W. W. SHINSKI.

SAFETY ATTACHMENT FOR FOOT STAMPING AND OTHER PRESSES.

APPLICATION FILED MAY 15, 1913.

1,105,106.

Patented July 28, 1914.

2 SHEETS—SHEET 1.

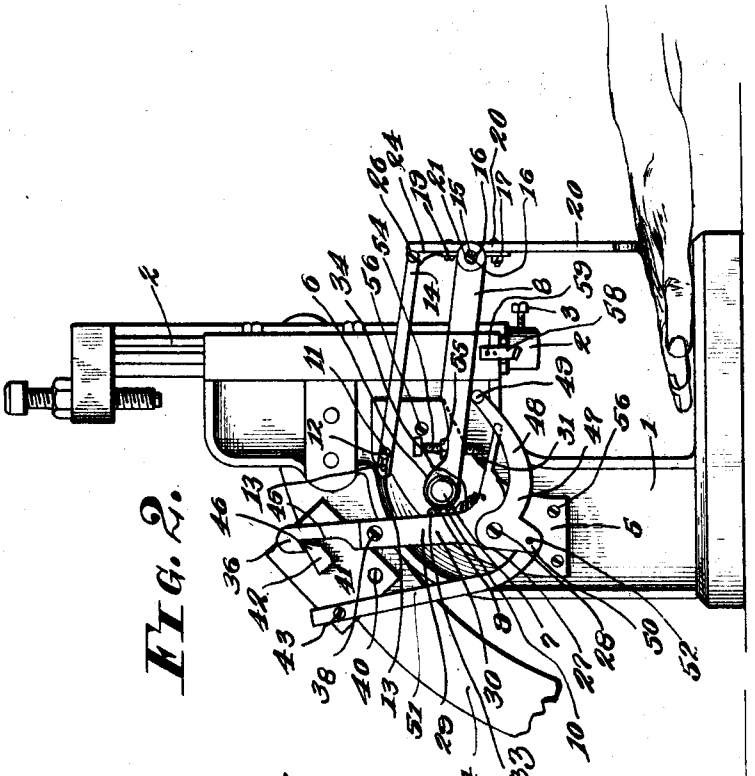


FIG. 2.

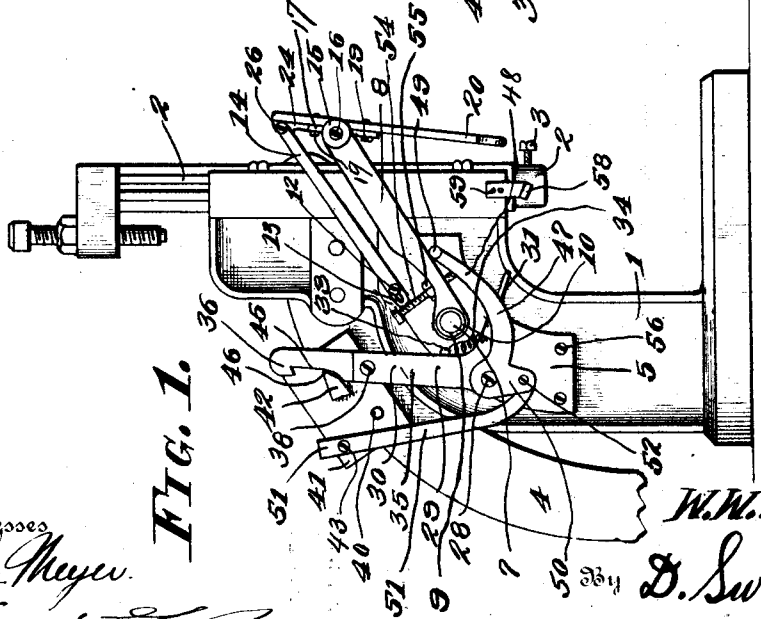


FIG. 1.

Witnesses

Robt. Meyer.

Francis T. Brunell.

Inventor

W. W. SHINSKI.

By D. Swift & Co.

Attorneys

W. W. SHINSKI.

SAFETY ATTACHMENT FOR FOOT STAMPING AND OTHER PRESSES.

APPLICATION FILED MAY 15, 1913.

1,105,106.

Patented July 28, 1914.

2 SHEETS—SHEET 2.

FIG. 4.

