

ANGLE GUARD.

1,305,328.

The figure contains four separate technical drawings of mechanical components, each labeled with a figure number:

- Fig. 1:** A large, complex mechanical assembly shown in a perspective view. It features a base plate (1) with various mounting points. A vertical rod (2) passes through a series of components including a nut (25), a washer (26), and a bracket (27). A curved arm (20) is attached to the side, with a pivot point (21) and a spring (22). A large, angled plate (5) is mounted on the left side, secured by a bolt (6). A dashed line indicates a hidden internal component (24).
- Fig. 2:** A side view of a mechanical component, possibly a bracket or a part of the assembly. It shows a horizontal rod (3) passing through a series of components including a nut (7), a washer (8), and a bracket (9). A vertical rod (2) is also shown, with a nut (16) and a washer (17). A curved arm (20) is attached to the side, with a pivot point (21) and a spring (22). A large, angled plate (5) is mounted on the left side, secured by a bolt (6). A dashed line indicates a hidden internal component (24).
- Fig. 3:** A side view of a mechanical component, similar to Fig. 2. It shows a horizontal rod (3) passing through a series of components including a nut (7), a washer (8), and a bracket (9). A vertical rod (2) is also shown, with a nut (16) and a washer (17). A curved arm (20) is attached to the side, with a pivot point (21) and a spring (22). A large, angled plate (5) is mounted on the left side, secured by a bolt (6). A dashed line indicates a hidden internal component (24).
- Fig. 4:** A side view of a mechanical component, similar to Fig. 2. It shows a horizontal rod (3) passing through a series of components including a nut (7), a washer (8), and a bracket (9). A vertical rod (2) is also shown, with a nut (16) and a washer (17). A curved arm (20) is attached to the side, with a pivot point (21) and a spring (22). A large, angled plate (5) is mounted on the left side, secured by a bolt (6). A dashed line indicates a hidden internal component (24).

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ANGLE-GUARD.

1,305,328.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD LESTER WILCOX, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Angle-Guards, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a new and improved angle guard and is especially designed for use with a device having a runway for blanks or similar articles, one portion of which is at an angle to the remainder, such devices being common in chute mechanism for conveying blanks or articles from a hopper or other source of supply to operating tools.

It is the object of my invention, among other things, to provide a simple and economical device that will so control the movement of the blank while passing through the angle of said runway as to insure its maintaining a proper and predetermined position.

To these, and other ends, my invention consists in the angle guard, having certain details of construction and combinations of parts, as will be hereinafter described and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals of reference designate like parts in the several figures;

Figure 1 is a side elevation of my improved device and the parts adjacent thereto;

Fig. 2 is a plan view thereof;

Fig. 3 is an end view looking toward the left of Fig. 1; and

Fig. 4 is a fragmentary plan view of the angle portion of the runway.

For purposes of illustration only, I have shown my device as attached to the chute mechanism of a thread rolling machine, but it may be used with other mechanisms and for other purposes, as desired.

In the drawings, the reference numeral 1 designates the movable threading die indicated by broken lines, and 2 the stationary die, 3—3 the side plates of the chute mechanism, which are arranged relatively so as to leave a space 4 therebetween of substantially the width of the diameter of the blank that passes therethrough. Above these side

plates, is the cover member 5, with a space 6 therebetween of substantially the same width as the thickness of the head of the blank. Adjustment of this cover member toward and away from the side plates provides means for the accommodation of blanks with heads of varying thicknesses.

Secured to one of the side plates is a bracket 7, to the outer end of which is secured an adjustable block 8, having fixed thereon a supporting plate 9, the lower lip 10 of which is opposite the supporting plate 11 attached to the underside of the bracket 7. The block 8 is adjustable on the bracket 7, and thereby permits movement of the plate 9 toward and away from the supporting plate 11 to develop a space 12 that will substantially correspond in width with the space 4.

The side plates 3—3 and supporting plates 10 and 11, with the space therebetween, constitutes a runway for blanks from a hopper (not shown), or other source of supply, to the threading dies or operating tools if applied to a different type of mechanism.

The supporting plate 9 has a tongue and groove 14 connection with the block 8, so that with the screw 15, means are provided for a relative adjustment of said plate on said block.

The numeral 16 designates a pressure foot having a shank 17, either integral or separate, as may be desired, on which are threaded the jam nuts 18, and surrounding the same between the block 8 and pressure foot 16 is a coil spring 19, the tension of this latter spring being exerted so as to move the said pressure foot toward the supporting plate 10.

