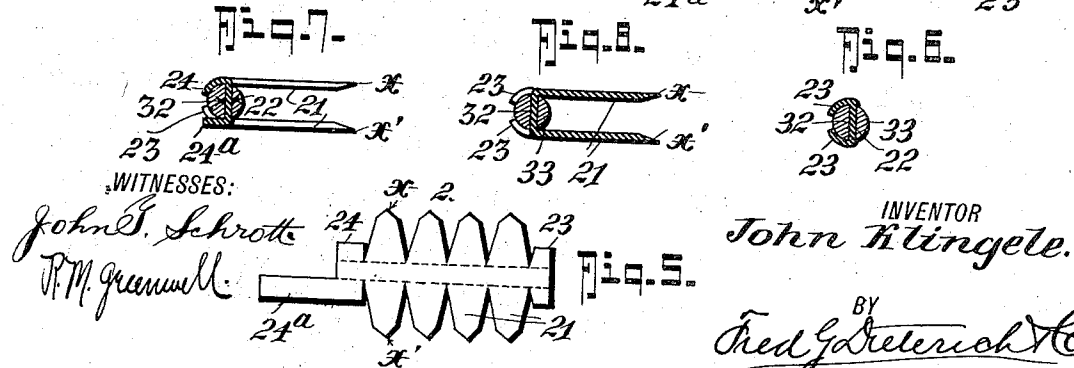
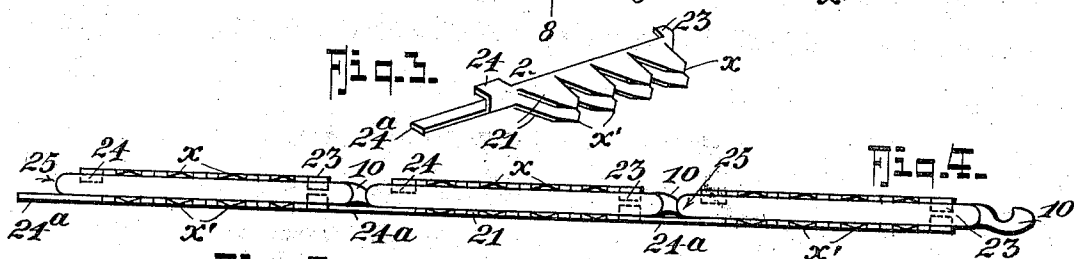
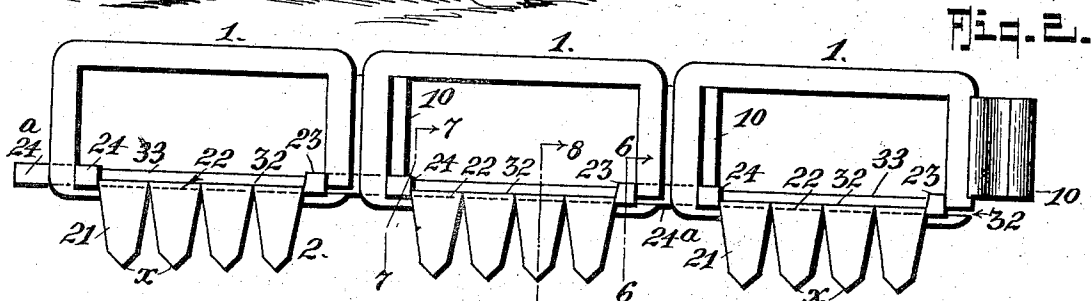
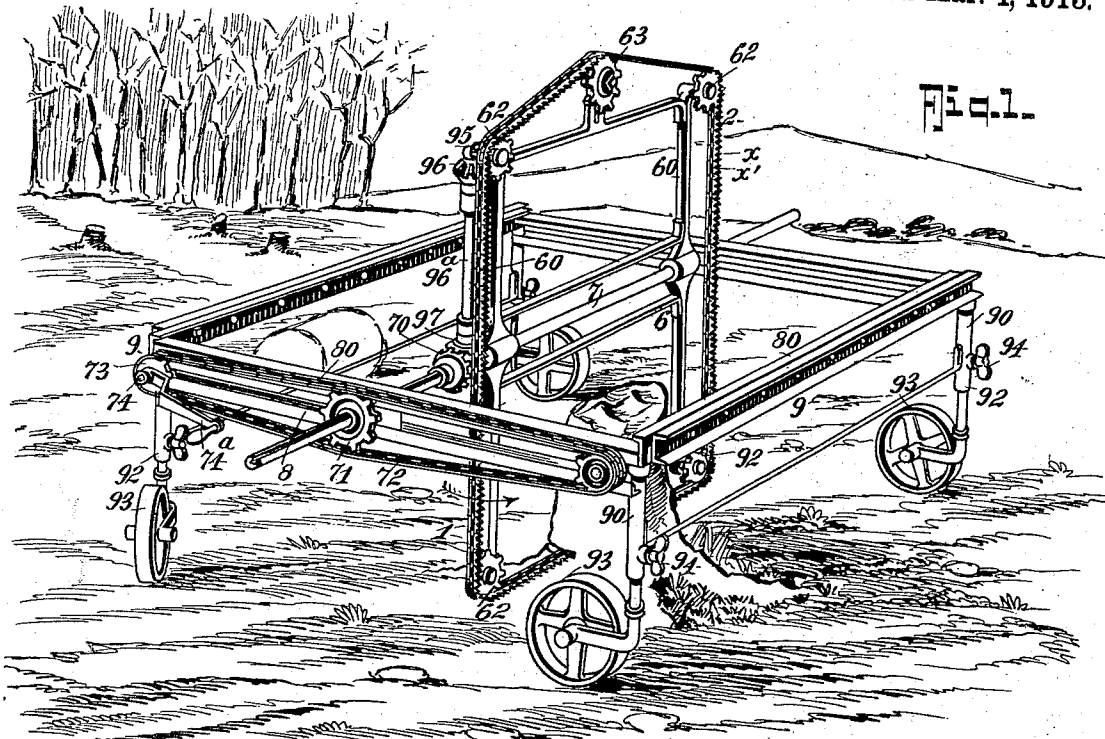