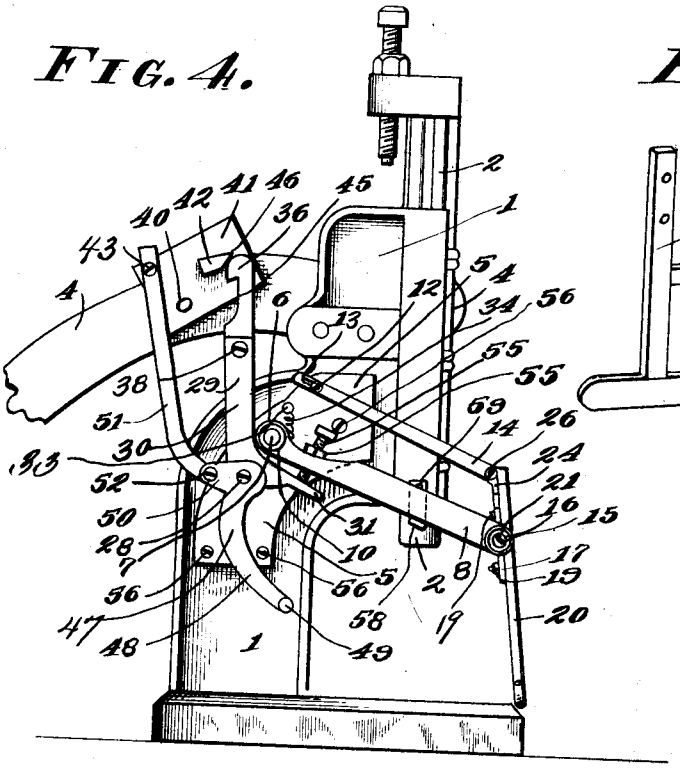


FIG. 3.

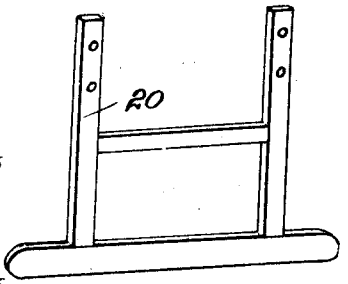


FIG. 5.

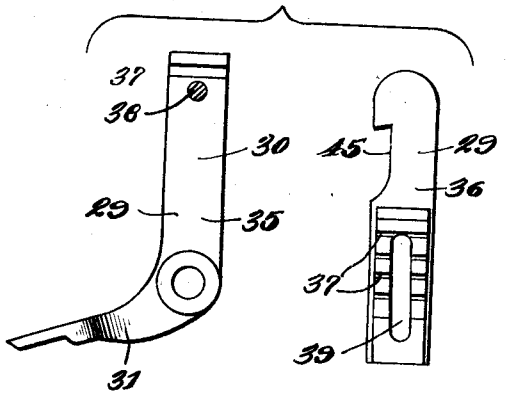
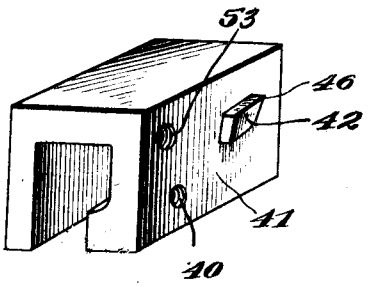


FIG. 6.



Witnesses

Robt Meyer

Francis C. Fraser.

Inventor

W. W. SHINSKI.

By D. Swift & Co.

Attorneys

UNITED STATES PATENT OFFICE.

WALTER W. SHINSKI, OF LA SALLE, ILLINOIS.

SAFETY ATTACHMENT FOR FOOT STAMPING AND OTHER PRESSES.

1,105,106. Specification of Letters Patent. Patented July 28, 1914.

Application filed May 15, 1913. Serial No. 767,845.

To all whom it may concern:

Be it known that I, WALTER W. SHINSKI, a citizen of the United States, residing at La Salle, in the county of La Salle and State of Illinois, have invented a new and useful Safety Attachment for Foot Stamping and other Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an automatic safety device, particularly adaptable for use in connection with foot operated stamping or other presses and the like, whereby injury to the hands of the operator is prevented.

As an object of the invention, it is the aim to provide an automatic operating safety device, which comprises a guard or detector, which is thrown in advance of the punch or press plunger, and in case the guard or detector encounters the operator's hand or other obstruction (which may happen to be in the path of the plunger or punch) the punch will be prevented from operating, but will operate, provided no obstruction is encountered.

