

Dec. 30, 1952

W. A. ESCHENBURG

2,623,555

SAW GUARD

Filed July 14, 1948

2 SHEETS—SHEET 1

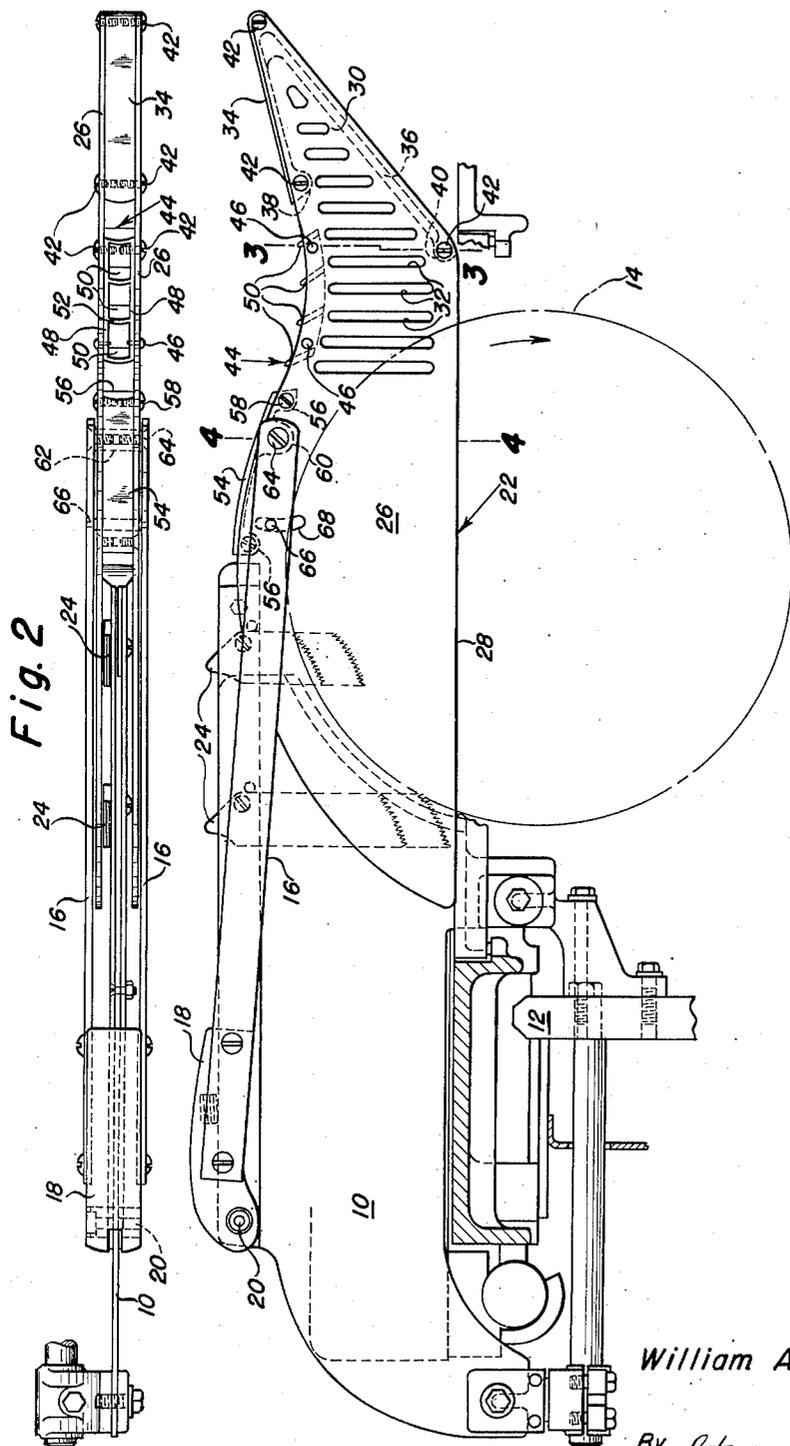


Fig. 1

Fig. 2

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2 SHEETS—SHEET 2

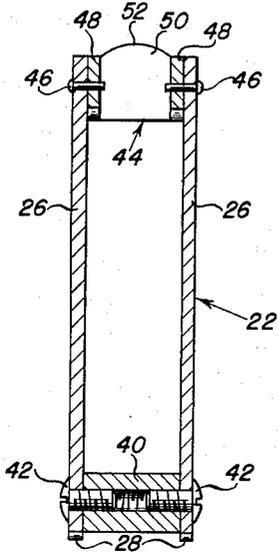


Fig. 3

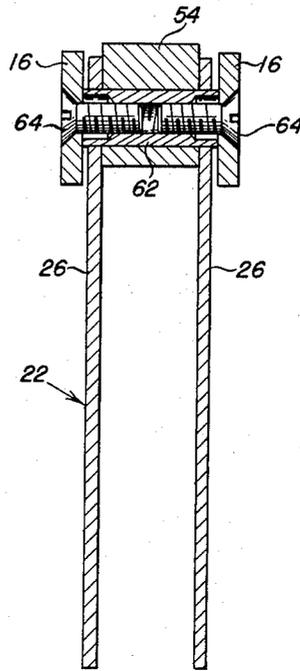


Fig. 4

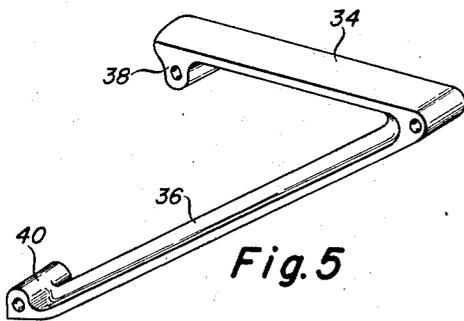


Fig. 5

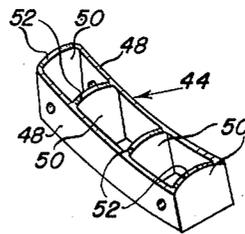


Fig. 6

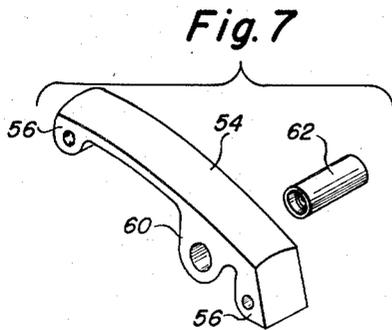


Fig. 7

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2,623,555

SAW GUARD

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Application July 14, 1948, Serial No. 38,612

5 Claims. (Cl. 143—159)

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This invention relates to saw guards and more particularly to a safety guard for circular saws and similar tools.

It is the general object and purpose of the present invention to provide certain improvements in a basket-type of saw guard mounted and arranged for bodily swinging movement with respect to the work table to and from its operative position relative to the saw blade, such as that shown and described in the patent of Herbert E. Tautz 2,352,235 issued June 27, 1944.

In the patented construction, the basket guard is supported for swinging movement upon the rear end of a rigidly fixed splitter blade which enters the saw kerf in the work. This basket guard is in the form of a one piece casting which is comparatively heavy and owing to its shape or form is the major item in production costs. It is one of the objects of my present improvements to provide a basket type guard, in which the side walls or panels thereof are in the form of simple sheet metal stampings together with means interposed between and rigidly connected with said panels to maintain the same in spaced parallel relation throughout their length, whereby production costs of the guard are materially reduced.

It is another important object of the invention to provide a rigid spacing unit between the side walls of the guard at their upper edges, located above the cutting point of the saw blade, which is provided with spaced dust deflecting ribs or vanes which will not interfere with a clear view of the cutting operation by the user while preventing the upward travel of sawdust particles above the guard.

It is also an additional object of the invention to provide a nose casting rigidly secured between the side walls or panels of the guard at their forward ends and closing the front end of the guard to avoid hazard to the operator.

A further object of the invention is to provide an additional spacer between the side walls of the guard rearwardly of the deflector unit in the form of a simple casting having means for pivotally mounting the basket guard upon the forward end of swingable supporting bars which are hingedly mounted at their rear ends upon a splitter blade or other fixed member.

With the above and other objects in view, the invention comprises the improved saw guard and the construction and relative arrangement of its several parts as will hereinafter be more fully described, illustrated in the accompanying drawings and subsequently incorporated in the subjoined claims.

