Jan. 13, 1959 D. W. MADDEN 2,868,569

GUARD FOR PUNCH PRESS OR THE LIKE

Filed June 29, 1955 2 Sheets-Sheet 1

Fig. 1.

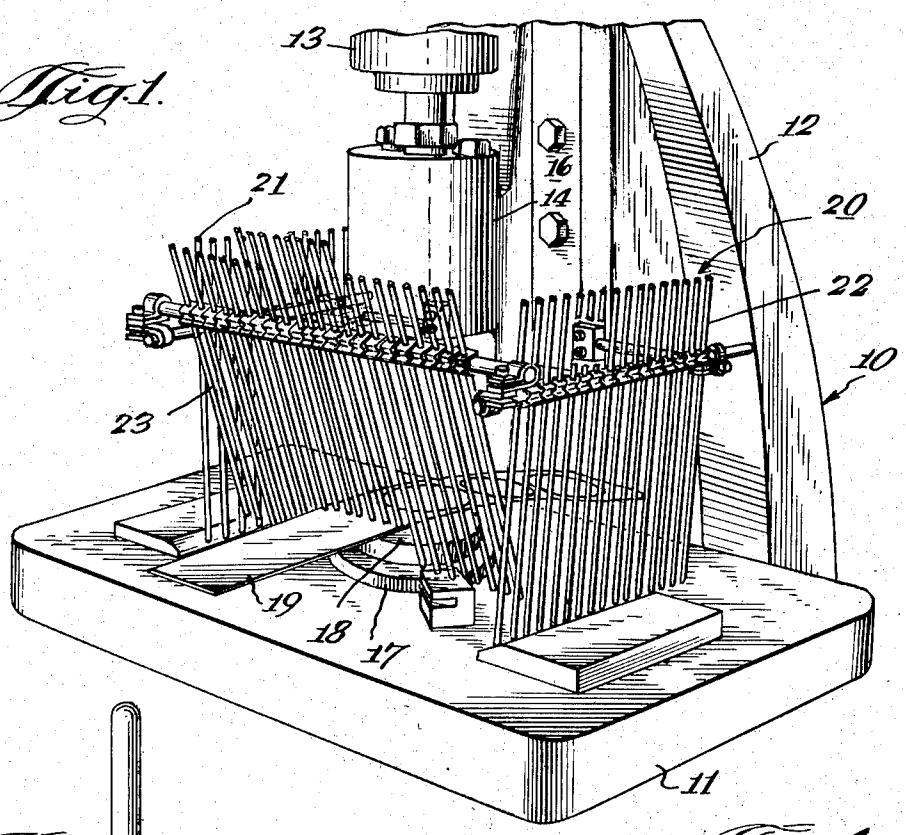


Fig. 2.

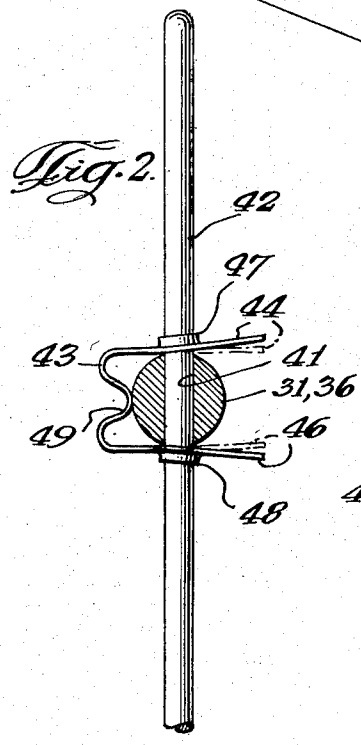


Fig. 3.