Another object of the invention is the provision of means, adapted to be operated by the foot lever, to permit the gate, guard, or detector to fall by gravitation in advance and in front of the punch for a certain distance, and if the guard or gate encounters an obstruction, such as the operator's hand or the like, the foot lever cannot be operated further, but in case no obstruction is encountered, the links which connect the gate or guard to the press will actuate the safety catch from the path of a lug of a clamp carried on the foot lever, thereby allowing the foot lever to be further actuated, which in turn will actuate the punch or plunger to its complete movement. Then when the foot lever is lowered, said means, which allows the gate or guard to fall by gravitation, will raise the gate or guard to its normal position, while a spring will restore the safety catch lever to its normal position in engagement with the lug of the clamp on the foot lever.

In practical fields it may be found essential and necessary to subject the minor details of construction of the improved automatic safety device to alterations, to which the patentee is entitled, provided the alterations fall within the scope of what is claimed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings:—Figure 1 is a view in side elevation, showing the improved automatic safety device as applied to a stamping machine or other press, in its raised or normal position. Fig. 2 is a view in side elevation, showing the foot lever as having been partly operated, and the gate or guard lowered to a certain distance, and which has encountered an obstruction, such as the operator's hand. Fig. 3 is a detail view of the gate or guard. Fig. 4 is a view in side elevation, showing the foot lever completely raised, and the gate or guard or detector fully lowered. Fig. 5 is an enlarged detail view of the two part safety catch lever. Fig. 6 is a detail perspective view of the clamp carried by the foot lever.

Referring more particularly to the drawings, 1 designates the usual form of press, stamping or punching machine, which is provided with the necessary press or punch plunger 2, in the lower end of which the usual punch or other device (not shown) is adapted to be secured, by virtue of the set screw 3. This machine is provided with the ordinary foot lever 4 adapted to actuate the plunger when raised, which foot lever may be actuated in any suitable manner (not shown).

Secured to one face of the standard of the stamping or other press machine is a plate 5, which is of the shape corresponding to the shape of the standard, as shown clearly in Figs. 1 to 4 inclusive. This plate 5 is provided with a laterally extending boss 6, into which is screwed a bolt 7, on which one end of the link 8 is pivoted. Mounted upon the bolt between the link 8 and the boss 6 is a sleeve 9, thereby holding the link offset from said plate 5, there being a washer 10 between the head of the bolt 7 and the link 8. Projecting laterally from the face of said plate at its upper portion is a second boss 11, into which a screw 12 is threaded. This screw 12 passes through one of two apertures 13 in one end of the link lever 14. Mounted in the end 15 of the link 8 is a rod 16, which passes through the bracket bearing 17, which are bolted or otherwise secured at 19 to the gate, guard or detector 20. The bracket bear-

ing 17 are arranged between the head 21 of the rod 16 and the end 15 of the link 8. The upper end of the bracket bearing 17 is provided with an ear 24, to which the end 25 of the link lever 14 is pivoted by the screw bolt 26. It will be observed upon examining Fig. 1 of the drawings that when the foot lever is in its normal position with the gate or guard raised, the links 8 and 14 act to throw the lower end portion of the gate or guard in toward the standard of the stamping or punching machine or press. On examining Fig. 4, however, it will be noted that the links 8 and 14 tend to throw the gate or guard or detector outwardly at its lower end. The inward and outward positions of the lower end of the gate or guard may be regulated by adjusting the screw 12 in the other aperture 13 of the link lever 14. Also projecting laterally from the plate 5 and threaded therein is a bolt 28, on which the safety catch lever 29 is pivoted. This catch lever 29 comprises two arms 30 and 31 extending at angles to one another. Connecting between the arm 31, as at 32, and the stud 33 of the plate 5 is a spring 34, the purpose of which will hereinafter appear.

The arm 30 comprises two parts 35 and 36, the adjacent faces of which are provided with teeth 37, which interengage, when the two parts are clamped together by the bolt 38, that is, clamped together in adjusted positions. The bolt 38 is carried by the part 35, and passes through a slot 39 of the part 36. By the provision of the slot 39, the part 36 is permitted to be adjusted. Clamped by means of a set screw 40 to the foot lever is a clamp 41, from one face of which a lug 42 and a pin or stud 43 project. When the foot lever is in its normal position, with the gate or guard raised, as shown in Fig. 1, the lug 42 engages partly in the notch 45 of the part 36 of the catch lever. As will be observed in Fig. 1 while the foot lever is in its normal position, there is a slight space or clearance between the lug and the upper end of the notch 45, so that the foot lever may be actuated slightly, in order that the gate or guard may be actuated downwardly partly. However, on operating the gate or guard downward and encountering an obstruction, the foot lever will be prevented from further operating, owing to the nose 46 of the lug or dog 42 coming in contact with the upper end or portion of the notch 45. Also pivoted upon the bolt 28 is a bell crank lever 47, the arm 48 of which is provided with a lug 49, which lies under and in the path of the link 8, and acts to support the link 8 in its upper position, as shown in Fig. 1, as well as in a partly lowered position. The arm 50 of the bell crank lever is connected to the pin or stud 43 by the link 51, as at 52. Threaded through the link 8 is a screw 54, held in adjusted positions by the nut 55. The plate 5 is secured to the standard of the stamping or punching machine by the screws 56.

