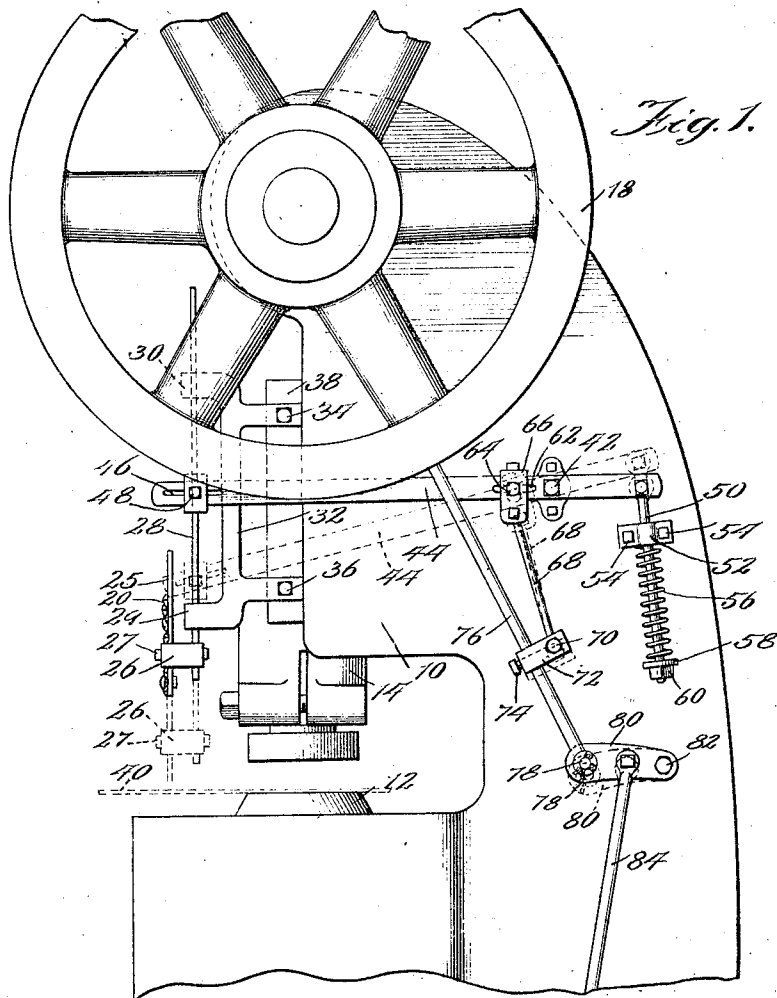


P. Z. KOHLHAAS.
PUNCH PRESS GUARD.
APPLICATION FILED APR. 29, 1910.

1,001,050.

Patented Aug. 22, 1911

2 SHEETS—SHEET 1.



Witnesses:

Wm. D. King
Alvin J. Smith

Inventor:

