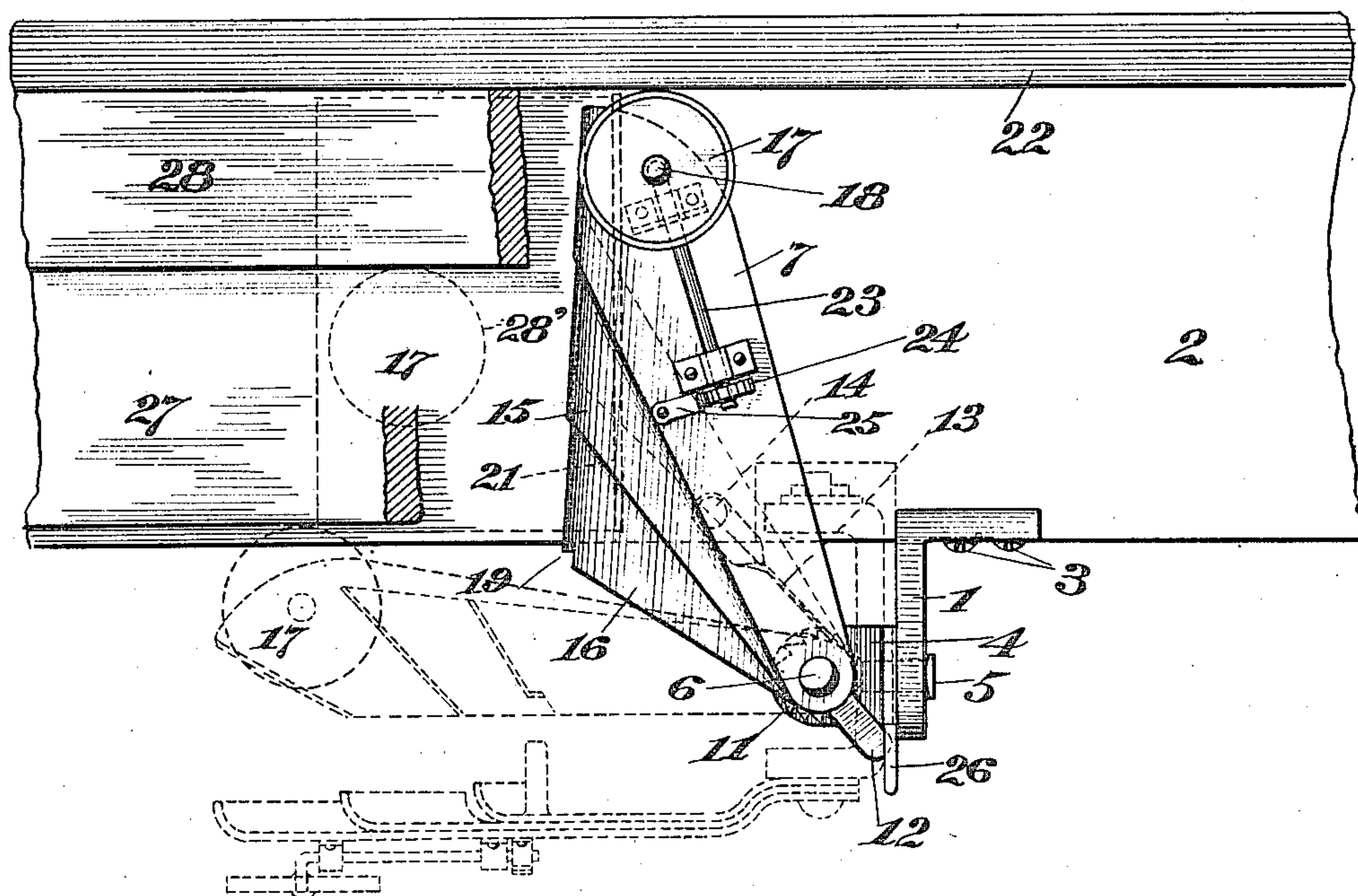
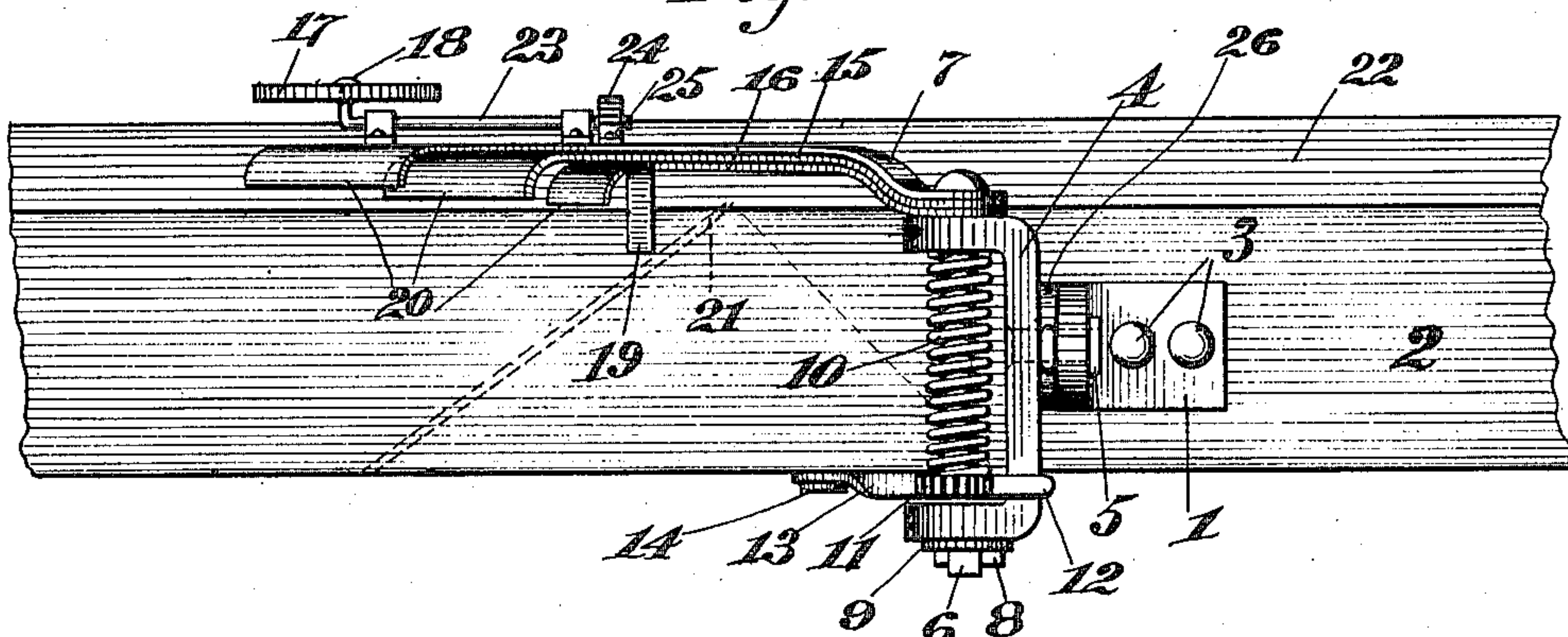