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In the drawings disclosing one practical embodiment of the invention, and wherein similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a side elevation showing a saw guard assembly embodying the present invention, which is generally similar to that disclosed in the above mentioned patent;

Figure 2 is a top plan view thereof;

Figure 3 is a vertical sectional view on an enlarged scale taken substantially on line 3—3 of Figure 1;

Figure 4 is a similar sectional view taken substantially on the line 4—4 of Figure 1;

Figure 5 is a detail perspective view of the cast metal nose piece of the basket guard.

Figure 6 is a similar view of the dust deflecting unit; and

Figure 7 is a detail perspective view of the rear spacer member for the side walls of the guard.

For purposes of convenient illustration, in the present instance I have shown a splitter blade 10 rigidly mounted upon the rear trunnion 12 of a suitable supporting structure for the saw blade 14, together with spaced parallel bars 16 secured at their rear ends to a spacing member 18 which is hingedly mounted for swinging movement upon the rear end of the splitter blade 10 as shown at 20. Between the forward ends of the bars 16 the basket type guard 22 for the saw blade is pivotally supported intermediate of its ends. Spaced pairs of depending kick-back preventing fingers 24 are connected at their upper ends to the splitter blade 10 to hold the work upon the surface of the work table during operation of the saw. Since this general assembly is substantially identical with that shown in Patent 2,352,235, further detail description thereof is unnecessary for the purposes of the present explanation.

The basket guard 22 comprises similar side walls or panels 26 each consisting of a die-stamped sheet metal plate of requisite thickness having a straight lower edge 28 for contact with the surface of the work and work table and a forward end portion 30 the upper and lower edge portions of which are inclined upwardly therefrom. The front end portion of each side plate or panel is disposed with its respective upper and lower edge portions in planar alignment with the corresponding edge portions of the other and is provided with a plurality of spaced vertically extending slots 32. The end portions 30 of the plates 26 are rigidly connected by a nose piece insertable between said plates and having integrally joined acutely angled planar arms 34

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and 36 respectively. Each of said arms at its free end terminates in the transversely disposed boss, 38 and 40 respectively, having a threaded bore and a similar threaded bore is provided in the integrally joined ends of said arms. The short upper arm 34 of the nose piece extends rearwardly between the upper inclined edges of the end portions 30 of the side plates while the longer arm 36 extends downwardly and rearwardly in parallel relation with the lower inclined edges of the end portions 30 of said plates. This nose piece is rigidly secured in fixed position between the side plates by means of suitable screws 42 disposed through apertures in said plates and threaded into the bosses 38 and 40 and the integral connection between the front ends of the arms 34 and 36.

In rearwardly spaced relation from the arm 34 of the nose piece, a deflector unit 44 is rigidly secured between the upper edges of the side plates 26 by suitable pins or screws 46. This unit is in the form of a one-piece casting having parallel arcuately curved side walls 48 of substantially the same radius as the corresponding curved upper edge sections of the plates 26. These side walls 48 are integrally connected by a plurality of spaced dust deflecting vanes 50 which are obliquely inclined downwardly and forwardly between the upper and lower edges of the walls 48, as seen in Figure 1 of the drawings. Preferably, the upper edges of the vanes 50 extend above the upper edges of the side plates 26 in transversely convex arcs as indicated at 52.

This dust deflecting unit 44 also serves as additional means for maintaining the forward portions of the side plates 26 in rigidly spaced parallel relation, and is so located that when the guard is in its operative position, said deflecting unit will be disposed immediately above the point of cutting contact of the saw blade 14 with the work.

In rearwardly spaced relation from the deflector unit 44 a spacer 54 is disposed between the upper edge portions of the plates 26. This member comprises a metal casting having a longitudinal contour substantially conforming to that of the upper edges of the plates 26 and provided at its ends with terminal lugs 56, each of which has a transverse bore threaded at its opposite ends to receive the fastening screws 53 inserted through registering apertures provided in the plates 26. Adjacent its forward end, the member 54 is also formed with a transverse boss 60 having a smooth walled bore to receive a pivot sleeve 62 internally threaded at its opposite ends. This sleeve 62 is of sufficient length to extend through registering apertures in the side plates 26 and slightly beyond the outer side faces of said plates. Screws 64 inserted through openings in the front ends of the bars 16 are threaded into the opposite ends of the sleeve 62 to tightly bind said bars against the ends of the sleeve. Thus the basket guard is supported between the forward ends of the bars 16 for rocking movement relative thereto in a vertical plane, such rocking movement of the guard being limited by the transverse pin 66 fixed to the supporting bars 16 and extending through slots 68 in the side plates 26.

