Dec. 6, 1960 V. W. RICKFORD 2,963,056

ELECTRIC SAW SAFETY GUARD RETRACTOR

Filed June 5, 1958

FIG. 1

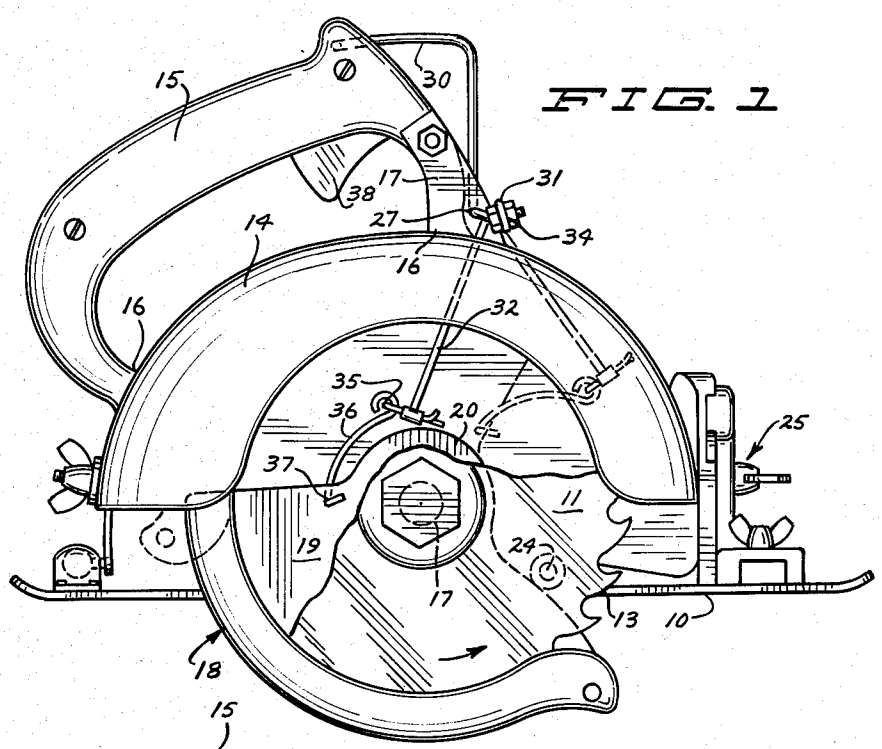
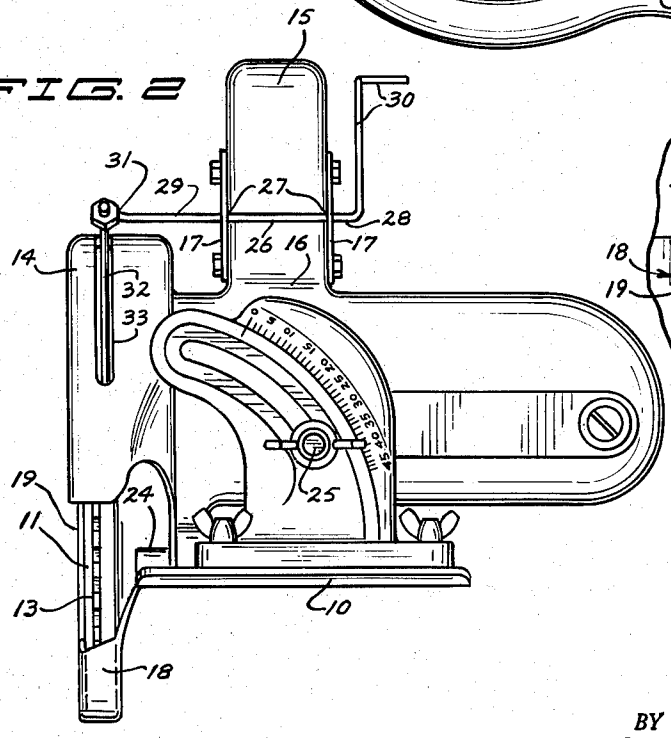


FIG. 2



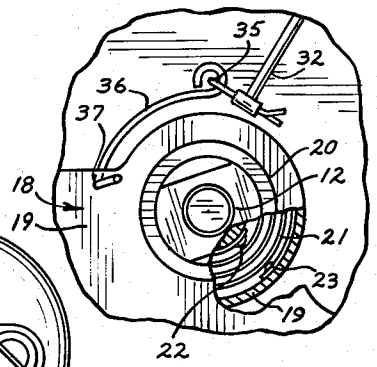


FIG. 3

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ELECTRIC SAW SAFETY GUARD RETRACTOR

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2 Claims. (Cl. 143—159)

The invention herein has relation to a new and improved construction and arrangement for retracting a lower guard for a circular blade of what is commonly known as an electric saw.