998,873.

Patented July 25, 1911.

*Fig. 1*



*Fig. 2*

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# UNITED STATES PATENT OFFICE.

ROMAIN COUTURE, OF SOMERSWORTH, NEW HAMPSHIRE.

## PLANE-KNIFE GUARD.

998,873.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed January 22, 1910. Serial No. 539,614.

*To all whom it may concern:*

Be it known that I, ROMAIN COUTURE, a subject of the King of Great Britain, residing at Somersworth, in the county of Strafford, in the State of New Hampshire, United States of America, have invented certain new and useful Improvements in Plane-Knife Guards; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to wood working machines and more particularly to planer knife guards for such machines.

Broadly speaking, it comprises an angle plate or like support adapted to be secured to the bed of a wood working machine adjacent the planer or other operating part, a bracket pivotally connected thereto, a spring actuated post journaled in the bracket, a plurality of guard plates adapted to open fan-wise above the operating part of the machine, and a gage roller journaled on one of said guard plates and adapted to engage the surface of the work piece to regulate the extent of the spreading of the guard.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a side elevation of the device in operative position; and Fig. 2 is a plan view of the same.

The main objects of the invention are to provide a simply constructed, economical, and durable guard which may be readily and quickly applied to any of the usual existing forms of the machines without making appreciable alterations.

A further object is to provide a guard which will be automatic and positive in its action and one which will operate equally well regardless of the character and form of the contacting surface of the work piece.

In order to somewhat more clearly describe the invention, the word front will be used to designate that part of the machine at the right of the drawings—the part from which the work piece moves—and the word

rear will be used to designate that part of the machine at the left of the drawings—the part toward which the work piece moves.

Referring to the drawings in detail, 1 indicates an angle plate, lock, or any other suitable support adapted to be solidly secured to a machine base 2 by means of screws 3 or like well known devices. To the angle plate 1 is rotatably or pivotally connected a bracket 4, the connection being made by means of a headed rivet 5 or the like. Revolvably mounted in the bracket 4 is a headed post 6 which is secured in operative position by means of a washer 9 and a cotter pin 8. On the upper projecting end of this post is rigidly secured one end of a guard plate 7 of tapered form, widening toward its opposite or free end, the rear edge of which is provided with a downwardly projecting flange 20, for a purpose to be later disclosed. Other, and somewhat smaller, similar plates 15 and 16 are loosely journaled on the projecting end of the post 6. Each plate is slightly overlapped by the plate immediately preceding it and the flange of each preceding plate engages the outer end of the next one, as such preceding plate moves to operative position. Consequently, as the first plate continues to move to operative position, it will engage the next plate and draw it to operative position. The same is true, of course, of each successive plate. Thus, the guard will be spread fan-wise above the planer knife or other operating tool.

