

June 5, 1923.

1,457,761

J. D. WILSON

TIMBER FELLING APPARATUS

Filed Sept. 19, 1922

3 Sheets-Sheet 1

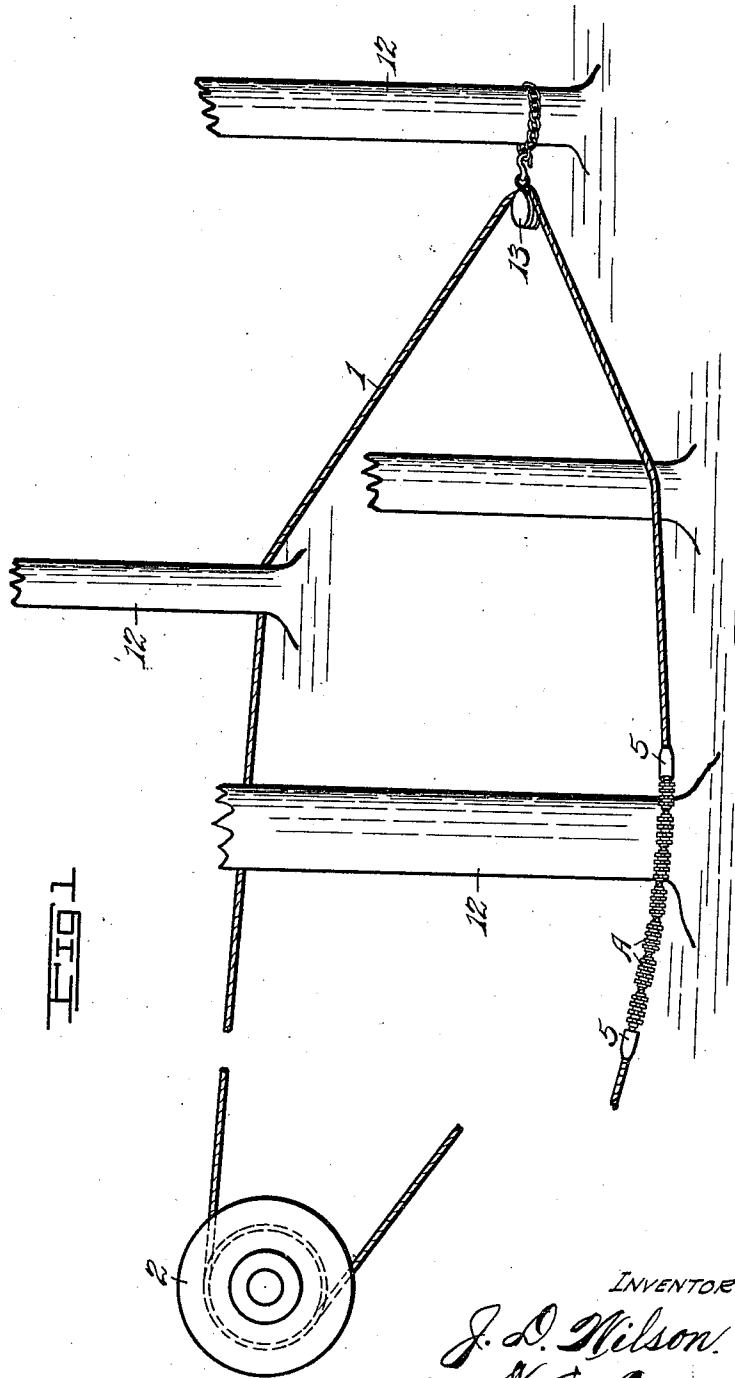


FIG 1

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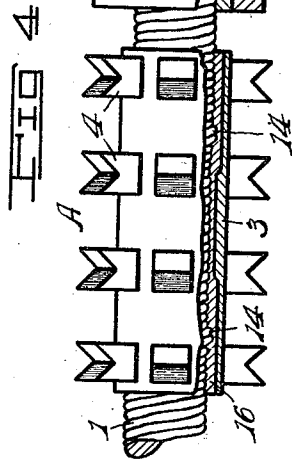
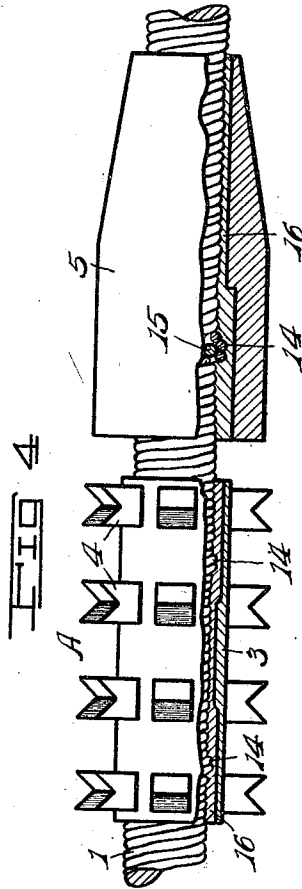