Upon raising or operating the foot lever, thereby throwing the arm 48 of the bell crank lever 47 downward, which allows the link 8 and the gate or guard to lower by gravitation, the screw 54 will contact with the arm 31 of the safety catch lever, that is, provided no obstruction is encountered by the gate or guard, thereby throwing the arm 30 including the part 36 forwardly, with the notch 45 out of the path of the lug 42, which will permit the foot lever to complete its movement, in order to operate the punch or press plunger. When the foot lever is again lowered or restored to its normal position, the links 8 and 14 are raised including the guard or gate, by virtue of the lug 49 of the arm 48. When the gate or detector and the links 8 and 14 are being restored to their upper positions, the action of the spring 34 restores the safety catch lever to its normal position. When the gate or guard is lowered to its fullest extent, as shown in Fig. 4, the link 8 rests upon the bracket 58, secured by screws 59 to a portion of the standard of the stamping or pressing machine.

The invention having been set forth, what is claimed as new and useful is:—

1. In combination with a punching machine having an operating foot lever, a gravity actuated gate carried by the machine, and a mechanism between said gate and the lever to support the gate when the lever is in its normal position, said mechanism adapted to be actuated by the foot lever when raised to prevent the gate from falling by gravitation to its fullest extent, said mechanism including a device adapted to be actuated when said gate completes part of its movement to permit the foot lever to be completely raised or operated.

2. In combination with a punching machine having an operating foot lever, a gravity actuated gate carried by the machine, and a mechanism between said gate and the lever to support the gate when the lever is in its normal position, said mechanism adapted to be actuated by the foot lever when raised to prevent the gate from falling by gravitation to its full limit, said mechanism including a safety catch device to prevent said foot lever from completing its movement in case the gate encounters an obstruction.

3. In combination with a punching machine having an operating foot lever, a gravity actuated gate carried by the machine, and a mechanism between said gate and the lever to support the gate when the lever is in its normal position, said mecha-

nism adapted to be actuated by the foot lever when raised to prevent the gate from falling by gravitation to its full limit, said mechanism including a safety catch device to prevent said foot lever from completing its movement in case the gate encounters an obstruction, links connecting said gate to the standard of the punching machine, and a device carried by one of said links to actuate said safety device to permit the foot lever to complete its movement in case the gate encounters no obstruction.

4. In combination with a punching machine having an operating foot lever, a gravity actuated gate carried by the machine, and a mechanism between said gate and the lever to support the gate when the lever is in its normal position, said mechanism adapted to be actuated by the foot lever when raised to prevent the gate from falling by gravitation to its full limit, said mechanism including a safety catch device to prevent said foot lever from completing its movement in case the gate encounters an obstruction, links connecting said gate to the standard of the punching machine, and an adjustable device to permit the foot lever to complete its movement in case the gate encounters no obstruction, and means to restore the safety device, when the gate is raised and the foot lever restored to its normal position.

5. In combination with a punching machine having an operating foot lever, a supporting plate secured to the standard of the machine, a gravity actuated detector gate, links connecting said gate to the plate, a clamp having a lateral lug adjustably carried by the foot lever, a bell crank lever pivoted on said plate and having link connections with said clamp and adapted to engage one of said links to support the gate in a raised position against gravitation when the foot lever is in its normal position, said bell crank lever constituting means actuated by the foot lever when raised to permit the link and the gate to fall by gravitation for a certain distance, a safety catch lever pivoted on said plate adapted to engage the lug of the clamp to prevent the foot lever from completing its full movement, provided the gate encounters an obstruction, an adjustable device carried by one of said links to actuate said safety catch lever from the path of said lug to permit the foot lever to complete its full movement, provided no obstruction is encountered, and means for restoring said safety catch lever to its normal position when the gate is raised.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER W. SHINSKI.

Witnesses:
W. G. BROWN,
W. E. JOHNSON.