C. ALWINE.

GUARD FOR WOOD SHAPING MACHINES.

APPLICATION FILED JUNE 29, 1916.

1,217,550. Patented Feb. 27, 1917.

Fig. 1.

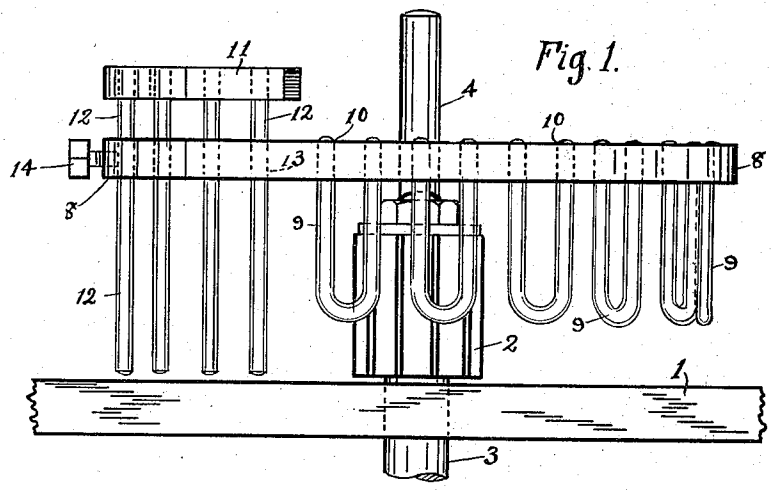


Fig. 2.

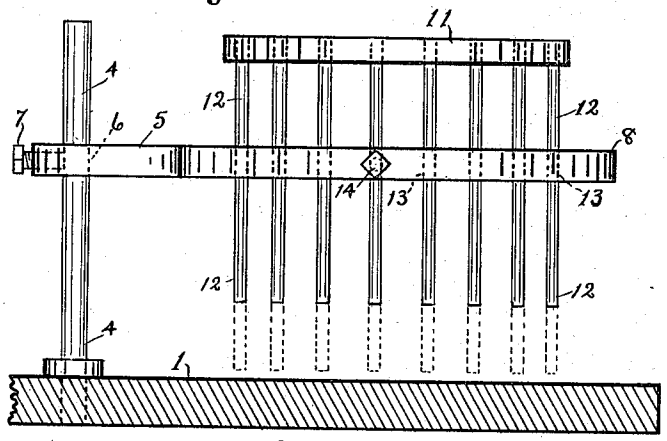
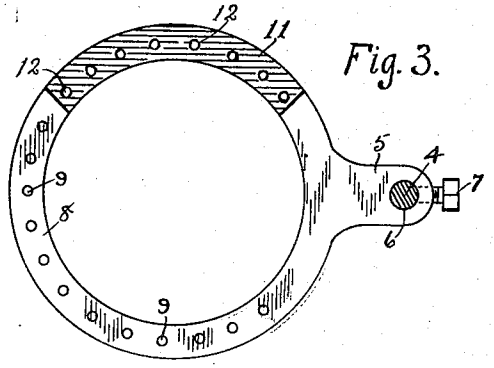


Fig. 3.



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UNITED STATES PATENT OFFICE.

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GUARD FOR WOOD-SHAPING MACHINES.

1,217,550. Specification of Letters Patent. Patented Feb. 27, 1917.

Application filed June 29, 1916. Serial No. 106,559.

To all whom it may concern:

Be it known that I, CHARLES ALWINE, a citizen of the United States, residing at Elkhart, county of Elkhart, and State of Indiana, have invented new and useful Improvements in Guards for Wood-Shaping Machines, of which the following is a specification.

This invention relates to guards for cutter heads used in machines for shaping wood and for the production of wood molding and the like.

An object of my invention is the production of a guard of the kind described which is provided with means for limiting the use of the cutter head from the front and at one side thereof. Another object is the production of a guard having extensible fingers on one side thereof and adapted to be extended downward to the table surface to prevent lateral hurling of splinters, slivers and pieces of wood. Still another object is the production of a guard provided with fixed fingers which are of simple structure, but cheap, effective and very light.