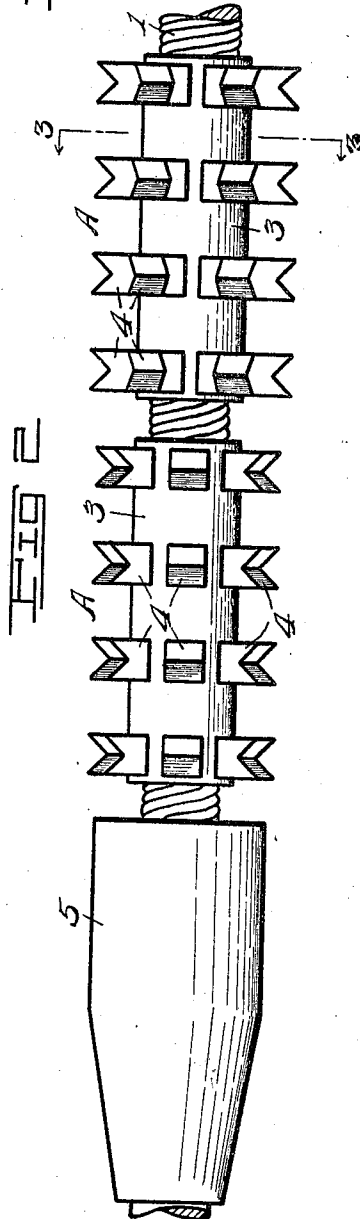
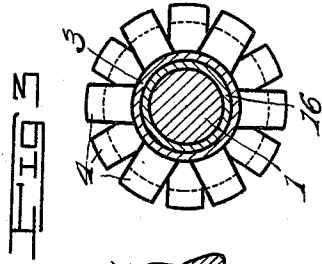
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3 Sheets-Sheet 2



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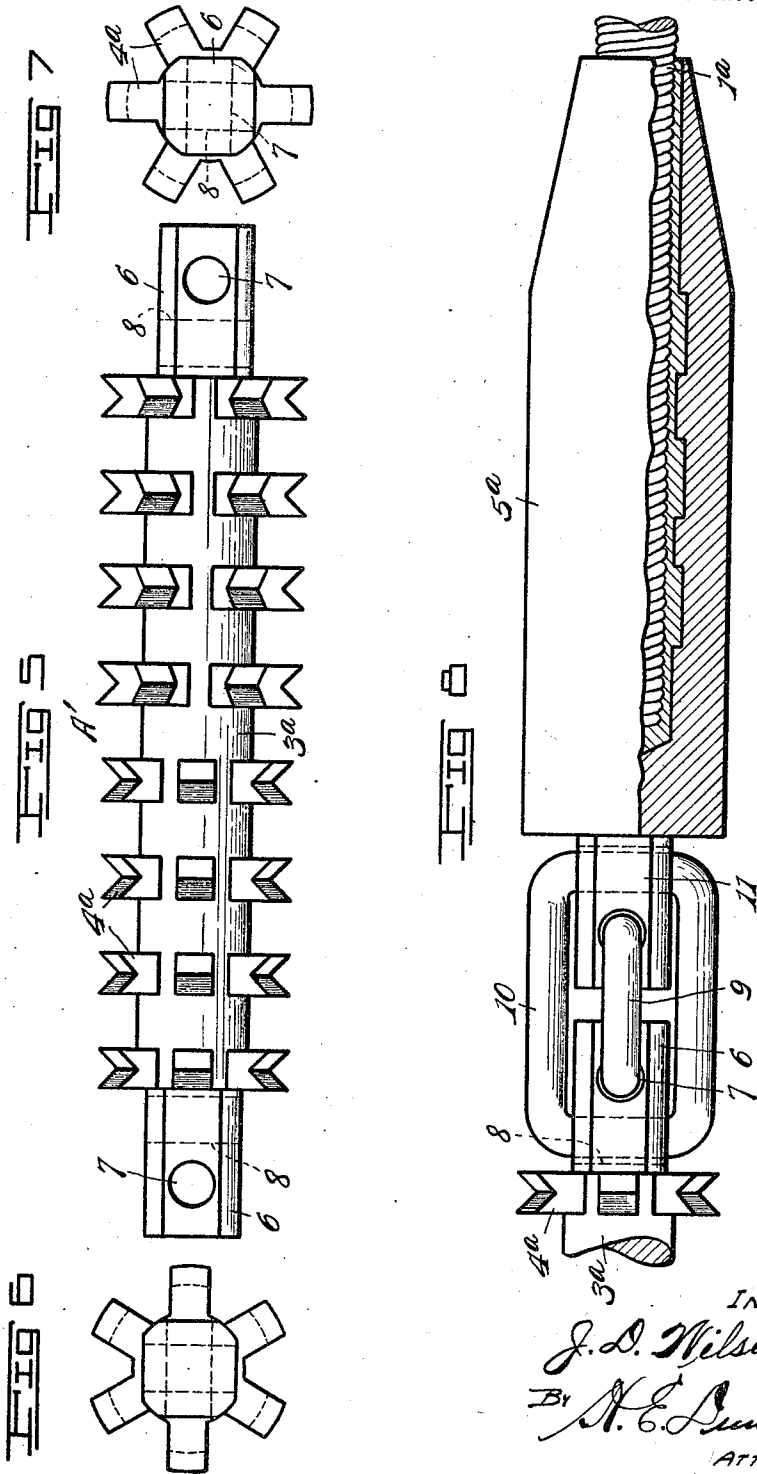
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TIMBER FELLING APPARATUS

