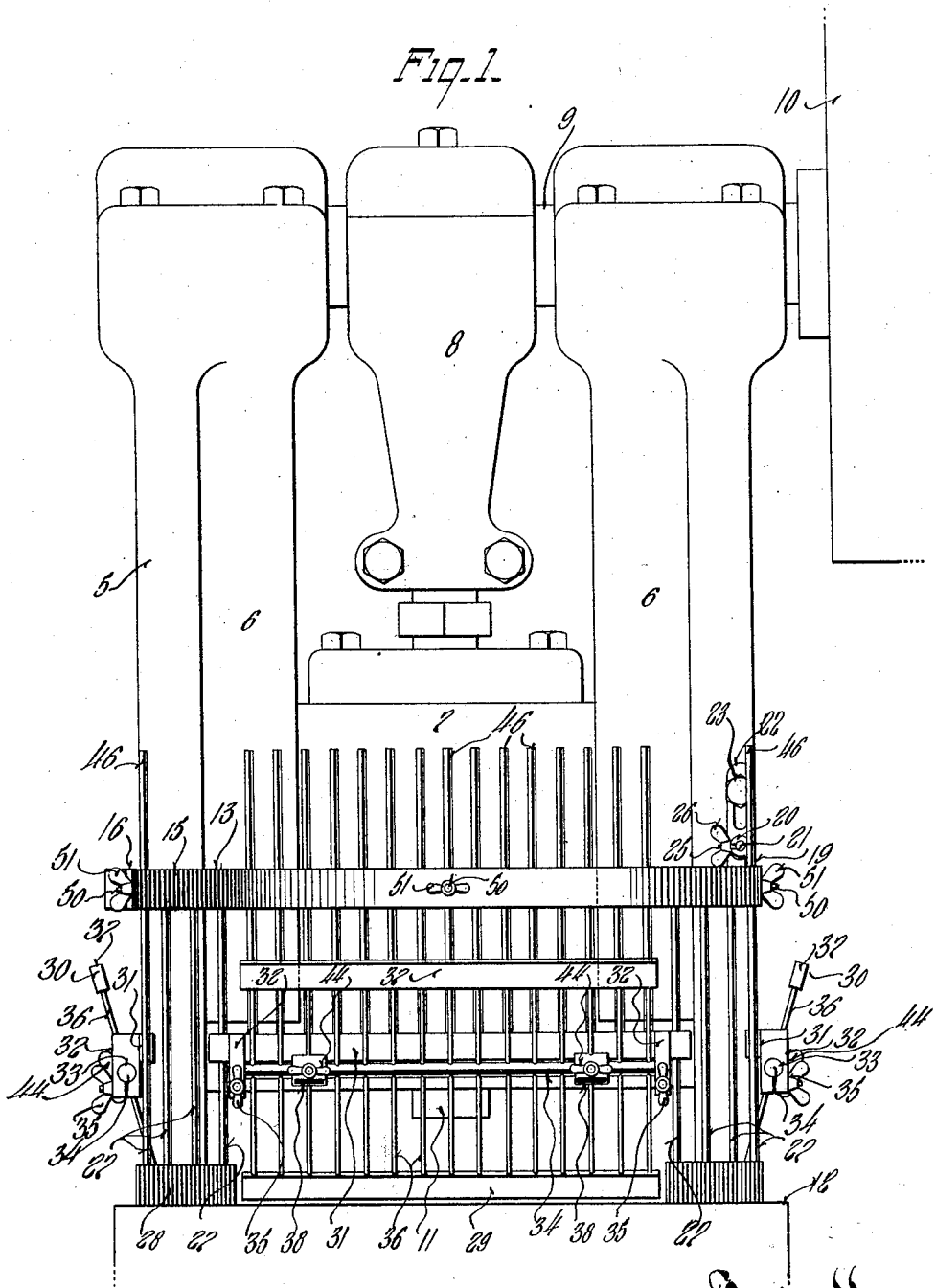
Nov. 3, 1931. W. S. FREEBURG 1,830,508

GUARD

Filed Sept. 20, 1928 2 Sheets-Sheet 1

Fig. 1.