J. KLINGELE.
CUTTING MECHANISM.
APPLICATION FILED OCT. 4, 1911.

1,054,693.

Patented Mar. 4, 1913.



WITNESSES:

John S. Schrott
R. M. Grumwell

INVENTOR

John Klingele.

BY

Fred G. Petersen & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN KLINGELE, OF MARTINSBURG, MISSOURI.

CUTTING MECHANISM.

1,054,693.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed October 4, 1911. Serial No. 652,696.

To all whom it may concern:

Be it known that I, JOHN KLINGELE, residing at Martinsburg, in the county of Audrain and State of Missouri, have invented a new and Improved Cutting Mechanism, of which the following is a specification.

This invention in its general nature, relates to improvements in that class of cutting mechanism in which is included cutting blades or knives that form a part of a flexible body adapted for coöperating with pulleys or equivalent devices, for causing the knives or cutters to engage with the object to be cut, and in its more specific nature it is designed for cutting tree stumps and the like.

My invention has for its object, first: to provide an endless chain having each link formed with not less than one cutting tooth or knife; secondly: the provision of a suitable framing, including guide sprockets and means for actuating them for receiving an endless sprocket chain having the links provided with one or more cutting blades or knives, and thirdly: means forming a co-operative part of the frame for adjusting the endless link chain having the cutters, to and from the object being cut.

With other objects in view that will hereinafter appear, my invention consists in the peculiar construction and novel arrangement of parts hereinafter fully explained, specifically pointed out in the appended claims and illustrated in the drawing, in which:

Figure 1 is a perspective view that illustrates my invention arranged for cutting tree stumps. Fig. 2 is a detail top plan view of a number of flexible links equipped with the cutting members. Fig. 3 is a detail perspective view of one set of the cutting members for one link. Fig. 4 is a front edge elevation of a series of links with the cutters applied, one of the link joints being shown in section, and Fig. 5 is a view of a blank from which the links are bent up. Figs. 6, 7 and 8 are cross sections on the lines 6—6, 7—7, and 8—8 of Fig. 2.