In the accompanying drawing forming a part of this specification,

Fig. 1 is a side elevational view, partially broken away and partially in section, of an electric saw including retracting mechanism made according to the invention;

Fig. 2 is an end elevational view of the disclosure of Fig. 1 as it would appear from the right; and

Fig. 3 is a fragmentary view, partially in elevation and partially in section, detailing features and characteristics of the new and improved retracting mechanism of the invention.

Referring to the drawing and the numerals of reference thereon, **10** denotes the base of an electric saw and **11** represents a circular blade thereof suitably and conveniently rotatably mounted, as at **12**, on a frame upon said base. The circular blade includes cutting teeth **13** and is to be rotated in the direction of the arrow in Fig. 1. Said circular blade is substantially in perpendicular relation to the base of the electric saw at a side thereof and a portion of the circular blade extends to position below said base, as disclosed in said Fig. 1 and in Fig. 2.

A curvilinear upper guard **14**, part-circular in cross-section, for the circular blade **11**, suitably and conveniently supported on the frame of the electric saw, is in spaced covering and protecting relation to the cutting teeth **13** on an upper peripheral portion of said circular blade.

A manipulating handle **15** of the circular saw, situated upwardly of the upper guard **14** at a side thereof and in a vertical plane including the base **10**, includes rearward and forward ends integral, as at **16**, with a rearward and an intermediate portion of the frame. A body of the manipulating handle is in spaced relation to said frame.

Spaced, parallel rigid strips **17**, in perpendicular relation to the base **10**, are secured to opposite side surfaces of a forward portion of the manipulating handle and extend forwardly thereof. A finger control switch on said manipulating handle is designated **38**.

A lower guard **18** for the circular blade **11**, normally in spaced covering and protecting relation to cutting teeth **13** on a lower peripheral portion of said circular blade, includes an elongated circumferential portion, part-circular in cross-section, and an inwardly extending flange **19** rotatably mounted, as at **20**, on and about the axis for said circular blade. The inwardly extending flange **19** of the lower guard **18** is integral with an inner side edge of the elongated circumferential portion of said lower guard, and the lower guard is of less width than is the upper guard **14** to lie between the opposite side portions of said upper guard in clearing relation thereto. Said lower guard is substantially in perpendicular relation to the base **10** and the peripheral portion of the upper guard is spaced at greater distance from the axis for the

inwardly extending flange of the lower guard than is the peripheral surface of said lower guard.

A coil spring **21**, having one of its ends attached, as at **22**, to the frame of the electric saw and its other end attached, as at **23**, to the lower guard, normally resiliently retains said lower guard in spaced covering and protecting relation to cutting teeth on the lower peripheral portion of the circular blade, as in Fig. 1 of the drawing. A stop element **24**, engageable by a forward edge of the inwardly extending flange **19** of the lower guard, limits the extent to which said lower guard can swing forwardly, in counterclockwise direction as shown.

Means, denoted generally at **25**, is included for adjusting the angular relationship of the base **10** and the circular blade **11**. The means **25** forms no part of the present invention.

An electric saw of construction as hereinbefore described is well known to the art. In practice, the lower guard, such as **18**, of the electric saw normally is rotated, against force of a resilient means, such as the coil spring **21**, thereof from a position where in spaced covering and protecting relation to cutting teeth on the lower peripheral portion of a circular blade, such as **11**, as in full lines in Fig. 1, to a position where said lower peripheral portion is exposed, as in dotted lines in said Fig. 1, merely by advancement of the lower forward end of said lower guard into the work. The coil spring **21** operates to return the lower guard to its normal position upon release of said lower guard from the work.