Inventor

WALTER S. FREEBURG,

By Ira Milton Jones

Attorney

Nov. 3, 1931. W. S. FREEBURG 1,830,508

GUARD

Filed Sept. 20, 1928 2 Sheets-Sheet 2

Fig. 2.

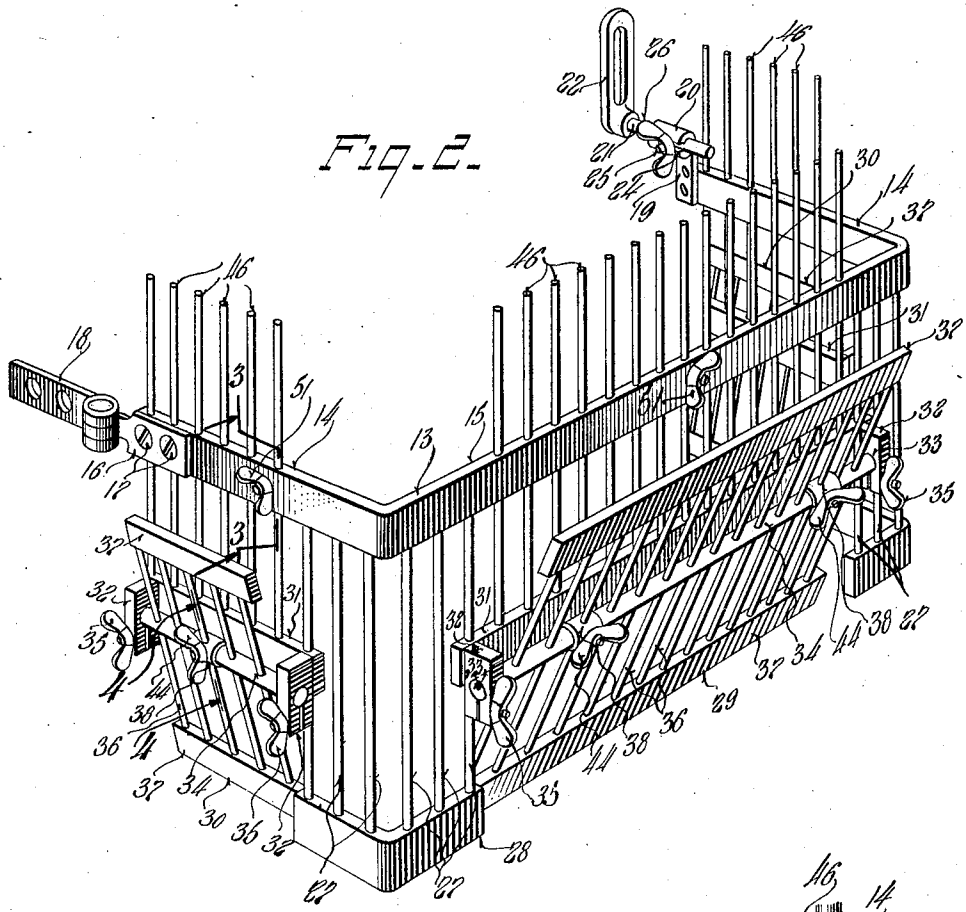


Fig. 4.

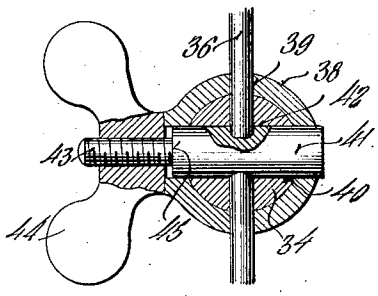
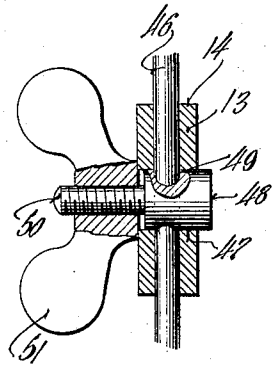


Fig. 3.



Inventor

WALTER S. FREEBURG,

By Ira Milton Jones

Attorney

Patented Nov. 3, 1931 1,830,508

UNITED STATES PATENT OFFICE

WALTER S. FREEBURG, OF MILWAUKEE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO LYNDE BRADLEY AND ONE-HALF TO HARRY L. BRADLEY, BOTH OF MILWAUKEE, WISCONSIN

GUARD

Application filed September 20, 1928. Serial No. 307,261.