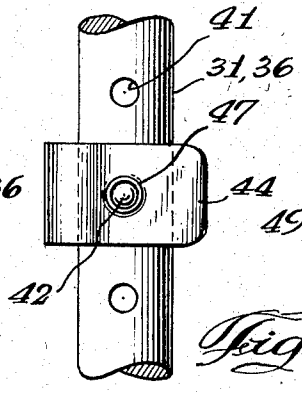
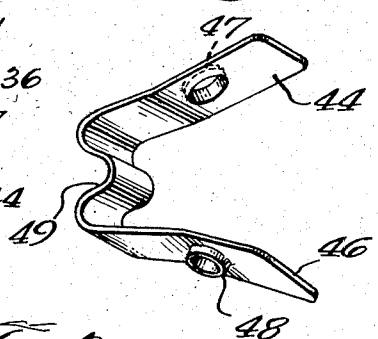


Fig. 4.



Inventor

David W. Madden

By Foley & Lindberg

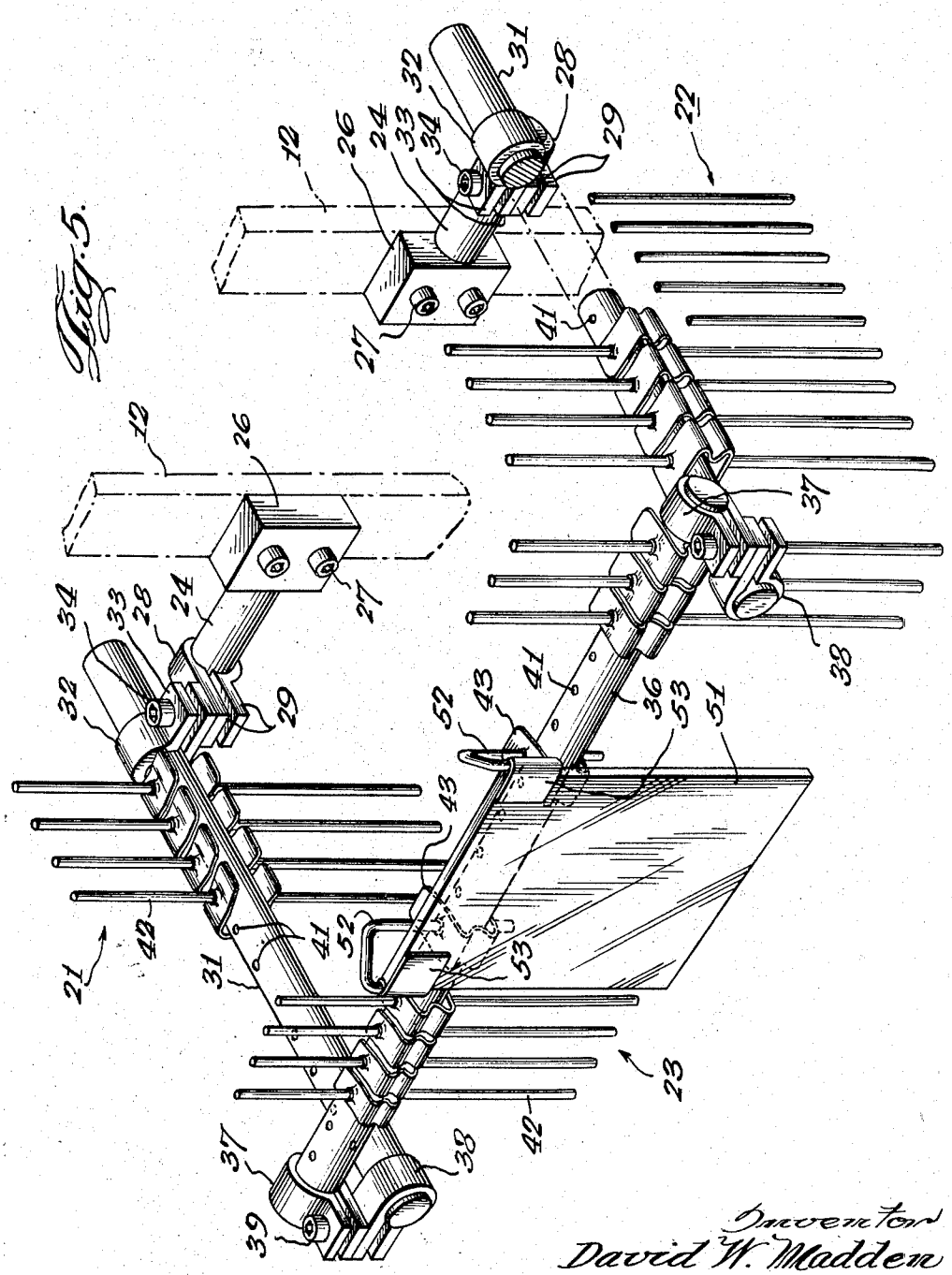
Attorneys

Jan. 13, 1959 D. W. MADDEN 2,868,569

GUARD FOR PUNCH PRESS OR THE LIKE

Filed June 29, 1955 2 Sheets-Sheet 2

Fig. 5.



Inventor
David W. Madden

By Foley & Lindberg
Attorneys

United States Patent Office 2,868,569 Patented Jan. 13, 1959

2,868,569

GUARD FOR PUNCH PRESS OR THE LIKE

David W. Madden, Oriole Park, Ill.

Application June 29, 1955, Serial No. 518,876

1 Claim. (Cl. 287—54.1)

This invention relates generally to a safety guard for a punch press or the like, and more particularly to a guard which may readily be adjusted according to the direction of feed of material to the press.

One of the principal objects of the invention is to provide an improved guard for a punch press or the like, said guard being characterized by screens formed of rod-like elements spaced throughout the length of a support rail, and arranged to be readily adjusted in position with respect to such support rail according to the direction of feed movement of stock to the press.

Other objects and important features of the invention will be apparent from a study of the specification following taken with the drawings which together show a preferred embodiment of the invention and what is now considered to be the best mode of practicing the principles thereof. Other embodiments may be suggested to those having the benefit of the teachings herein, and it is therefore intended that the scope of the invention not be limited by the precise embodiment herein shown, such other embodiments being intended to be reserved especially as they fall within the scope of the subjoined claim.

In the drawings:

Fig. 1 is a perspective view of a portion of a punch press having incorporated therewith an improved safety guard according to the present invention;

Fig. 2 is a side elevation view of one of the elements making up a screen for the guard shown in Fig. 1, and showing its mode of attachment to a support rail;

Fig. 3 is a plan view thereof;

