April 28, 1931. G. G. MacCAFFERTY 1,803,066

GUARD FOR PRINTING PRESS ROLLS

Filed Feb. 10, 1930

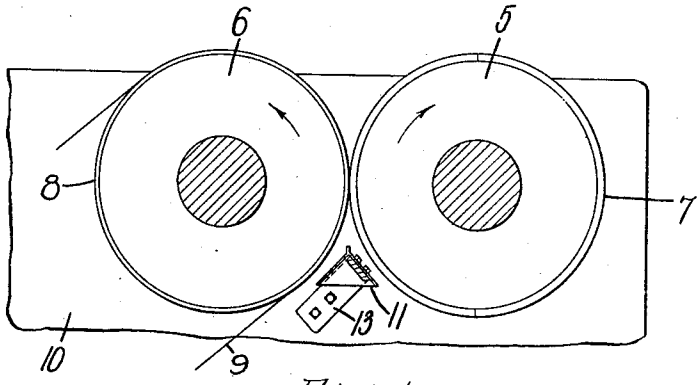


Fig. 1.

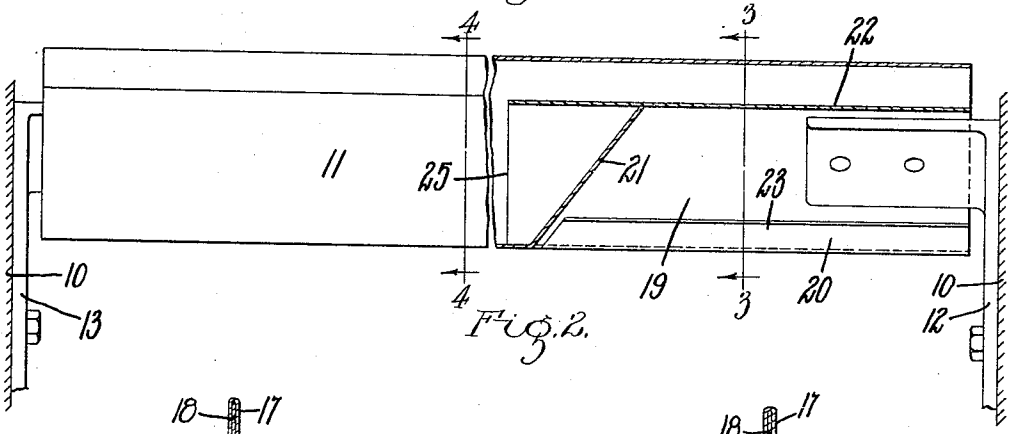


Fig. 2.

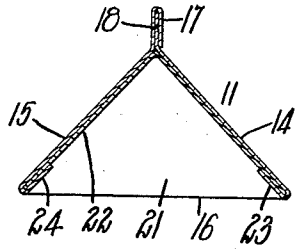


Fig. 3.

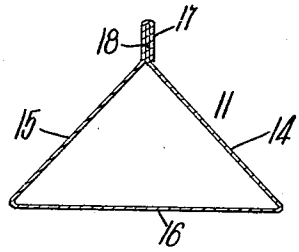


Fig. 4.

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UNITED STATES PATENT OFFICE

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GUARD FOR PRINTING-PRESS ROLLS

Application filed February 10, 1930. Serial No. 427,080.

This invention relates to an improvement in guards for printing press rolls.

In certain localities, state laws or municipal ordinances make it obligatory that guards be provided on printing presses adjacent to the printing rolls where there is danger of the pressman catching his hand in the rolls when threading the paper therebetween. In most presses the guard that is provided consists of an ordinary angle bar of iron or steel, and although a bar of this type serves satisfactorily as a guard, nevertheless it is a continual menace to the machine for the reason that occasionally the type plates that are clamped to the printing rolls become loosened accidentally during the operation of the press and before this is discovered and the press brought to a stop the plates become so displaced upon the rolls that they contact with the underside of the bar and cause the latter to be broken or sprung between the rolls where upon being crushed they cause serious injury not only to the type plates and cushion upon the rolls, but also to the rolls and other parts associated therewith as, for example, the shafts, bearings and driving gears for the rolls. So far as the type plates and cushion are concerned, these parts may be easily replaced, but the damage to the rolls and supporting and driving means therefor often causes serious shut-downs of the press until the damaged parts are repaired or replaced.

The object of this invention is to provide an improved guard for printing press rolls, constructed in such a manner that if it is hit as above mentioned and forced between the rolls, it will collapse and be crushed in such a manner that the damage will be confined entirely to the type plates and cushion and no injury will be sustained by the rolls, or the shafts, bearings or driving gears for said rolls.

The invention consists in a guard for the rolls of a printing press as set forth in the following specification and particularly as pointed out in the claims thereof.

