July 7, 1970 J. A. PALMER 3,519,041

POWER SAW BLADE GUARD

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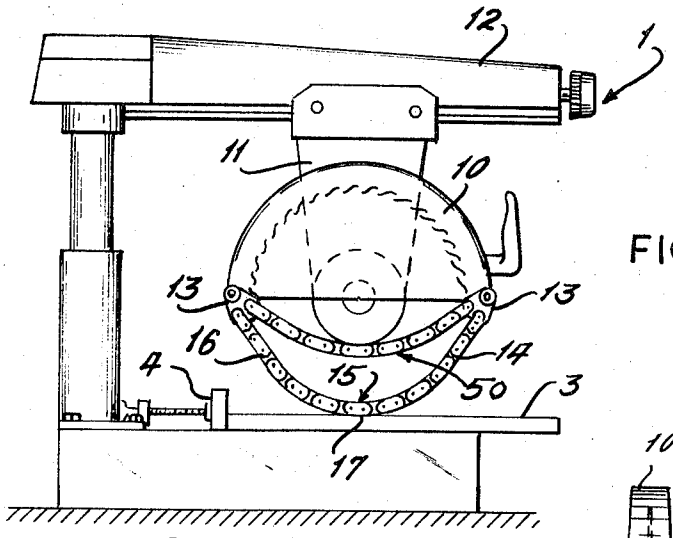


