June 13, 1944. J. DAY 2,351,112

CHAIN SAW TEETH

Filed Oct. 8, 1942

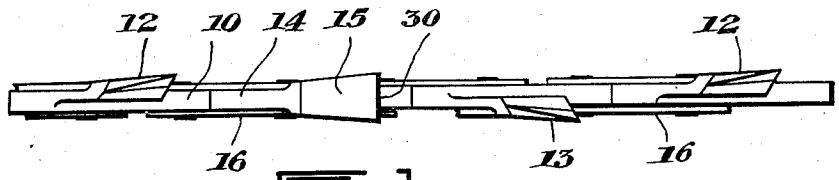


Fig. 1.

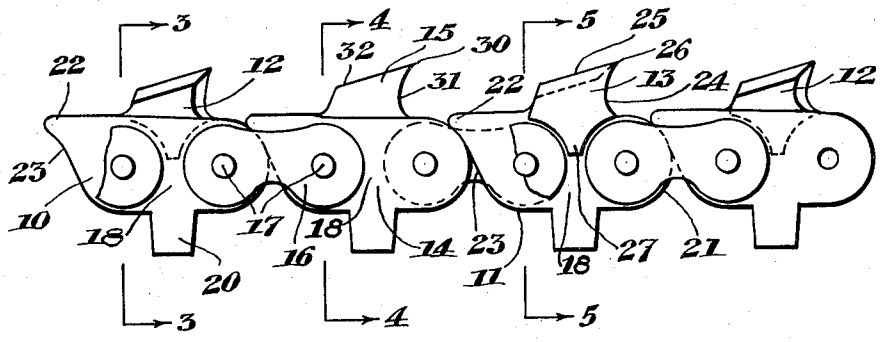


Fig. 2.

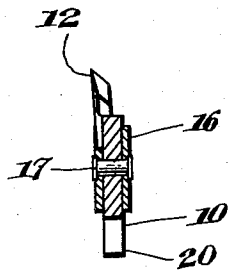


Fig. 3.

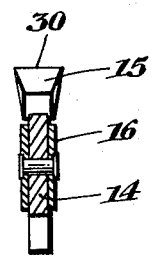


Fig. 4.

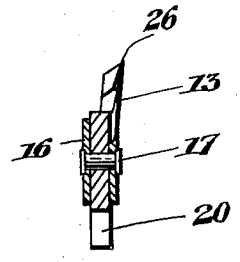


Fig. 5.

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CHAIN SAW TEETH

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In Canada October 6, 1941

1 Claim. (Cl. 143—135)

This invention relates to improvements in chain saw links.

An object of the present invention is the provision of chain saw links which cut the wood out cleanly.

Another object is the provision of chain saw links capable of cleaning out all the sawdust.

Another object is the provision of chain saw teeth having a tendency to dig down into the wood as they are moved thereover.

A further object is the provision of chain saw cutter teeth requiring very little setting.

A still further object is the provision of chain saw teeth designed to reduce the amount of power necessary to draw them through the wood.

With these and other objects in view, the present invention consists essentially of a chain saw link comprising a body, a lug projecting downwardly from the lower edge of the body, a tooth at the upper edge of the body, said tooth projecting upwardly from the body and extending outwardly beyond at least one side thereof, and a cutting tip formed at the outer forward corner of the tooth, as more fully described in the following specification and illustrated in the accompanying drawing, in which

Figure 1 is a plan view of a length of a chain saw incorporating this invention,

Figure 2 is a side elevation of the chain saw length,

Figure 3 is a vertical section taken on the line 3—3 of Figure 2,

Figure 4 is a vertical section taken on the line 4—4 of Figure 2, and

Figure 5 is a vertical section taken on the line 5—5 of Figure 2.

Referring more particularly to the drawing, 10 and 11 are cutter links having cutter teeth 12 and 13, respectively, at their upper edges. A raker link 14 is located between the links 10 and 11 and it has a raker tooth 15 at its upper edge. The links 10, 11 and 14 are pivotally connected together by connecting links 16 having rivets 17 extending therethrough adjacent the opposite ends thereof.