In order to effect and vary the tension of the operating spring 10, one end is made fast to the post 6 while the other is made fast to a ratchet disk 11 journaled on the lower end of the post. The ratchet disk 11 is provided with a handle or arm 12 by which it may be turned to vary the tension of the spring. A pawl 13 is pivotally mounted on a stud 14 projecting from the bed 2 and is adapted to engage the teeth of the ratchet disk and prevent its reverse rotation.

In the operation of the device, the guard should be only sufficiently opened or spread, of course, to protect the exposed tool edge—that part which is not operating upon the piece of work. Accordingly, a gage roller 17 is provided. This roller is journaled on the upright arm 18 of a rod 23 which is journaled in loops or plates secured to the



top of the guard plate 7. The free end of this rod is provided with a ratchet disk or wheel 24 adapted to be engaged and held by a pawl 25. In this way, the roller may be tilted to any desired angle so that its edge will engage the surface of the work piece adjacent the outer end of the plate 7. The roller, of course, projects a very slight distance beyond the edge of the plate 7 and a little above it. Thus, when a piece of wood having a considerable bevel is being operated upon, the projecting edge of the roller will engage the adjacent surface at the same time that the adjacent edge of the lower surface approaches close to the end of the plate 7. However, when it engages the perpendicular face of a work piece, it will not leave any considerable space between the end of plate 7 and the adjacent surface of the work piece; and even the small space so left will be practically covered by the roller itself.

It is necessary, of course, to limit the swing of the plate 7 under the action of its spring 10. Otherwise, the plates would be swung beyond the edge of the operating tool and the device would become useless, as a guard. To this end, the rear edge of the plate 16 is provided with a depending finger or prong 19 which engages the edge of the bed 2 and so prevents further movement of the guard.

In order to hold the guard in its operative position above the bed of the machine, it is necessary, of course, to provide some means for preventing rotation of the bracket 4 on its pivot 5. This is accomplished by beveling the inner face of the supporting arm or branch of the angle plate 1 and mounting on the pivot 5 an oppositely beveled or wedge disk 26 provided with a lever handle. By turning the wedge disk in one direction it will force the bracket 4 longitudinally of its pivot 5, drawing the pivot edge tightly into frictional engagement with the angle plate 1, thereby binding it and preventing rotation of the bracket. Reverse movement of the lever arm, of course, unwinds the head of pivot 5 and the arm of the angle plate 1 and permits the bracket to be swung to inoperative position, as shown by dotted lines in Fig. 2.

When there is no work piece on the machine bed and the guard is in operative position, the roller 17 will engage guide rail 22, and finger 19 will engage the edge of the machine bed, and the guard will be extended and spread fan-wise above the tool edge, completely covering it. When a board or like work piece 28, of a certain width, is being passed through the machine, its edge will be engaged by the roller 17 and the guard will be moved rearwardly to cover only the inoperative portion of the tool edge, the roller assuming the position indicated in

dotted lines at 28<sup>1</sup>. Should a piece of greater width, as 27, be passed through the machine, the guard will be forced still farther rearwardly, as indicated in dotted lines in Fig. 2.

It is thought that the operation and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same and it is meant to include all such within this application wherein only a preferred form has been disclosed.

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

1. The combination with a machine having a bed and a cutter projecting above the same, of a base detachably secured to said bed, a bracket pivotally mounted on said base, a post mounted in said bracket, a plurality of blades pivotally supported on said post and adapted to be opened and closed fan-wise above said cutter, and means for securing said bracket in operative position.

2. The combination with a machine having a bed and a cutter projecting above the same, of a base detachably secured to said bed, a plurality of blades pivotally secured to said base on a common pivot and adapted to be opened and closed fan-wise above said cutter, and means for holding said blades normally open or operative.

3. The combination with a machine having a bed and a cutter projecting above the same, of a base detachably secured to said bed, a plurality of blades pivotally supported from said base on a common pivot and adapted to be opened or closed fan-wise above said cutter, and means for limiting the opening movement of the blades.

4. The combination with a machine having a bed and a cutter projecting above the same, of a base detachably secured to said bed, a plurality of blades pivotally supported from said base on a common pivot and adapted to be opened and closed fan-wise above said cutter, means for forcing said blades, normally, to open or operative position, and means for limiting the opening movement of the blades.

5. The combination with a machine having a bed and a cutter projecting above the same, of a base detachably secured to said bed and a plurality of blades pivotally supported from said base on a common pivot and adapted to be opened and closed fan-wise above said cutter.

6. The combination with a machine having a bed and a cutter projecting above the same, of a base detachably secured to said bed, a plurality of blades pivotally supported from said base on a common pivot and adapted to be opened and closed fan wise

