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POWER CHAIN SAW

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3 Claims. (Cl. 143—32)

My invention relates to improvements in power chain saws, particularly those which are used in the woods for bucking fallen timber.

The usual type of power chain saw is provided with a prime mover at one end which is either a gasoline engine or an electric motor, the prime mover being provided with a pair of handles by which it and the saw is manipulated by an operator and at the outer end of the saw another pair of handles are provided. When using the saw for bucking fallen trees the handle or handles at the outer end are of little value and are in many cases a hindrance, since they make it difficult to enter the free end of the saw cutter bar into the place where a cut may be required. At the free end of the usual power saw cutter bar a sheave is provided over which the chain saw passes and the sheave is spring mounted to provide a resilient tension on the chain saw so that shocks imparted to the saw by knots or other obstructions while cutting are not fully transmitted to the operator. The above construction makes the free end of the saw cumbersome and does not permit the saw to be withdrawn lengthwise through a cut, should it be desirable.

With a view to overcoming the above and other defects the present invention is designed so that no spring mounted sheave is required at the outer end of the cutter bar, and to prevent any shock to the even running of the chain saw being transmitted to the operator handling the saw.

Referring to the drawing,

Fig. 1 is a side elevation of the invention showing a portion of the strut cut away and exposing the drive sprocket.

Fig. 2 is a plan view.

In the drawing like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates a gasoline engine provided with a transmission case 2 on the side of which a drive sprocket 3 is mounted. The sprocket 3 is driven through a clutch 4 omitted from Figure 1, which is operated by a lever 5 on the opposite side of the transmission case 2.

The engine has a pair of hinge brackets 6 extending horizontally forward from its cylinder 7 and is connected by a pin 8 to a pair of brackets 9 which are carried upon the strut 10 of the saw. The strut is so constructed as to provide a vertical slot 12 in which is rigidly secured the inner end of a cutter bar 13 and leave upper and lower openings 14 through which an endless chain saw 15 may pass.

The cutter bar 13 consists of a plate cambered upon its upper and lower edges as at 16, having

its free end semi-circular as at 17 and its inner end arcuately tapered to less than the diameter of the driven sprocket 3, as indicated at 18. The cutter bar 13 is provided with a peripheral groove 19 indicated in dotted line in Figure 1 to receive the driving teeth of the chain saw and form a guide track therefor in the usual way. Adjacent the outer end of the cutter bar an opening 21 is provided to serve as a hand hole for lifting the forward end of the device when placing it in position upon a log or removing it from one place to another.

Extending from the strut 10 is a pair of handle bars 23 which are connected together by a cross bar 24 and are fitted with handles or grips 25 at their outer ends. A bolt 27 is hingedly connected to the base of the strut 10 and passes through an upturned bracket 28 mounted on the base of the engine. The bolt is provided with a compression spring 29 which urges the engine away from the strut 10 and resiliently tensions the chain saw 15 upon the cutter bar 13 and the sprocket 3. The compression of the spring 29 is such as to support the engine in normal position as shown within its mounting between the handle bars 23 when the saw is cutting under normal load or when at rest.

In operation, the device is set with the strut in contact with the log or other work to be sawn and since the device operates on the draw cut the drag of the saw will hold the strut firmly in abutment against the work. If a knot or other temporary obstruction is encountered by the chain saw 15 the momentum and power of the engine will cause the engine 1 to swing about the pin 8 with the sprocket 3 swinging along the arc shown in dotted line in Figure 1 as at X.

The above engine movement will provide a small amount of slack in the upper run of the chain saw, some of which will develop in a slight sag between the sprocket 3 and the tapered inner end 18 of the cutter bar 13.

The resistance to free movement of the upper run of the chain saw in the kerf will prevent any slack developing at the free end of the frame.

It is obvious that other means may be adopted to mount the engine to move the prime mover towards and away from the strut and to provide cushioning means between said parts.

What I claim as my invention is:

1. A power driven chain saw comprising a strut having a pair of spaced supports extending rearwardly therefrom, a cutter bar extending forwardly from said strut and being rigidly con-

nected thereto, a prime mover connected to the strut and having movement between the spaced supports in the direction of the cutter bar, a chain saw extending around the cutter bar, said prime mover having a sprocket for driving the chain saw and spring means interposed between the strut and the prime mover for resiliently tensioning the saw upon the cutter bar.

2. A power driven chain saw comprising a strut having a pair of spaced supports extending rearwardly therefrom, a cutter bar extending forwardly from said strut and being rigidly connected thereto, a bracket extending from the strut, a prime mover having a sprocket hingedly connected to said bracket and having movement between the spaced supports, a chain saw surround-

ing the cutter bar and the sprocket, and spring means abutting the strut and a part of the prime mover for urging the sprocket away from the strut to tension the saw upon the cutter bar.

5 3. A power chain saw comprising a strut having a curved face adapted to butt against the material to be sawn, a cutter bar rigidly connected to the strut, said strut being supported by a pair of handle bars, a chain surrounding the cutter bar, a prime mover having a sprocket for driving the chain, said prime mover being pivotally connected from the strut for swinging movement between said bars, and a compression spring interposed between the strut and the prime mover
10
15 for resiliently tensioning the chain.

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