Peter Zirker Kohlhaas
By Cheever Cox

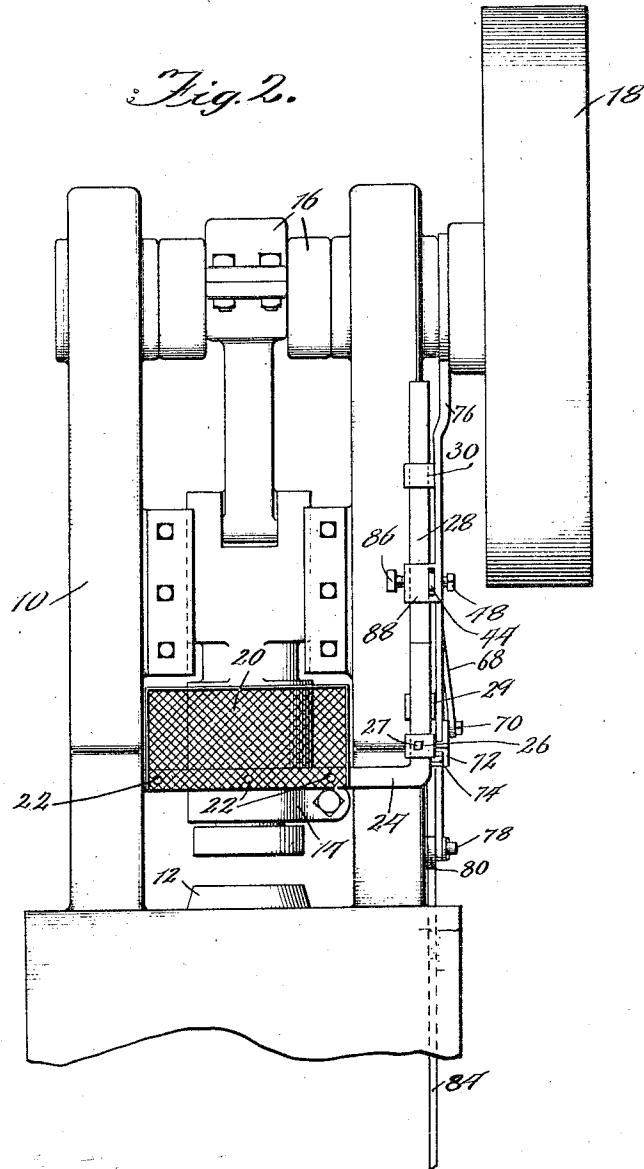
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Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

PETER ZIRBER KOHLHAAS, OF CHICAGO, ILLINOIS.

PUNCH-PRESS GUARD.

1,001,050.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed April 29, 1910. Serial No. 558,517.

To all whom it may concern:

Be it known that I, PETER ZIRBER KOHLHAAS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Punch-Press Guards, of which the following is a specification.

This invention relates to guards for punch presses, and its object is to provide a novel mechanism for so operating such a guard that it will be moved to a position where it excludes the hands and arms of the operator from the line of movement of the press before the punch press is set in operation.

The invention consists in a novel mechanism here shown and described for so operating a punch press guard.

In the drawings Figure 1 is a side view of a punch press equipped with the device of this invention, showing in full lines the guard in raised position; the dotted lines showing the guard in lowered position. Fig. 2 is a front view of the same press.

The device is applied to an ordinary punch press, which consists of one or more frame members 10 having the bed 12 above which reciprocates the punch member proper 14 under the action of crank mechanism 16 controlled by the fly wheel 18. The apparatus thus far described is of ordinary construction and forms no part of this invention.

There has been a great call for devices which will close down about the punch members proper 12-14 in such a way that the hands or arms of the operator must be entirely withdrawn from their proximity before the punch member 14 can be set in motion, and such a member is here illustrated in the wire guard member 20 secured by screws 22 to a horizontal arm 24 of an upright member 25 slidable in a block 26, detachably secured in said block by a set screw 27. This block 26 is rigidly secured to another rod 28 slidable in the arms 29 and 30 of a bracket 32 secured by bolts or screws 34 and 36 to the projection 38 on the front of main frame 10. When this member 26 is moved downward from the full line position of both figures to the dotted line position shown in Fig. 1 the wire guard 20 is, as shown, in contact with the plate 40, which is being worked upon by the press, and the fingers of the operator

are excluded. When this same wire guard 20 is raised to the full line position of both figures the punching tools are accessible to the operator. Pivoted upon a bolt or screw 42 near the back of frame member 10 is a lever 44 having in its forward end an elongated slot 46 which engages with a screw or pin 48 on the rod 26 in such a way that, as the lever 44 is rocked about pivot 42, it moves rod 26 and consequently wire guard 20 up and down between the positions described. Pivoted to the opposite end of lever 44 is a rod 50 slidable in a clasp member 52 secured to the frame 10 by bolts 54. About this rod 50 and below this member 52 is a compression coil spring 56 engaging the member 52 at one end and at the other end engaging the washer 48 held in position by a nut 60. The result of this is that the spring tends to normally hold the rod 26 and guard 20 in elevated position. It is so designed as to counterbalance the weight of the guard and connected parts and in consequence the guard and its operating mechanism do not affect the operation of the regular press parts, practically speaking, and hence no change in the latter is necessary when my guard is added. This is of importance because it enables the guard mechanism to be applied to all of the standard presses without making any change in them.