Fig. 4 is a perspective view of a locking clip for the element shown in Fig. 2; and

Fig. 5 is a perspective view of another embodiment of the invention showing a viewing shield substituted for certain of the elements seen in Fig. 2, whereby the action of the punch and die may be readily viewed.

Referring now to Fig. 1 of the drawings, there is shown a punch press indicated generally by the reference numeral **10** and having a bed **11** mounted upon legs, not shown. The press **10** includes a frame **12** extending upward from the bed **11** and providing a support for a ram **13** arranged to move in a guide **14** which may be adjusted in its position by movement on spaced rails **16** upon which it is mounted, and which may be adjusted with respect to the frame **12**.

The ram **13** has mounted at the lower end thereof a punch, not shown, which cooperates with a die holder **17** and a die **18** to operate upon a strip of punching stock **19**. The precise form of the press **10** forms no part of the present invention and is merely by way of environment to explain the improved guard according to the present invention.

The punch of the ram **13** and the die **18** are arranged to be wholly enclosed within a safety guard according to the present invention and referred to generally by the reference numeral **20**. Such a guard includes a pair of screens **21** and **22** mounted on each side of the ram guide **14** and spaced from each other in substantially

parallel relationship. A front screen **23** is mounted on and between the spaced screens **21** and **22** to form a multi-sided enclosure providing a guard for the punch and die.

All of the aforesaid screens are mounted on a bracket arm **24** extending from a support block **26** held to the frame **12** by socket head screws **27**. The extreme ends of the bracket arms are provided with an eye clamp **28** having a pair of clamping limbs **29, 29**. A pair of support rails **31** are held in a similar eye clamp **32** having clamping limbs **33**, the rails **31** being held in position relative to the bracket arms **24** by means of a clamping screw **34**.