The main feature of my invention lies in the construction of the cutting devices and these consist of an endless sprocket chain 1, the links of which are joined by the usual slip and loop connections 10, see Figs. 2 and 4, which as shown, is of the same or less

thickness as that of the body of the link and the space occupied by the cutting teeth or members, such arrangement being provided that there be no obstruction to the cutting action of cutters and the free passage of the body of the chain links as they are drawn through the kerf or opening made by the cutting members. Each chain link, at the outer edge is provided with cutter teeth or knives 2, and the said teeth or knives are provided, in sets, one set for each link. Each of the said sets is constructed as is best shown in Figs. 2 and 3 of the drawing. Each set of cutters is formed from a single blank of sheet steel, the opposite edges of which are cut out to form one or more teeth or knives 21, and the said toothed portions are bent outwardly at right angles to the body portion 22 and in parallel planes whereby to produce a pair of closely adjacent cutting edges $x-x^1$, and these as is best shown in Fig. 4, are spaced apart at least the thickness of the links 1 whereby, when the knives cut out a kerf or a slot in the object engaged thereby the links will travel freely through the said slot or cut out portion. Each blank, from which the sets of knives are bent up, has ear portions 23—23 at one end that form clamps for bending down onto one end of the link 3, see Figs. 6 and 8, and at the other end it has similar ear portions 24—24 see Fig. 7 that also form clamps for bending over the front member of the link and one of the said ears has a longitudinal extension 24^a. When the chain links are assembled, the abutting of the ends of the several links automatically holds the sets of teeth from slipping endwise out of a longitudinal slot 32 in the front member 33 of the link into which the body or U-shaped portion of the sets of teeth is slipped. By providing each set of teeth with the extension 24^a, the said extension on one link projects under the adjacent link and serves to keep the chain straight and materially overcomes the tendency of the chain to quiver or to extend upwardly at the joints, particularly when running on a high speed. By forming the teeth in the manner shown and described, and making the links to receive the said teeth as shown and stated, a simple and economical means for attaching the cutting elements to the links is provided for and the removal and replacing of any of the sets of

cutting elements on any one of the links is made possible, without disturbing the cutting members of the other links.

In Fig. 1, I have illustrated one way of practically utilizing a cutting means embodying the generic features of my invention. In the showing made 6 designates a swinging frame consisting of the opposite vertical members 60 that carry four sprocket wheels 62, and a combined idler and tightener wheel 63, the latter being adjustably mounted in a slotted standard 6* that rises from the cross head 61 that joins the members 60. The framing 6 is pivotally mounted, centrally thereof, on a cross shaft 7 mounted in the bed beams 8—8 of a carrier frame 9 which is formed of the side and end angle beams 80—80 and pendent legs 90—90, located one at each of the four corners of the said carrier frame 9. Each of the legs 90 has a socket 92 for adjustably receiving the shanks of the caster wheels 93 of which there is one at each corner of the frame 9, clamp screws 94 being provided for each of the saw legs to hold the shanks in their adjusted positions. Motion is transmitted to the four chain wheels on the pivoted frame, through a bevel gear 95 on one of the chain wheels, meshing with a bevel pinion 96 on a shaft 96^a, that carries a pinion 97 held in mesh with a driver gear 70 on the shaft 7, and which receives motion through the chain wheel 71, the endless chain 72 that takes over said wheel 71, and a chain wheel 73 on a stub-shaft 74 on the main framing that has a crank handle 74^a. By reason of the peculiar construction of the main framing as described and shown, the sawing band portion of the endless saw chain can be raised or lowered by adjusting the caster

wheels up or down, and the sawing band can be gradually moved to the work by tilting the frame 6, it being understood that by moving the said frame in the direction of the arrow the bottom or sawing band is held up to the work.

What I claim is:—

1. A saw-band formed as a chain of links, said links being longitudinally slotted at one side, cutting elements having body portions fitted into said slots and including laterally projecting cutters, and means carried by said cutting elements for engaging said links to retain said cutting elements in said slots, and means carried by the cutting elements of one link for projecting under the next adjacent link to hold said band from sagging when in operation.

2. A saw-band consisting of links, each link having a longitudinal slot in one side that opens through one of the ends of the link, and a sawing element for each link, consisting of a U-shaped saw adapted to slip endwise into the link slot, and means for holding the said saw in the slot.

3. A saw-band consisting of links, each link having a longitudinal slot in one side that opens through one of the ends of the link, and a sawing element for each link, consisting of a U-shaped saw adapted to slip endwise into the link slot, and means for holding the said saw in the slot, said saw elements each including a longitudinal extension for projecting under an adjacent link, to hold the said saw from bending downward at the link joints.

JOHN KLINGELE.

Witnesses:

R. T. HOLFORD,

E. C. MARKS.