamping plate similarly serrated for coöperation with the aforesaid serrated arm, means for clamping said bracket to the press frame, and rigid connections between the intermediate lever and the latch and foot lever, substantially as described for the purpose specified.

4. In combination with the latch and foot lever of a stamping press, the lever 2, having slotted bracket 5 thereon, box-shaped bracket 28, provided with slot 34, to receive toothed arm 29, toothed key-piece 33, and set screws 36, for locking said key-piece and toothed arm together, substantially as shown.

5. In combination with the latch and foot lever of a stamping press, the box shaped sleeve, 39, having a cylindrical recess 41, at one side thereof, piston rod 42, with plunger head 43, and coil spring 44, arranged in said recess 41, and adapted for adjustment by lock nuts 45, and angle bracket 46, with clamping plate, 47, for fixture on the press frame, substantially as shown.

Signed at Hamilton, Ontario this 12th day of August, 1910.

JAMES MELVIN JONES.

In the presence of—

ALFRED T. BRATTON,
EDWIN S. GILBERT.