The rails **31, 31** extend in the direction shown in Figs. 1 and 5 in spaced relationship on opposite sides of the ram **14** and the die **18** and afford a support for a rail **36** of the front screen **23**. Rail **36** is provided at each end with an eye clamp **37** cooperating with a similar eye clamp **38, 38** mounted on the forward end of the support rails **31, 31**, the two clamps **37** and **38** clamping their respective rails **31** and **36** by means of a clamping screw **39** similar to the clamping screw **34**.

Each of the rails **31, 31** and **36** is provided with equally spaced diametrically extending bores **41, 41**. As seen in Figs. 2, 3 and 4 a rod-like element **42** passes through each bore **41**, and as seen particularly in Figs. 1 and 5 such closely spaced elements **42** form the screens **21, 22** and **23**.

Each of the rod-like elements **42** has a sliding fit within the bore **41** and each is maintained in proper position by means of a spring clip **43** having spaced resilient limbs **44** and **46**. Limb **44** has a flanged opening **47** therein and limb **46** has a similar flanged opening **48** therein. The spring clip **43** is essentially W-shaped, and has a central bight **49** but closely spaced from the rail **31** or **36** as the case may be. The two flanking limbs portions **44** and **46** provide a means for locking the rod-like element **42** in position.

As seen in Fig. 2 the bore **41** and the flanged openings **47** and **48** can be brought into register by moving the two limbs **44** and **46** together, at such time relieving any friction against the rod-like element **42** at the openings **47, 48** and the bore **41**. Upon release of the two elements to the full line position shown, the element **42** will be held frictionally by the clip **43**, and arm **44** thereof will be supported together with element **42** on the rail **31** or **36**.

As seen in Fig. 5, the rail **36** may instead form a means of support for a viewing window **51** made of suitable non-shattering material such as Lucite. The window **51** is connected to the rail **36** by spring clip members **43**, and these spring clip members cooperate with a generally inverted U-shaped hanger **52** connected to a hinge member **53**, each disposed at the upper end of the window **51** as seen in Fig. 5.

Referring back to Fig. 1, the rod-like elements **42** of the screen **23** may be lifted in the manner shown to accommodate the passage thereunder of the strip of stock **19**. Alternately, the window **51** may be placed in position instead of certain of the elements **42** as seen in Fig. 5 and such a window may be raised and lowered as desired to permit the passage of the blank stock **19**.

Alternately, the elements of the screens **21** and **22** may be lifted to accommodate the passage of blank stock fed from side to side of the press **10**.

Each of the screens shown in Figs. 1 and 5 may be readily adjusted according to the dimensions of the die and according to the direction of feed movement of blank stock **19** through the press **10**. Each of the elements **42** may be raised or lowered as desired and as described above. Each of the screens may be tilted inward or outward according to the dimensions of the punch or

die, and as seen in Fig. 1 the forward screen **23** is tilted towards the die **18**.

While the invention has been described in terms of a preferred embodiment thereof its scope is intended to be limited only by the claim here appended.

I claim as my invention:

In a connecting joint for a pair of intersecting rod-like elements, one of said elements having a substantially diametral bore therein for receiving the other element therein in intersecting relationship, means for holding the said other element against sliding in said bore yet enabling same readily to be adjusted in position endwise of itself comprising a locking clip formed of resilient material, said resilient clip having a central bight contacting the said one element, the material of said bight being reversed on itself at said bight to provide a pair of spaced limbs straddling the said one element and in contact therewith, an aperture in each limb through which the said other element extends, said limbs being arranged to be pressed together to release the said other element for sliding in said bore and said apertures to adjust the position of said other element with respect to said one element, and being arranged to be released whereby said limbs engage said other element for maintaining the position thereof fixed with respect to said rail.

References Cited in the file of this patent

UNITED STATES PATENTS

737,039	Stone	Aug. 25, 1903
1,261,471	Bach	Apr. 2, 1918
2,407,527	Anstedt	Sept. 10, 1946
2,503,144	Willers	Apr. 4, 1950

FOREIGN PATENTS

826,525	France	Jan. 4, 1938