In operation, the blanks, designated herein by the numeral 20, slide down from the hopper, or other source of supply, with the shanks lying in the space 4 between the side plates 3, with the heads resting upon the tops thereof, and held against upward movement by the cover 5. As they reach the bottom of the side plates the head rests upon the supporting plate 10 and at this point a pusher mechanism (not shown) contacts with the blank and moves it through the space 12 with the head resting upon the supporting plates 10 and 11 until engaged by the movable die, after which its movement is derived from the threading dies, as is usual.

The pressure foot 16 holds the blank against upward movement until it engages the fixed die and until the blank has traveled over the fixed die a sufficient distance to form a thread thereon that will serve as a guide for the blank during its further movement with said dies.

In some classes of work experience has demonstrated that at the point where the runway changes direction, that is, at the junction point of the spaces 4 and 12, the blank is liable to tip over toward the moving die and thus is not readily pushed along over to the threading dies, and as a result thereof is incorrectly started thereon. And again, it is desirable that the blank be held down upon the tops of the side plates 3 and the supporting plates 10 and 11 while making the turn in the runway, and thus prevent any tendency to move upwardly prior to the engagement of the pressure foot 16 therewith.

The mechanism to accomplish this purpose consists of a plate 21, which is pivotally secured to the cover 5 by the screw 22, or other similar means, having a pressure plate 23 at one end, which projects over the space 4 and the supporting plate 10, terminating adjacent to the pressure plate 16, thus forming a continuous tension member for the bolt head during its travel from the lower end of the side plate 3 to the pressure plate 16. The opposite end of the plate 21 is provided with a tension plate 24, through which projects a stud 25 that is threaded into the cover 5 and upon the outer end of which is a knurled nut 26, a spring 27 projecting part way into the cover 5 and engaging the underside of the tension plate 24, exerts its tension so as to hold said tension plate against said nut 26 and the pressure plate 23 downwardly toward the top of the side plates 3. It is obvious that the relative position of the pressure plate above the top of the side plates 3 is determined by the position of the nut 26 upon the stud 25 and the extent of the pressure upon the bolt thereunder is determined by the spring 27.

In practice, as the bolts 20 slide down the chute toward the lower end of the side plates 3, the heads thereof pass under the pressure plate 23 and are held downwardly against any lateral, upward, or tilting movement by reason thereof until the blanks are engaged by the pressure plate 16, and thus avoid the objections heretofore existing in the prior art and accomplish desirable results not therein possible.

There are minor changes and alterations that can be made within my invention, aside from those herein suggested, and I would therefore have it understood, that I do not limit myself to the exact construction herein

shown and described, but claim all that falls fairly within the spirit and scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In combination with an angular runway of the type set forth, a pair of means having space therebetween and associated with the respective straight sides of the runway for preventing upward movement of the blanks during movement of the latter in straight lines, and means to prevent tilting movement of the blanks arranged in said space between said pair of means and adjacent the angle of the runway, to guide the blank in its movement through said angle.

2. In combination with a runway having a pair of substantially straight sides connected by an angular part, spaced means associated with the respective sides to prevent tilting movement of the blanks, a plate adjacent to one of the substantially straight sides of the runway and having an end thereof projecting outwardly therefrom and extending over the top of the angular part of the runway, to engage the blanks so as to prevent the latter from having upward or tilting movement, means to adjust the vertical position of said outward projecting end of the plate and a member acting on the plate to normally and resiliently hold the latter in its adjusted position.

3. In combination with a runway having a pair of substantially straight sides connected by an angular part, spaced means associated with the respective straight sides to prevent tilting movement of the blanks, a spring tensioned plate adjacent to one of the straight sides of the runway and having a part projecting laterally therefrom and extending over the runway angle, and means to adjust the plate to vary the vertical position of said part thereof with respect to the runway angle.

4. In combination with a runway having an angular part the sides of which immediately adjacent to the angle of said part lie in the same plane, means associated with the angle of said part to engage the blanks to prevent same from tilting during passage through the angle of said part.

5. In combination with a runway having an angular part, guiding means having a lateral projection formed to overlie said angular part of the runway, and means to adjustably mount said guiding means on the runway at a point to one side of the angular part.

In testimony whereof I have hereunto affixed my signature.

RICHARD LESTER WILCOX.