At a convenient point in the longer arm of lever 44 is an elongated slot 62 through which is passed a bolt 64 carrying a metallic plate member 66. Pivoted to the lower end of this plate member 66 is a rod 68 whose opposite end is pivoted at 70 to a slide 72 detachably secured by a set screw 74 to a rod 76. The upper end of this rod 76 is connected to the ordinary clutch, not here shown in detail, which controls the application of power, which is always provided for the punch press. When this rod 76 is in its highest position the clutch is thrown out and the punch is at rest. When this rod 76 is pulled downward the clutch is thrown in and the punch operates. The lower end of this rod 76 is connected by a pivot 78 to a lever 80 pivoted at 82. Also connected to this lever 80 is another rod 84 extending downward to the workman's foot treadle, not here shown.

The mechanism is so adjusted that when the operator depresses his foot treadle and thus pulls the rod 84 downward and conse-

quently pulls the rods 76 and 68 downward the lever 34 is moved from the full line to the dotted line position of Fig. 1; that is to say, with the guard 20 in contact with the work 40 before the rod 76 moves the clutch a sufficient distance to set the punch in operation. Different thicknesses and kinds of work are provided for by adjusting the position of the guard 20 up and down by sliding the rod 25 through block 26, set screw 27 being loosed for the purpose.

In applying a given size mechanism here described to punch presses of different sizes adjustments are made by means of the set screw 74 and bolt 64. Adjustment of the guard can further be made by loosening the set screw 86 which holds the block 88, which supports screw 27, upon rod 28.

The claims are:—

1. The combination with a press having a rod adapted to throw the press into active operation near the end of its forward movement, a movable guard and substantially non-yielding articulated connections between said rod and said guard for causing the two to move at all times substantially in unison.

2. The combination with a press having a rod adapted to throw the press into active operation near the end of its forward movement, a movable guard, a lever pivoted to said guard, and a member non-yieldingly and articulately connecting said lever and said rod.

3. The combination with a press having a rod adapted to throw the press into active operation near the end of its forward movement, a movable guard, a lever pivoted to said guard and a rod articulately fastened at one end to said lever and at the other end to said rod.

4. The combination with a press having an operating rod 76 under the direct control of the operator and adapted to throw the press into active operation near the end of

its forward movement, a movable guard, a lever 44 fulcrumed on the frame of the machine and pivoted to said guard; and a rod 68 articulated at one end to lever 44 and at the other end to rod 76 for preventing movement of rod 76 except in substantial unison with the guard.

5. The combination with a press having an operating rod 76 under the direct control of the operator and adapted to throw the press into active operation near the end of its forward movement, a movable guard, a lever 44 fulcrumed on the frame of the machine and pivoted to said guard, and a rod 68 having at one end an articulated joint adjustable lengthwise of said lever, and having at the other end an articulated joint adjustable lengthwise of said rod.

6. In a press the combination of a die, a power device, a clutch for connecting and disconnecting the two, a depressible operating rod 76 adapted to throw the clutch in near the end of its depression, a slidable, depressible guard, a guard lever articulately fastened thereto and a rod 68 connecting said lever to rod 76 substantially without lost motion, the parts being so arranged that rod 68 holds the guard 20 raised or lowered in proportion to the movement of said rod 68.

7. The combination with a press having a latch adapted to throw the press into active operation, of a vertically movable safety guard, a lever operatively connected to said guard, a two part rod connecting said latch and said lever and a bracket adjustably connecting the two parts of said rod together.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

PETER ZIRBER KOHLHAAS.
Witnesses:

DWIGHT B. CHEEVER,
MARGARET D. ROBB.