It is essential, in some instances of practical operation of a circular saw, that the lower guard, such as **18**, thereof be manually rotated from position where in spaced covering and protecting relation to the lower or cutting portion of the circular blade, such as **11**, to position where clear of said lower or cutting portion. The novel and improved construction and arrangement of the invention is for manually rotating the lower guard **18** from its operative position, as in full lines in Fig. 1 of the drawing, to its inoperative position, as in dotted lines in said Fig. 1, against force of the coil spring **21**, or other resilient means.

The midportion of a shaft **26**, substantially parallel to the base **10**, is rotatably mounted, as at **27**, in the spaced, parallel strips **17**, and opposite end portions, denoted **28** and **29**, respectively, of said shaft extend to position beyond said strips, respectively. Such shaft is disposed generally between the saw arbor and the handle. A crank arm **30** is in perpendicular relation to and rigid with the end portion **28** of the shaft **26**, and a lever arm **31** is in perpendicular relation to said shaft and integral with its end portion **29**. The lever arm **31** extends forwardly from the exterior end of the end portion **29** of the shaft **26**, and the crank arm **30** extends upwardly from the exterior end of the end portion **28** of said shaft.

A link **32**, movable in a vertical elongated slot **33** in the upper guard, is supported, as at **34**, for movement of rotation on an outer end portion of the lever arm **31** to extend downwardly of the shaft **26**. A lower end of the link **32** is pivotally attached, as at **35**, to the upper end of a hook member **36**, and the lower end of said hook member is pivotally attached, as at **37**, to a part of the flange **19** of the lower guard **18** at a location in spaced relation to the axis of or for said lower guard. The lever arm **31** and the link **32** are to be retained in fixed angular relation to each other in direction longitudinally of said lever arm.

It will be evident that the lower guard **18** will be swung from the full line position to the dotted line position in which disclosed in Fig. 1 of the drawing in response to manual rearward swinging movement of the crank arm **30**, through the instrumentality of the lever arm **31**, the link **32** and the hook member **36**, and the coil spring **21**

will return said lower guard to its normal position upon release of said crank arm. The crank arm is accessible at a location adjacent to the manipulating handle **15** to be manually actuable by the fingers of the hand that retains said manipulating handle, leaving the other hand free for other usual and necessary manual operations.

What is claimed is:

1. A manual saw guard retracting actuator for a hand-held portable power circular saw frame having a saw arbor rotating about an axis extending transversely of a pistol grip handle and a saw blade guard mounted on the frame for circumferential swinging movement concentric with the saw arbor axis upward toward the handle in retracting from a position covering the cutting segment of the saw blade, which saw guard retracting actuator comprises a shaft rotatable about its axis, extending substantially parallel to the saw arbor, and disposed at the same side of the saw arbor as the handle, a first arm in fixed angular relation to said shaft, extending generally toward the saw arbor and swingable generally in a plane transversely of the arbor by rotation of said shaft, means connecting the swinging end of said first arm and the saw guard for effecting retracting movement of the guard by swinging of said arm, and a second arm projecting transversely from said shaft to a position alongside the handle for voluntary manual swinging to rotate said shaft in guard-retracting direction.

2. A manual saw guard retracting actuator for a hand-held portable power circular saw frame having a saw arbor rotating about an axis extending transversely of a pistol grip handle and a saw blade guard mounted on the frame for circumferential swinging movement concentric with the saw arbor axis upward toward the handle in retracting from a position covering the cutting segment of the saw blade, which saw guard retracting actuator comprises a shaft rotatable about its axis, extending substantially parallel to the saw arbor, and disposed generally between the saw arbor and the handle, a first arm in fixed angular relation to said shaft at one end thereof, extending generally toward the saw arbor and swingable generally in a plane transversely of the arbor by rotation of said shaft, means connecting the swinging end of said first arm and the saw guard for effecting retracting movement of the guard by swinging of said arm, a second arm projecting transversely of said shaft from the other end portion thereof and extending generally toward the handle and away from the arbor, and a thumb-engageable projection extending from said second arm transversely thereof to a position alongside the handle for voluntary manual swinging to rotate said shaft in guard-retracting direction.

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