This invention relates particularly to guards for punch presses and the like and has as a primary object the provision of a guard which is fully adjustable to meet the requirements of various types of work.

Another object of this invention resides in the provision of a guard of the character described which totally encloses the jaws of a punch press or the like during operation but may be readily swung out of position to permit access to the dies thereof for repair or replacement.

A further object of this invention resides in the provision of a guard of the character described having gate members at its sides and front which are readily adjustable to be entirely closed or to permit the insertion of various sizes of work.

And a still further object of this invention resides in the provision of a guard of the character described which is ruggedly constructed, is simple in design and which may be readily applied to any punch press or the like.

With the above and other objects in view which will appear as the description proceeds, my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

In the accompanying drawings, I have illustrated one complete example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a front view of a portion of a punch press with my improved guard secured thereto;

Figure 2 is a perspective view of the guard removed from the press;

Figure 3 is a fragmentary, sectional view taken through Figure 2 on the plane of line 3—3, and

Figure 4 is a fragmentary sectional view taken through Figure 2 on the plane of line 4—4.

Referring now more particularly to the accompanying drawings in which like numerals designate like parts throughout the several views, 5 represents a punch press or the like having guide-ways 6 and a movable ram or plunger 7 adapted to be moved longitudinally in the guide-ways by an eccentric strap 8 actuated by an eccentric, not shown, carried by a shaft 9 which is driven in any suitable manner through a drive pulley 10. As is customary, the ram or plunger 7 carries a movable die 11 which cooperates with a stationary die, not shown, carried by the base 12 of the press.

The improved guard is secured to the guide-ways of the press or any other suitable portion thereof and includes a substantially U shaped frame member 13 having sides 14 and a front 15, one side member 14 having a hinge member 16 secured thereto by screws 17 or the like which is pivotally connected with a second hinge member 18 adapted to be secured to one side of the press. The end of the other side arm 14 has a member 19 extended therefrom provided with an apertured portion 20 which is arranged to receive a stud 21 carried by an attaching plate 22 secured to the adjacent guide-way 6 of the press by cap screws or the like 23. The apertured member 20 also has a slot 24 communicating with the aperture therein through which a bolt 25 carried by the stud 21 passes as the member 20 is engaged with the stud, a wing nut 26 threaded on the bolt providing means for clamping member 20 to the stud to secure the frame of the guard in its closed position.

Extended downwardly from the corners of the frame 13 are a plurality of fixed rods 27, the lower ends of which have right angular shaped members 28 secured thereto which preferably engage the surface of the base 12 of the press when the guard is closed. The inner ends of the right angular shaped members 28 are spaced apart at the front of the guard and their outer ends terminate short of the ends of the sides 14, the space between the members 28 at the front being closed by

a gate member 29 and the spaces at the sides being closed by side gates 30.

The gates 29 and 30 are substantially identical except as to length and each include a supporting cross bar 31, the outer ends of which are apertured to freely slidably receive the adjacent outermost upright bars 27. Carried at each end of the bar 31 and in alignment are bearing blocks 32 having apertures 33 in which a rod 34 is adjustably rotatable, rotation of the rod 34 being restrained by slotting the bearing members 32 and providing wing nuts 35 to frictionally bind the shaft 34 in the apertures 33. The rod 34 is provided with a plurality of spaced apertures in which bars 36 are freely slidably mounted, the ends of which are fixed in longitudinal members 37.

The gate 29 thus consists of the members 37 connected by the bars 36 which are freely slidable as a unit in the apertures of the rod 34, the angular position of the gate being readily adjustable by rotation of the rod as hereinbefore described and the vertical position of the gate proper with respect to the rod 34 is maintained by a clamping arrangement illustrated in figure 4. The clamping means consists of strengthening sleeves 38 fixed to the rod 34 at spaced points and apertured, as at 39, in alignment with one of the apertures through which a rod 36 passes. The rod 34 and each strengthening sleeve 38 are transversely bored, as at 40, in communication with the aperture 39 in the sleeves and the apertures in the rod 34 through which the bars 36 pass to receive studs 41. The studs 41 are likewise apertured, as at 42, in alignment with the apertures 39, to permit the rods 36 to pass therethrough, and the outer end of the studs is reduced and threaded, as at 43, to receive a wing nut 44. As the outer end 45 of the major portion of the stud terminates short of the adjacent face of the strengthening sleeve 38 against which the wing nut abuts, pressure applied by the wing nut tends to draw the stud 41 through the transverse bore 40 and bind the adjacent rod 36 against longitudinal movement.

