

Oct. 23, 1962

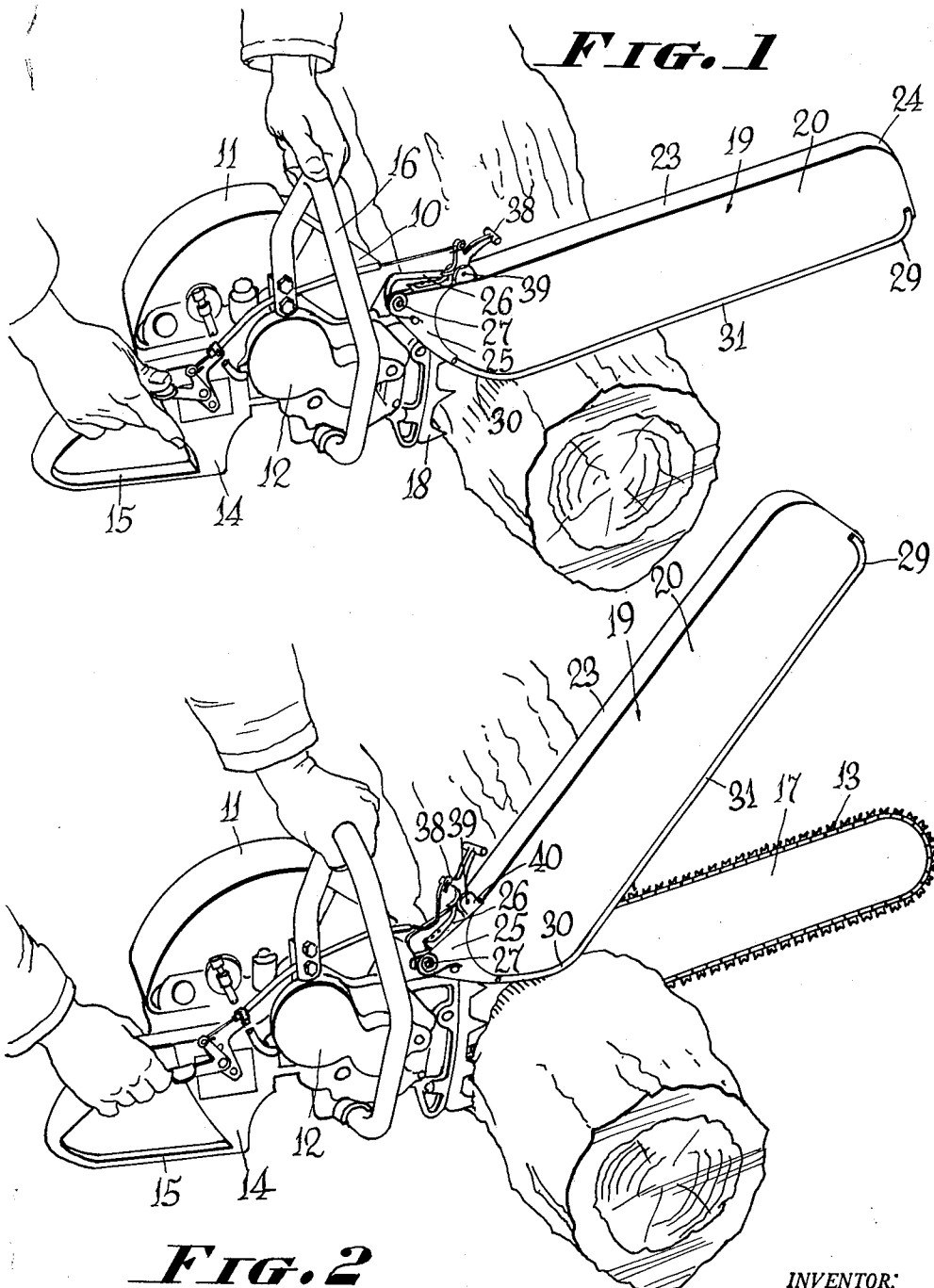
A. WOLESAGLE

3,059,673

SAFETY GUARD FOR CHAIN SAW

Filed April 20, 1960

2 Sheets-Sheet 1



INVENTOR:
ARNOLD WOLESAGLE
BY:

Beau, Brooks, Buckley & Beau,
ATTORNEYS.