FIG. 1

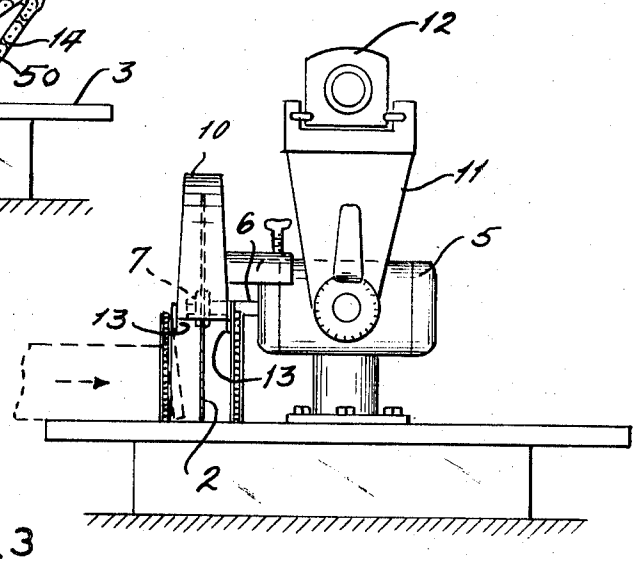


FIG. 2

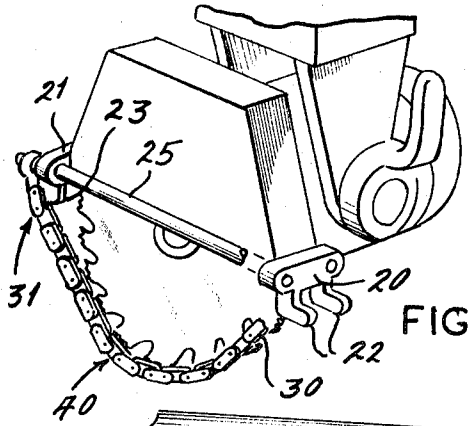


FIG. 3

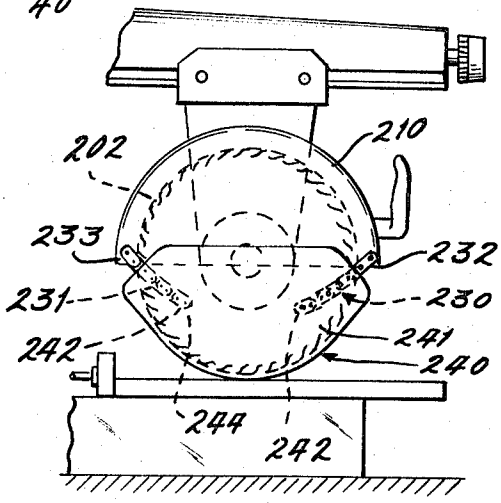


FIG. 4

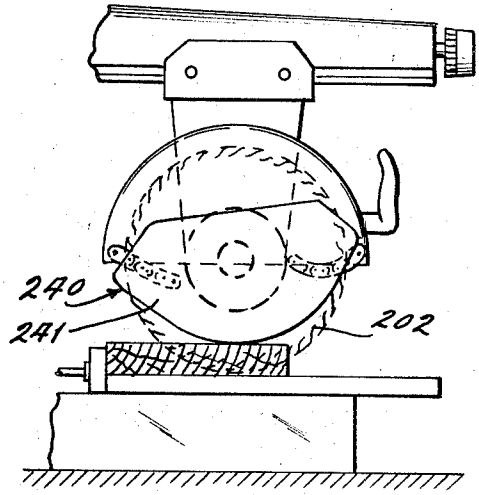


FIG. 5

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POWER SAW BLADE GUARD

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ABSTRACT OF THE DISCLOSURE

A support with mounting locations, fixed with respect to the blade and oriented fore and aft with respect to the blade, flat link chain with an end mounted on each mounting location and with a multiplicity of links extending from each of the ends and guard means in laterally blade-edge shielding position, lying substantially parallel to the normal feed direction of work to be cut and offset transversely from the blade, adapted to engage the work and being mounted on the chain. The guard may comprise additional links or a plate, for example.

BACKGROUND OF THE INVENTION

This invention has particular application to radial arm saws, but its application is not limited thereto. Radial arm saws are equipped with guards which cover the upper part of the saw blades. However, the lower half of the blade is conventionally left exposed, which presents a serious hazard.

One of the objects of this invention is to provide a blade guard which can be attached to existing power saws, to protect the user against getting his fingers cut off or work pieces thrown off, by engaging the blade from the side.

Another object is to provide such a guard which can engage a work piece without interfering with the sawing process.

Other objects will become apparent to those skilled in the art in the light of the following description and accompanying drawings.

SUMMARY OF INVENTION

In accordance with this invention, generally stated, a saw guard is provided for a power saw blade, which guard includes a support having fore and aft mounting locations normally fixed against translation in relation to the saw blade, an end of flat link chain mounted on the aft location, an end of flat link chain mounted on the fore location and a multiplicity of links connected to each end and hanging from said location along and spaced laterally from the saw blade, the links lying with their flat tides substantially parallel to the plane of the saw blade when the blade is upright. A central guard section, in the form of additional links or a plate-like member, is connected hingedly to the links depending from the ends.

In the preferred embodiment, the chain ends are mounted on the mounting locations by means of hinge blocks which permit limited movement of the chain in a direction away from the blade, so that at least one chain if more than one is used, can hang vertically if the blade is tilted.

The nature of the flat link chain is such that the guard can engage and ride up over a fence and the work piece, without interfering with the cutting of the work piece.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view in side elevation of a radial arm saw equipped with one embodiment of guard of this invention;

FIG. 2 is a view in front elevation of the saw shown in FIG. 1;

FIG. 3 is a fragmentary view in perspective, partly broken away, of a radial arm saw equipped with another embodiment of guard of this invention;

FIG. 4 is a fragmentary view in side elevation of a radial arm saw equipped with still another embodiment of guard of this invention; and

FIG. 5 is a view corresponding to the view of FIG. 4, showing the saw and guard in use.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, and particularly to FIGS. 1 and 2 for one embodiment of guard of this invention, reference numeral **1** indicates a radial arm saw with a circular blade **2**, a table **3**, a fence **4**, and an electric motor **5**, with a shaft **6**, on which the blade **2** is mounted by means of a nut **7**. A conventional upper blade guard **10** is mounted to embrace the upper part of the blade **2**. The upper blade guard **10** is fixed, in normal use, against translation with respect to the blade, i.e., the blade and guard move together, supported by a carriage **11** which is mounted on an arm **12** projecting over the table **3**. All of these elements are conventional.

Four generally triangular mounting brackets **13** constituting mounting locations of this embodiment are attached to the upper guard **10** near the lower edge of the upper guard **10** and fore and aft thereof, two on each side. In this embodiment a three link fore link section **14** of lower guard **15** is pivotally connected to the fore bracket **13**, a three link aft link section **16** is pivotally connected to the aft bracket **13**, and a five link central section **17** makes up the rest of the lower blade edge guard **15**. All of the links making up the lower guard **15** are flat sided, laterally stiff and longitudinally flexible.

In this embodiment, a second chain **50** is shown connected to the same mounting location as the sections **14** and **16**. The function of the chain **50** is to give additional strength against side thrust by a work piece which is accidently shoved toward the saw blade from the side.

