Nov. 10, 1936. G. ARSNEAU 2,060,547

CHAIN SAW

Original Filed Nov. 15, 1933

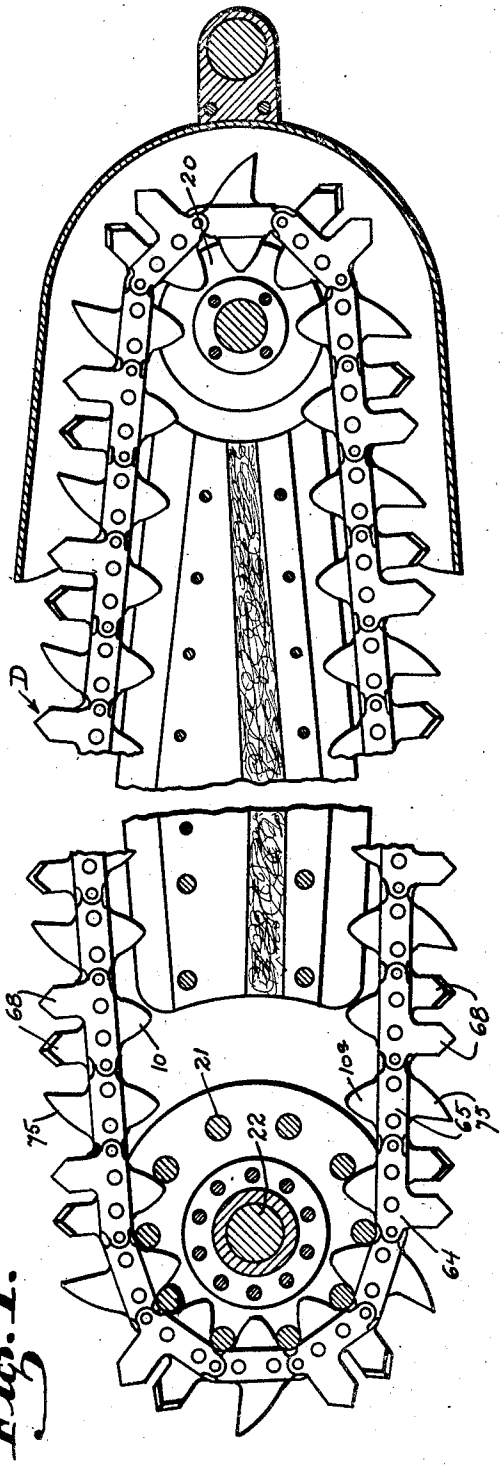


Fig. 1.

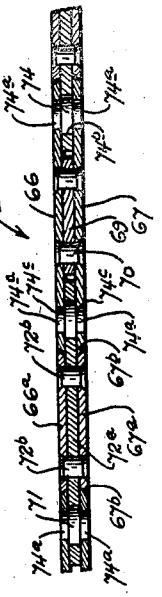


Fig. 3.

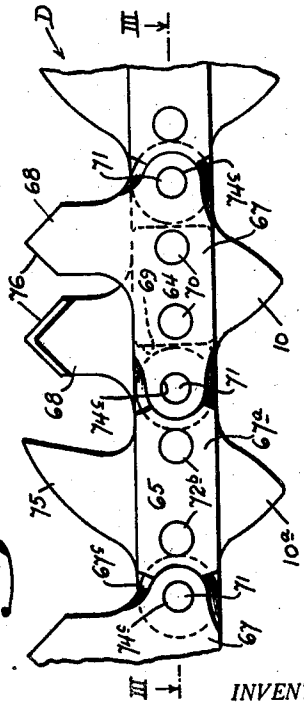


Fig. 2.

INVENTOR.
George Arsneau.

BY Townsend and Loftus.
ATTORNEYS.

Patented Nov. 10, 1936 2,060,547

UNITED STATES PATENT OFFICE

2,060,547

CHAIN SAW

George Arsneau, Los Angeles, Calif., assignor, by mesne assignments, to Dow Power Saw Company, a corporation of California

Original application November 15, 1933, Serial No. 698,186. Divided and this application January 30, 1934, Serial No. 708,982

3 Claims. (Cl. 143—135)

This application is a division of my copending application entitled Power saws, filed Nov. 15, 1933, Ser. No. 698,186.

This invention relates to sawing machines and more particularly to an improved chain saw for use in connection with such machines.

It is the object of the present invention to provide a generally improved chain saw which is composed of a number of links or teeth members articulately connected to permit of continuous passage of the saw over spaced rotating sprockets, said links being so formed and interconnected as to provide a very narrow and highly flexible saw, the sections of which are securely fixed against accidental separation at their points of pivotal connection.

Further of the objects and advantages of my invention will be apparent upon reading the following specification.

One form which the invention may assume is exemplified in the following description and illustrated by way of example in the accompanying drawing, in which:

Fig. 1 is a view partly in vertical section and partly in elevation of a saw embodying my invention.

Fig. 2 is a view in elevation showing on an enlarged scale a section of the chain saw.

Fig. 3 is a section on line III—III of Fig. 2.

Referring more particularly to the drawing, Fig. 1 shows a saw generally indicated at D which is supported by sprockets 20 and 21, the latter of which is driven by the shaft 22 in the manner described in my copending application above referred to.