From the above it will be seen that the present invention provides a novel light weight saw guard of the basket type of inexpensive construction and which has the requisite rigidity and stability to remain in a fixed operative po-

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sition with respect to the work so that the spaced side plates 26 of the guard will not contact the saw blade extending above the table surface between said plates. Also the combined spacing and dust deflecting unit 44 provides a means for this purpose which permits the operator of the machine to have a clear view of the saw blade at its point of cutting contact with the work, since in the rotation of the saw blade, the saw dust particles collecting in the teeth thereof will be thrown against the forwardly and downwardly inclined rear faces of the deflecting vanes 50 instead of upwardly above the saw guard into the face of the observer. These deflected saw dust particles will be partially directed forwardly by the vanes 50 and into the downwardly and rearwardly inclined pocket formed by the nose piece between the front inclined ends of the plates 26; partially through the vertical slots 32 in said plates to the outer sides of the guard; and partially into the air stream of the saw blade by which the dust particles are carried downwardly below the table. The slots 32 afford visibility of the sides of the saw blade while preventing contact of the operator's fingers therewith and the downward and rearward inclination of the nose pocket assures a self clearing pocket preventing an undesired accumulation of saw dust in the nose of the guard.

In feeding the work to the saw blade, upon contact of the work with the forwardly inclined edges of the plates 26 and the arm 36 of the nose piece, the guard 22 and supporting bars 16 will swing upwardly about the hinge pivot 20 while the guard 22 may also have independent rocking motion on the sleeve 62 between the forward ends of bars 16 as the work moves rearwardly in contact with the lower edges 28 of the plates 26. After the operation has been completed, the light weight basket guard 22 and bar 16 may be easily swung upwardly and outwardly around the hinge pivot 20 to a position entirely at the rear side of the work table. While, as in the above mentioned patent, I have referred to the use of the invention in connection with a circular saw of the tilting arbor type, it will of course be apparent that the novel basket guard of the present application may also be readily employed in connection with the conventional fixed arbor type of saw, and either with or without the use of the splitter blade 10.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. A basket-type guard for circular saws comprising side panels to extend forwardly and rearwardly of a saw blade at opposite sides thereof, and means arranged between and rigidly holding said panels in spaced parallel relation including a metal deflector unit positioned directly above the point of cutting contact of the saw blade with the work and comprising a plurality of spaced elements for deflecting sawdust

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downwardly between the side panels of the guard and providing spaced sight openings for viewing the point of cutting contact between the saw and work during operation of the saw.

2. A basket-type guard for circular saws as defined in claim 1, wherein said side panels are die stamped sheet metal plates having forwardly disposed upwardly inclined, planar upper and lower edge portions and said spacing means includes a nose casting having integrally connected planar arms extending respectively rearwardly between the upper and lower planar edge portions and forming a downwardly and rearwardly inclined, self clearing pocket preventing passage of saw dust beyond the front end of the guard, and means detachably securing said nose casting between said panels.

3. A basket type guard for circular saws as defined in claim 1, wherein said spacing means also includes an elongated member rigidly secured between said side panels in rearwardly spaced relation from said deflector unit and having means intermediate of its ends and between said panels for rockably mounting the guard upon a swingable support.

4. A basket-type guard for circular saws comprising sheet metal side panels to extend forwardly and rearwardly of the saw blade at opposite sides thereof and having spaced slots in their forward end portions, means arranged between and rigidly holding said panels in spaced parallel relation, said means including a deflector unit located above said slots and comprising opposite side walls integrally connected by

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a plurality of longitudinally spaced deflecting vanes operative to deflect sawdust downwardly for outward passage through said slots to opposite sides of the guard.

5. A basket-type guard for circular saws comprising side panels extending forwardly and rearwardly of a saw blade at opposite sides thereof, and means arranged between and rigidly holding said panels in spaced relation including a deflector unit positioned directly above the point of cutting contact of the saw blade with the work and comprising a plurality of longitudinally spaced inclined vanes providing open spaces therebetween for observation of the cutting action of the saw blade and arranged to deflect sawdust downwardly between the side panels of the guard.

WILLIAM A. ESCHENBURG.

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