The only difference between the links 10 and 11 is that their respective teeth 12 and 13 are located on opposite sides of the chain saw, and, therefore, a description of link 11 will be sufficient for both these links.

The cutter link consists of a body 18 having a lug 20 projecting downwardly therefrom. The body has a curved end 21 at one end and a shoulder 22 at its opposite end, which is formed with a curve 23 along its lower edge.

The cutter tooth 13 has a cutting edge 24 formed along its forward edge. This cutting edge is preferably concave, as shown. Another cutting edge 25 is formed along the outer edge of the tooth and a cutting tip 26, in the form of a point, is found at the outer forward corner of the tooth. The outer cutting edge preferably slopes towards the body 18 from its forward end.

The tooth 13 extends outwardly beyond the side of the body 18 and it extends downwardly along said side to form a shoulder 27 having curved sides 28 which extend around the curved ends of the adjacent connecting links 16. Actually, the tooth 13 partially overlaps the body 18 at its upper edge, as clearly seen in Figure 5.

The raker link 14 is also formed with a body 18 in the same form as that of the cutter link 13 and having a lug 20 projecting downwardly from its lower edge. The raker tooth 15 projects upwardly from the upper edge of the link and it extends outwardly from both sides of the body 18, see Figure 4. The tooth 15 is formed with a wide cutting tip 30 at its outer forward corner and its forward edge 31 is preferably concave. The outer edge 32 preferably slopes downwardly towards the body from its forward end and the whole tooth may flare out from its base upwardly towards the cutting tip 30, as clearly shown in Figure 4.

When arranged in a chain saw, there is a cutter link at each end of the raker link. The cutter teeth 12 and 13 are arranged on opposite sides of the chain and each of these teeth may be set outwardly slightly, as shown in Figures 3 and 5. The width of the raker tooth 15 at its cutting tip 30 is such that the latter is just fractionally narrower than the distance between the vertical planes in which the tips 26 of the cutter teeth travel. When the links are in line, the shoulder 22 of each link rests on the curved end 21 of the following link. The lugs 20 run in the slots of the cutter bar and around the driving sprocket of the saw (not shown) in the usual manner.

With this arrangement, the cutting edges 24 and 25 of the cutter teeth cut through the wood and the tips 30 of the raker teeth, being substantially as wide as the transverse distance between the planes in which the cutter tips 26 travel, clean out all the cut wood or sawdust. The concave shape of the cutting edges 24 of the cutter teeth and of the forward edges 31 of the raker teeth, has a tendency to force the tips 26 and 30 down into the wood to improve the cutting qualities of the teeth. In fact the curved edges 31 of the raker teeth cause the latter to act as

planes to remove shavings instead of chewing and splitting the wood up into sawdust.

With the shoulders 17, it is possible to place the teeth 12 and 13 well over to the sides of the chain saw so that very little setting of these teeth is required in order to form a kerf in the wood of sufficient width to permit the whole chain saw to pass therethrough.

Various modifications may be made in this invention without departing from the spirit thereof or the scope of the claims, and therefore the exact forms shown are to be taken as illustrative only and not in a limiting sense, and it is desired that only such limitations shall be placed thereon as are disclosed in the prior art or are set forth in the accompanying claim.

What I claim as my invention is:

A chain saw having cutter teeth and raker teeth pivotally connected by side links, each of the side links having rounded ends, each of the cutter links having one end rounded and a shoulder formed at its outer end with the curved portion projecting over the curved portion of the adjacent cutter or raker link, each cutter tooth having a cutting edge formed along its forward end and another cutting edge formed along the outer edge of the tooth terminating in a point, said outer cutting edge sloping towards the body of the tooth from its forward end, the portion of the cutting tooth forming the cutter edges extending beyond the side of the body portion and extending downwardly along the said side to form a shoulder having curved sides extending around the curved end of the adjacent connecting links as well as partly over the body portion, each raker link being formed with a body portion of similar form to the cutter link and having a raker tooth projecting upwardly from the upper edge of the link, then extending outwardly from both sides of the body to form a wide cutting edge with a forward concave face.

JABE DAY.