Oct. 23, 1962

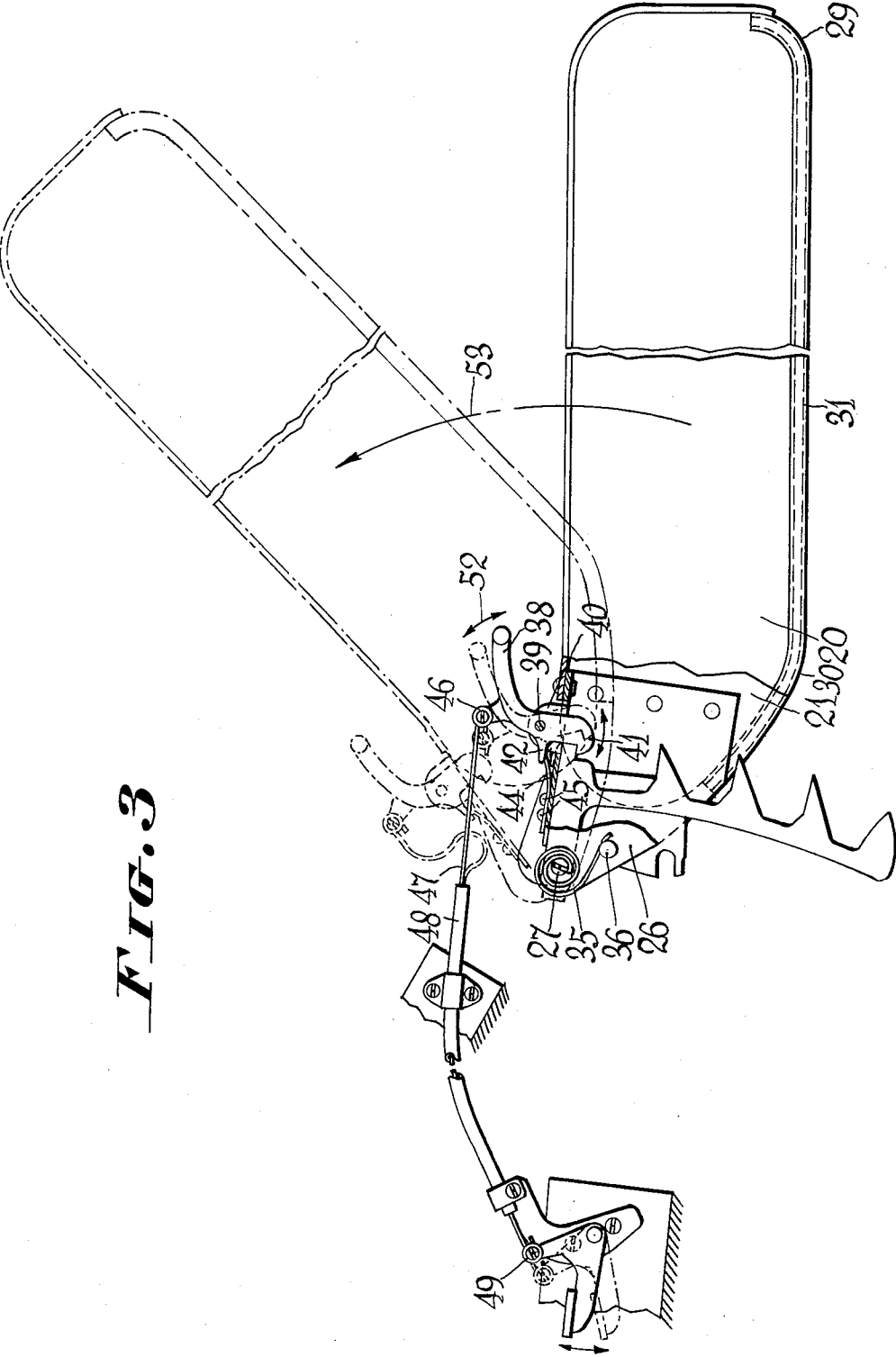
A. WOLESKAGLE
SAFETY GUARD FOR CHAIN SAW

3,059,673

Filed April 20, 1960

2 Sheets-Sheet 2

FIG. 3



1

3,059,673

SAFETY GUARD FOR CHAIN SAW

Arnold Woelagle, Geneseo, N.Y.