The preferred embodiment of the invention is disclosed in the accompanying drawings, wherein Figure 1 is a front elevation showing the guard in position around a cutter head and the extensible portion lowered to the table surface; Fig. 2 is a side elevation of the guard, without the fixed fingers, showing the extensible guard fingers raised above the table surface; and Fig. 3 is a plan view of a guard ring somewhat reduced in size, and the extensible guard finger carrier. On the drawings, similar numerals of reference refer to similar members and parts of members throughout the several views.

Referring to the drawings in detail, the numeral 1 indicates the table of a wood shaping machine above which projects the cutter head 2, of any suitable or usual structure, attached to and driven by the spindle or shaft 3. The numeral 4 indicates a standard, or guard carrier, having its base rigidly fastened to the table 1 in any appropriate manner, suitably spaced from the cutter head 2 and formed either of round or angular metal stock. The numeral 5 indicates the guard body which is suitably apertured at 6 to receive the standard 4 in slidable engagement for vertical adjustment thereof. The numeral 7 indicates a set screw mounted on member 5 for rigidly engaging the standard 4 to confine the guard body 5 in any desired position on the standard 4.

The numeral 8 indicates an annular guard ring, preferably integral with member 5, depending from which are a plurality of fixed guard fingers 9 of elongated U formation and rigidly secured within apertures 10 formed in the guard ring 8. The fingers 9 are preferably formed of heavy metal wire stock to insure cheapness and bent U shape to gain the maximum strength consistent with lightness, and suitably spaced to permit the proper view of the cutter head 2. The series of fixed fingers 9 terminates on the guard ring 8 adjacent the first extensible finger 12, hereinafter described, to form equal spacing therewith and to complete a semicircular row of guard fingers around the head 2.

The numeral 11 indicates a guard finger carrier of segmental formation and positioned above one side of the guard ring 8 and to which are rigidly secured a plurality of depending guard fingers 12.

The fingers 12 are suitably spaced and each one is slidably arranged in an aperture 13 formed in the guard ring 8 and substantially longer than a fixed finger 9. The numeral 14 indicates a set screw carried by the ring member 8 and adapted to engage a finger 12 to confine the cage of extensible fingers 12 in any desired position in vertical adjustment.

In practice the fingers 9 are spaced from the surface of the table 1 to permit wood stock to be passed beneath same, and the ring 8 is vertically adjusted on the standard 4 to conform with the wood stock thickness. Thereupon, the fingers 12, as a set, are projected downward to the table face and rigidly fastened in that position by the set screw 14. In that position it is then impossible to use the cutter head from one entire side thereof, and the operator is limited to the cutter head use from the front and the opposite side thereof, the side circumscribed by the fixed fingers 9. And thereby, any splinters of wood torn from the stock by the cutter, are projected against the fingers 12 and either deflected away from the operator's body or completely blocked.

When a guard of the ordinary type is used it frequently happens that the operator inadvertently applies the wood stock to the wrong side of the cutter head, thereby causing the piece of wood to be wrenched

from his hands and thrown violently against his body and resulting in serious injury to him. By the use of the extensible, or movable and adjustable, fingers 12 this kind of an accident is prevented.

I claim:

1. In a device of the character described, the combination of a standard; a ring mounted upon the standard; and a series of spaced guard fingers depending from the ring, a portion of said fingers being adjustably supported by said ring.

2. In a device of the character described, the combination of a standard; a ring mounted upon the standard; a plurality of fixed guard fingers depending from said ring; and a guard member depending from said ring on one side thereof and vertically adjustable thereon.

3. In a device of the character described, the combination of a standard; a ring mounted upon the standard; and a series of spaced guard fingers depending from the ring, a portion of said fingers being adjustably supported by said ring and the rest rigidly carried thereby.

4. In a device of the character described, the combination of a standard; a ring mounted upon the standard; a plurality of fixed guard fingers of U formation depending from said ring; and a guard member depending from said ring on one side thereof and vertically adjustable thereon.

5. In a device of the character described, the combination with an adjustably supported ring, said ring being provided with an arcuate series of apertures, of a guard finger carrier poised above said ring; a plurality of arcuately arranged guard fingers depending from said carrier and slidably arranged within said ring apertures; and means for positively confining said fingers against movement in said ring apertures.

In testimony whereof I have hereunto affixed my signature at Elkhart, Indiana, this 24th day of June, 1916.

CHARLES ALWINE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."