Referring to the drawings:

Fig. 1 represents a sectional elevation of two co-operating printing rolls or cylinders, a guard embodying my invention being associated therewith.

Fig. 2 is a partial side elevation and partial longitudinal section of the guard which is shown mounted between the side frames of a printing press.

Fig. 3 is a transverse section taken on the line 3—3, Fig. 2, looking in the direction of the arrows on said line.

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 1, looking in the direction of the arrows on said line.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 and 6 represent a pair of co-operating printing press rolls or cylinders, the roll 5 having the usual type plates 7 clamped thereon in the usual well-known manner and the roll 6 having the usual cushion 8 secured thereto in a well-known manner. The rolls 5 and 6 are rotated in the direction of the arrows, Fig. 1, and a strip of paper 9 is fed between the rolls as indicated in Fig. 1. The rolls 5 and 6 are mounted in any suitable manner upon side frames 10 of the printing press.

Located between the rolls 5 and 6 and directly beneath the point where the type plates 7 contact with the paper 9 is a guard 11, the opposite end portions of which are secured to the inner surfaces of the side frames 10 by means of brackets 12 and 13. The guard 11 is constructed of thin sheet metal and embodies therein a hollow intermediate portion triangular in form consisting of inclined side portions 14 and 15 and an under side 16, the latter acting to reinforce the side portions at the bottom thereof.

One edge portion of the strip of sheet material of which the guard 11 is formed is bent to form a U-shaped rib 17 which extends the entire length of the guard at the top thereof, and an opposite edge 18 of said strip of sheet material projects into the U-shaped portion 17 and is clamped between the opposite sides thereof. The portions 17 and 18 co-operate to provide a reinforcing and stiffening means for the top of the guard 11. The end portions of the guard 11 extend beyond the hollow triangular portion thereof at

19 and are open upon their undersides at 20, the material of the underside 16 being bent upwardly through the openings 20 to form an inclined end portion 21 for the hollow intermediate portion. The end portions 19 are angular in form and are reinforced by angle plates 22, the sides of which fit closely against the sides 14 and 15. The angle plates 22 are held firmly in position by bending the lower edge portions of the sides 14 and 15 inwardly and upwardly at 23 and 24 respectively and thereby enclosing the edge portions of the angle plates 22. The angle plates 22 extend from the ends of the guard 11 to a point within the hollow intermediate portion, terminating at 25, see Fig. 2. The brackets 12 and 13 which secure the guard to the side frames 10 of the printing press are secured to the under surface of the end portions of the guard.

The action of the device hereinbefore specifically described is as follows:—Assuming that a type plate 7 becomes loosened upon the type roll 5, or possibly that the cushion 8 becomes loosened upon the roll 6; if either plate or cushion hits the under side of the guard 11 causing the latter to break or be sprung upwardly between said rolls, the guard, owing to its thin hollow construction will collapse very easily and be so crushed between the rolls that all the damage will be confined to the type plates 7 and the cushion 8, and these can be easily and quickly replaced. There will be no injury whatever to the rolls or the shafts, bearings or gears that are associated therewith. Although the guard is constructed of very thin sheet material, it is, nevertheless, sufficiently rigid because of its hollow triangular construction to answer all the requirements as a guard for the protection of the hands of the pressman.

I claim:

1. A guard for printing press rolls comprising an angular member constructed of thin sheet material and capable of being crushed between said rolls without injuring the rolls and/or the supporting and driving means therefor.

2. A guard for printing press rolls comprising a hollow triangular member constructed of thin sheet material and capable of being crushed between said rolls without injuring the rolls and/or the supporting and driving means therefor.

3. A guard for printing press rolls having in combination, a hollow triangular intermediate portion and angular end portions all constructed of thin sheet material and capable of being crushed between said rolls without injuring the rolls and/or the supporting and driving means therefor.

4. A guard for printing press rolls having, in combination a hollow triangular intermediate portion constructed of thin sheet metal, angular end portions formed integral therewith and constituting extensions therefor, and means to reinforce said end portions.

5. A guard for printing press rolls having, in combination a hollow triangular intermediate portion constructed of thin sheet metal, angular end portions formed integral therewith and constituting extensions therefor, and an angle plate of thin sheet metal contacting with the sides of said end portions and reinforcing the same.

6. A guard for printing press rolls comprising an angular member constructed of sheet material and embodying therein converging side portions, each terminating at its upper edge in a longitudinal flange, said flanges co-operating with each other to reinforce the angular member at the top thereof, and other reinforcing means for the lower portions of said angular member.

7. A guard for printing press rolls comprising an angular member constructed of sheet material and embodying therein converging side portions, one of said side portions terminating in a U-shaped rib and the other of said side portions projecting between the sides of said rib and co-operative with the latter to reinforce the angular member.

In testimony whereof I have hereunto set my hand.

GEORGE G. MacCAFFERTY.