Filed Apr. 20, 1960, Ser. No. 23,445

1 Claim. (Cl. 143-32)

The present invention relates to chain saws and particularly to safety devices for use with such saws.

Most power-driven saws, and particularly circular saws, are protected with guards of some description. Heretofore, a telescoping sectional sheath has been suggested as a protective sheath and safety device for power-driven chain saws, but by reason of frangibility, proneness to jam together, with high initial cost and high cost of maintenance and repair, have not been extensively used. A device of this character is illustrated in United States Letters Patent No. 2,638,944, issued the 19th day of May 1953, to Arnold Woelagle, the present applicant.

The present invention provides a low cost safety enclosure for power-driven chain saws which is positive in its action, which is capable of being locked in protective position when the chain saw is being driven but is not in operative engagement with a workpiece and which is readily and easily operated manually to permit operative engagement with an intended workpiece.

The blade enclosing safety device of the present invention is so formed and shaped that, upon contact with an intended workpiece and disengagement thereof from protective locked position, the chain saw progressively engages the workpiece to induce the desired degree of cutting thereof.

The drawings attached hereto and made a part of the specification are as follows:

FIG. 1 illustrates schematically a power-driven chain saw equipped with a specific form of protective device and safety equipment of the present invention, for use upon an intended workpiece which is, in this instance, a log, and wherein the saw itself is enclosed in the protective device.

FIG. 2 shows the saw in operation upon the workpiece of FIG. 1 and illustrated the advantages in use of the cam shaped and formed bearing surface of the enclosing sheath for actuating movement of the sheath in the plane of the cut of the saw.

FIG. 3 is an enlarged view of the protective sheath in side elevation showing the movement of the sheath from enclosing protective position to a fully removed position as shown in phantom.

In the specific embodiment of the invention illustrated, a power-driven chain saw is provided with a single cylinder internal combustion engine 10, fed by liquid fuel from fuel tank 11. The engine is connected in the usual way to power-transmitting means within the housing 12, which power-transmitting means are operatively connected to the saw chain 13, all in conventional manner.

Hand-holding devices are attached to or formed in the engine carrying mounting 14. In the specific embodiment illustrated, a handhold 15, generally for the right hand, is formed in the engine mounting extending rearwardly thereof. An additional handle 16, generally for the left hand of the operator, is attached in any convenient fashion to the engine mounting 14 or auxiliary parts thereof.

The saw chain 13 extends forwardly of the engine mounting and in operation continuously travels upon and around the saw chain guide bar 17, all in conventional manner and in structures well understood in the art. A toothed anchoring member 18 is likewise attached to the engine mounting, the better to hold the saw in place for cutting the workpiece at a predetermined spot.

In normal use of power-driven chain saws, whether the motive power be an electric motor, or an internal

2

combustion engine, as specifically illustrated, the power source is energized and the saw chain 13 is immediately actuated since the drive within the drive housing is a direct drive. In accordance with the present invention, an enclosing protective sheath 19 is in enclosing and sheathing position about saw chain 13 and its guide bar 17, as shown in FIG. 1.

The protective sheath is formed of a side member 20 spaced apart from and substantially parallel to a companion side member 21 (FIG. 3) which side members are connected by a connecting and spacing member such as the top connecting member 23 shown extending forwardly and downwardly as shown at 24.

The spaced side members 20 and 21 are shown as formed at the rear with tapering companion ear pieces 25 and 26 which are pivotally connected to the engine mounting by pivot pin 27 passing through the engine mounting at a point above and out of the way of saw chain 13 and guide bar 17, but in a manner completely to enclose those members.

To provide a camming action to raise the side members 21 and 22, such members are provided with curved portions upon the lower edges at the forward lower edge and the rearward lower edge as shown at 29 and 30 respectively. As the lower edges of the spaced parallel protecting side members are subject to a certain amount of wear when in use, by pressure against the workpiece, they may be provided with reinforcing members as shown at 31 upon the lower edge of side member 20. It will be noted that pressure upon the lower edges of the side pieces 20 and 21 raise the sheath 19 by reason of the camming action of the workpiece as well, shown in FIG. 2, permitting operative engagement of saw chain 13 with the piece, with continuous raising of such sheath as the sawing action progresses.