The chain saw D employed herein is essentially characterized by links 64 and 65, the former consisting of substantially similar long-length plates 66 and 67, each having a cutting tooth 68, and interposed between said plates 66 and 67 is a short length plate 69. The sprocket teeth 10 of the chain are formed on said plates 69 and, as shown, the teeth 68 of the respective plates 66 and 67 are laterally spaced apart from each other for a distance equal to the thickness of the plate 69, and said teeth are staggered relatively to each other. Rivets 70 pass through the plates 66, 67 and 69.

The links 65 are each formed of outer short length plates 66*a*, 67*a*, and an intermediate long-length plate 72*a*, so that the extremities of the latter will extend an appreciable distance beyond the adjacent ends of the plates 66*a* and 67*a*. On reference to Figure 3 of the drawing, it will be noted that the short length plates 66*a* and 67*a* of the links 65 have the edge portions of their respective ends mitered at 67*b* to overlap the oppositely mitered edges 67*c* of the long length plates 66 and 67 of the links 64, the purpose of which will appear presently.

The plates 66*a*, 67*a* and 72*a* of the links 65 are securely riveted together at 72*b* in a manner like that employed for securing together the plates 66, 67 and 69 of the links 64. I hinge the links 64 to the links 65 by hinge pintles 71. These pintles are each formed with an intermediate cylindrical portion 74 and reduced oppositely extending cylindrical portions 74*a*. The portions 74 are set into bearing passages 74*b* in the extremities of the plates 72*a* of the links 65, and the reduced portions 74*a* are extended into alined apertures 74*c* in the extremities of the long plates 66 and 67 of the companion links 64. It is intended that the hinges thus formed shall be very flexible, and with this end in view, the width of the peripheral face of each pintle portion 74 is sufficiently in excess of the thickness of the plate 72*a* into which it is set as to provide such clearance between the inner faces of the extremities of the plates 66 and 67 and the opposite flat faces of the extremities of the plates 72*a*, whereby to avoid as well as possible undue frictional engagement of these faces with each other. Now by mitering the edges of the aforestated plates 66 and 67 and 66*a* and 67*a*, the extreme ends of these plates are confined against relative lateral movement, so as to prevent the reduced ends of the hinge pintles from leaving their apertures 74*c*. The construction of the chain is also such that it is of uniform thickness throughout and smooth faced at its respective sides. The knuckle joint construction of the hinges and the perfectly flush disposition of the outer ends of the pintles relatively to the said opposite sides of the chain, enable me to avoid the production of surface obstructions that would offer resistance to the intended high speed movement of the saw.

As shown, the intermediate plates 72*a* of the links 65 are formed to provide the sprocket teeth 10*a* and these plates are also formed to provide drag or cleaner teeth 75, the latter occupying positions in line longitudinally with the spaces between the mating cutting teeth 68 of the links 64. The respective cutting teeth 68 are V-shaped, sharpened along their edges 76, and same are flared laterally from each other or alternately set, as is common practice in crosscut saws, so that the effective cutting edge of the saw will produce

a cut of a width through which the thin frame structure of the saw assembly will freely pass as the saw progresses through the work.

While I have shown and described my invention more or less specifically, it is to be understood that various changes may be resorted to in the arrangement and construction of its several parts within the spirit of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A chain saw characterized by cutter tooth links and connecting cleaner tooth links, each link comprising companion outer plates and a plate interposed therebetween, hinge pintles supported by the interposed plates of the cleaner tooth links and having cylindrical end portions operatively set into the outer plate of the cutter tooth links, the edges of the outer plates of the cutter tooth links and the corresponding edges of the outer plates of the cleaner tooth links having complementary oppositely beveled faces overlapping each other, and means for securing all plates of each link together so as to maintain the aforestated order of relationship of said complementary beveled faces.

2. A chain saw characterized by cutter tooth links and connecting cleaner tooth links, each link comprising companion outer plates and a plate interposed therebetween, hinge pintles supported by the interposed plates of the cleaner tooth links and having cylindrical end portions operatively set into the outer plate of the cutter tooth links, the edges of the outer plates of the cutter tooth links and the corresponding edges of the outer plates of the cleaner tooth links having complementary oppositely beveled faces overlapping each other, and means for securing all plates of each link together so as to maintain the aforestated order of relationship of said complementary beveled faces, the outer plates of the cutter tooth links respectively formed with cutting teeth disposed respectively in different positions and spaced apart from each other, the interposed plates of the cleaner tooth links each having a cleaner tooth positioned in longitudinal alinement with the spaces between the cutting teeth of the aforestated cutter links.

3. A chain saw characterized by cutter tooth links and connecting cleaner tooth links, each link comprising companion outer plates and a plate interposed therebetween, hinge pintles supported by the interposed plates of the cleaner tooth links and having cylindrical end portions operatively set into the outer plate of the cutter tooth links, the edges of the outer plates of the cutter tooth links and the corresponding edges of the outer plates of the cleaner tooth links having complementary oppositely beveled faces overlapping each other, means for securing all plates of each link together so as to maintain the aforestated order of relationship of said complementary beveled faces, the outer plates of the cutter tooth links respectively formed with cutting teeth disposed respectively in different positions and spaced apart from each other, the interposed plates of the cleaner tooth links each having a cleaner tooth positioned in longitudinal alinement with the spaces between the cutting teeth of the aforestated cutter links, and a sprocket tooth formed in each interposed plate of each of the cutter and cleaner tooth links.

GEORGE ARSNEAU.