In the embodiment shown in FIG. 3, brackets **20** and **21** are mounted on the upper blade guard **10** fore and aft of the blade **2** and projecting laterally beyond the sides of upper guard **10**. L-shaped stops **23**, shown as integral with the bracket **21**, extend in a direction aft of the guard. Stops **22**, integral with the bracket **20**, extend in a direction forward of the guard. A rod **25** extends between and beyond the brackets **20** and **21**, journaled in passages in the brackets. Hinge blocks **26** are mounted on each end of both rods **25** projecting fore and aft of the brackets **20** and **21**. In this embodiment, the hinge blocks **26** constitute the mounting locations for a fore chain link section **30** and an aft chain link section **31**.

In this embodiment, a central section **40** of the guard is made up of additional flat links of chain. The entire chain hangs in edge-shielding relation to the blade.

Referring now to FIGS. 4 and 5 for an embodiment of the guard which gives particularly effective protection, an end **233** of a chain **231** is mounted on a bracket connected to an upper blade guard **210** aft of a blade **202**. The bracket in this embodiment, consists of a pair of mounting ears on ends of a rod mounted on and transversely of the housing **210**. A chain **230** is mounted at an end **232** on a bracket which includes a cross rod mounted on and transversely of the upper guard **210** at the forward end of the guard. Both the chain **230** and the chain **231** consist of a multiplicity of links. In this embodiment, a center guard section **240** is made up of an imperforate plate **241**, which is mounted by means of rivets **242** on links **244** and **245** respectively of the chains **230** and **231**. The links **244** and **245** are the links most remote from the ends **232** and **233**. The plate **241** hangs

parallel to and outboard of the blade **202**. In this embodiment, the guard is not mounted for swinging in the direction outboard of the blade.

The provision of a multiplicity of links between the ends of the chains permits the plate to rise to expose a work piece to the blade to the full height the saw is capable of cutting. At the same time, it provides a total enclosure against intrusion from the side of either hand or work piece.

Either a single guard can be provided, or one on each side of the blade. When a single guard is used, it will normally be positioned on the side of the blade opposite the side on which a saw grip is provided. This is because, when the grip is put on the right side of the saw as one looks at it, the right hand will ordinarily be safely occupied in holding onto the grip and if a work piece is accidently shoved into the side of the saw, it will ordinarly be from the left side.

In operation, the well-recognized lateral stiffness of the flat link chain will keep the guard from deflecting toward the blade, while its longitudinal flexibility permits the guard to be dragged over any work piece which can be cut by the saw, as illustrated in FIG. 5.

Numerous variations in the structure of the guard of this invention within the scope of the appended claims will occur to those skilled in the art in the light of the foregoing disclosure. Merely by way of example, the hinge block mounting of the embodiment shown in FIG. 3 can be used in connection with an extra chain as in the embodiment of FIG. 1. The end links of the guard **15** and chain **50** of the embodiment shown in FIG. 1 can be mounted on single pins, with the chain **50** either inboard or outboard of the guard **15**, as desired, eliminating the triangular bracket. This arrangement has the advantage of vertical compactness, making it easier to accommodate the full depth of saw cut. The end link sections of other embodiments of lower guard can be pivoted directly to the upper guard or to an ear secured to or integral with the upper guard. The plate-type guard

can be perforate, in the form of a heavy wire mesh, for example, or the flat link chain can be different from a roller chain, cf. Knight American Mechanical Dictionary, volume 1, page 517. These are merely illustrative.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A guard for a power saw blade, comprising a support having fore and aft mounting locations normally fixed against translation in relation to the saw blade, one end of flat link chain mounted on the fore mounting location, an end of flat link chain mounted on the aft location, and a multiplicity of links connected to each end and hanging from said location along and spaced laterally from said saw blade, said links lying with their flat sides substantially parallel to the plane of said blade.

2. The guard of claim **1** wherein the said saw is a circular saw with a fixed base, said saw being movable relative to said base.

3. The guard of claim **1** wherein the said ends constitute two ends of a single length of chain and the chain extends along and in transversely shielding relation to the edge of the blade.

4. The guard of claim **1** wherein a plate is mounted to said links intermediate said two ends, there being a multiplicity of links between each end and each mounting location of said plate.

5. The guard of claim **1** wherein the links connected to the support at the fore location are separate from those connected to the support at the aft end.

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U.S. Cl. X.R.

83—544; 144—251