Resilient means are provided which tend to maintain the sheath in protective position and to return the sheath to such position. A specific form of such means is shown at 35 (FIG. 3), comprising a coil of spring steel, one end of which is illustrated as attached to pivot pins 27, while the other end bears upon a lug 36. The spring 35 being under tension, the protecting sheath 19 is urged to the closed position shown in FIG. 3 in full lines, completely to enclose the saw chain 13 and guide bar 17.

In accordance with the present invention, means are provided to maintain the protective sheath 19 in safely locked protecting position. In the specific form of locking mechanism shown, an arm 38 is pivoted upon a pivot pin 39 placed in bracket 40 positioned at the top and rearwardly of side members 20 and 21. The arm 38 is formed with facing latch members 41 and 42, the finger 42 engaging a convenient portion of the mechanism on the engine mounting as for convenience a tooth of anchoring member 18, latching engagement being insured by the upward pressure exerted upon the underside of upper latch finger 42 by, for instance, the free end of leaf spring 44 shown anchored at 45.

Means are provided manually to induce disengagement of the latch 42 by providing a toggle 46 from which a flexible shaft connection 47 runs through a protecting conduit 48 to a manually operable toggle arm 49 anchored at any convenient position on the engine mounting as adjacent the handhold 15.

When the sheathed rotating saw is presented to a workpiece and downward pressure exerted upon toggle arm 49, as shown in FIG. 1, that arm is moved to the position shown in dotted lines in FIG. 3 causing movement of latch member 38, the distance shown by the measuring arrow 52. Disengagement of latch 41 being thereby effected, the sheath is free to move upwardly as shown by arrow 53 to permit full and complete operation of the saw. When the saw is removed from the workpiece

3

the action of coil spring 35 automatically returns the protecting sheath 19 to enclosing safety position, whereupon leaf spring 44 automatically insures locking activity by locking finger 41.

When using a power driven chain saw equipped with the device of the present invention, the saw is first actuated, the automatic latching device unlocked by depressing the manually operated lever, as shown in FIGS. 1 and 3, and the saw presented to the workpiece by bearing the rear camming surface 30 against it as shown in FIG. 1 or alternatively presenting the forward camming surface 29 against the workpiece.

The camming action raises the protective sheath 19 and permits sawing action and the sawing assembly can be anchored against the workpiece by jamming the tooth anchor bar 18 against the workpiece. The saw can then be rocked to any desired position and complete severance obtained or sawing effected to a desired depth.

What is claimed is:

In combination with a chain saw having an engine-mounting frame, an elongate saw chain guide bar fixed at one end thereof to said frame and projecting forwardly therebeyond, a handhold member fixed to said frame, a work-abutting member fixed to said frame adjacent the juncture of said guide bar with said frame and extending below the lower edge of said guide bar, a safety device attached to said chain saw, said safety device comprising a sheath open at the bottom and generally shaped to completely enclose said guide bar and a saw chain associated therewith,

4

said sheath having a main body portion for enclosing said guide bar and the open bottom presenting a substantially straight lower edge extending from the front, free end region of said guide bar rearwardly to terminate in spaced relation forwardly of said work-abutting member,

said sheath also having spaced ear portions at its rearward end presenting a curved extension of said lower edge sloping upwardly from the aforesaid rearward terminus of the lower edge toward the upper rear corner of the sheath, said upper rear corner of the sheath being disposed above said guide bar and rearwardly of said work-abutting member and there being means pivotally attaching such upper rear corner to said frame,

latch means carried by said sheath engageable with an element on said frame for holding the sheath against pivotal motion and in the aforesaid enclosing relation to the guide bar,

and latch release means mounted adjacent said handhold member and connected to said latch means.

References Cited in the file of this patent

UNITED STATES PATENTS

1,780,173	Crowe	Nov. 4, 1930
2,638,944	Woleslagle	May 19, 1953
2,741,282	Wieting	Apr. 10, 1956
2,750,971	Collette et al.	June 19, 1956
2,937,673	Duperron et al.	May 24, 1960