The space above the bar 31 is closed by a plurality of vertical bars 46, the lower ends of which are fixed in the member 31 and the upper portions of which are slidable in apertures in the front bar 15 of the frame member 13. A locking member, as illustrated in Figure 3, releasably secures the member 31, together with the plurality of vertical bars 46 and likewise the gate member 29, in adjusted vertical position. This locking means is on the same order as that shown in Figure 4 and includes a bore 47 extended transversely through the front portion 15 of the frame and in communication with the medial aperture through which one of the bars 46 passes to mount a stud 48 which is apertured, as at 49, to permit the medial bar 46 to pass therethrough. The reduced end 50 of the stud likewise receives a wing nut 51 and tightening thereof binds the rod against longitudinal movement and thus secures the gate assembly in adjusted position.

The side gates 30 are substantially identical to the gate member 29 previously described except that their member 31 is slidable on only one vertical rod 27, and as the gates 30 are relatively shorter than the gates 39 only one locking means is provided to adjust the longitudinal position thereof.

From the foregoing description taken in connection with the accompanying drawings it will be readily apparent to those skilled in the art to which an invention of this character appertains that I provide a guard which may be arranged to completely enclose the dies of a punch press or the like to prevent access thereto but at the same time permit an unobstructed view of the die, and which may be arranged to permit material of various sizes to be fed thereto either from the sides or the front of the press and one which may be readily opened to permit access to the dies.

I claim:

1. A guard for punch presses and the like, comprising a frame member, fixed bars carried by the frame member and spaced apart to provide a space through which material may be fed to the press, movable bars carried by the frame member between the fixed bars, and a gate member carried by the movable bars and cooperating therewith to adjustably close the space between the fixed bars.

2. In a guard for punch presses and the like, a frame member, bars vertically slidable in the frame member, a cross bar carried by said bars, a rod member rotatably mounted from said cross bar, and a gate member carried by the rod and adjustable therein.

3. In a guard for punch presses and the like, a frame member, bars vertically slidable in the frame member, a cross bar carried by said bars, a rod member rotatably mounted from said cross bar, and a gate member carried by the rod and adjustable angularly by rotation of the rod and vertically by movement thereof with respect to the rod.

4. In a guard for punch presses and the like, a frame member provided with a plurality of apertures, bars slidably mounted in the apertures, a transverse member carried by the bars, means engageable with the transverse member for guiding the movement thereof and of the bars with respect to the frame member, bearing members carried by the transverse member, a rod adjustably rotatable in the bearing members and provided with a plurality of apertures, and a gate member comprising a plurality of bars slidable in the rod member.

5. In a guard for punch presses and the

like, a frame member, a plurality of spaced bars vertically slidable in the frame member, means connecting the bars, and a gate member connected with the bars and adjustable with respect thereto.

6. In a guard for punch presses and the like, a member adapted to be connected with a press and having sides and a front, a plurality of bars slidably connected with the member to partially close the sides and front, and gate members adjustable with respect to the slidable bars to complete the closure.

7. In a guard for punch presses and the like, a substantially U shaped frame member adapted to be connected with a press, fixed bars carried by the member and closing a portion of its sides and front, sets of spaced bars slidably connected with the member at its sides and front to cooperate with the fixed bars to complete the guard, and adjustable gate members carried by the sets of slidably mounted bars.

8. In a guard for punch presses and the like, a frame member adapted to be connected with a press, fixed bars carried by the frame member and spaced apart to provide a space through which material may be fed to the press, a plurality of bars vertically slidably connected with the frame member, and a gate member carried by and angularly adjustable with respect to said plurality of slidable bars, the slidable bars and the gate member closing the space between the fixed bars.

In testimony whereof I have hereunto affixed my signature.

WALTER S. FREEBURG.