Filed Sept. 19, 1922

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

JOHN D. WILSON, OF JACKSONVILLE, FLORIDA, ASSIGNOR OF ONE-HALF TO F. H. GARNER, OF UNION, SOUTH CAROLINA.

TIMBER-FELLING APPARATUS.

Application filed September 19, 1922. Serial No. 589,051.

To all whom it may concern:

Be it known that I, JOHN D. WILSON, a citizen of the United States of America, and resident of Jacksonville, county of Duval, and State of Florida, have invented certain new and useful Improvements in Timber-Felling Apparatus, of which the following is a specification.

This invention relates broadly to tree-felling apparatus, and more specifically to a sawing mechanism for use in timber-felling operations.

The primary object of the invention is to provide a power-driven apparatus, designed especially for use in conducting extensive timber-felling operations, by means of which trees included in relatively large areas may be felled successively without shifting of the power mechanism.

A further object is to provide a sawing apparatus by means of which the felling of timber may be accomplished expeditiously and with a minimum of manual manipulation.

A still further object is to provide in a device of the character mentioned, a saw structure which is particularly efficient in the cutting of timber.

With these and other objects in view, the invention resides in the features of construction, arrangement of parts and combinations of elements which will hereinafter be fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a view illustrating the application of the invention;

Figure 2 is an enlarged side elevation of a length of the saw;

Figure 3 is a section on line 3—3, Fig. 2.

Figure 4 is a view of the same partly in longitudinal section and partly in side elevation;

Figure 5 is a side elevation of one of the sections of a modified form of the saw;

Figures 6 and 7 are opposite end elevations of the same; and—

Figure 8 is a view of the flexible coupling of the saw sections showing one of the latter coupled to a cable connector, said connector being shown partially in longitudinal section.

Referring to said drawings, 1 indicates a flexible cable which has its opposite ends wound upon reversible drums or a drum, as 2, of an engine (not shown) which may be

of the usual skidder type. Carried intermediate the ends of said cable is a saw composed of a plurality of flexibly related sections and which is designed to be forcibly drawn back and forth in engagement with the trunk of a standing tree for routing its way through said trunk.

In the form illustrated in Figs. 1 to 4, the saw is composed of a plurality of sections designated generally by the reference character A. Each of said sections comprises a cylindrical sleeve 3 of metal, preferably tool steel, having integral radially extending teeth 4 arranged in annular rows and constituting spike-like cutters or router teeth. Said sections are preferably made of short length, as about three inches, and are employed in the required number to form a saw of suitable length, and spaces of relatively short length, as about one-half inch, are provided between the adjacent sections to allow the cable upon which said sections are mounted to bend to the extent that any required degree of angularity between adjacent sections may be assumed.

The said sections of the saw are mounted rigidly upon the cable in any suitable manner. As shown in Fig. 4, the opening through the sleeve 3 is made of relatively increased diameter at and adjacent to its opposite ends and a filling 16 of a suitable metal, as babbitt, poured while molten into the space between said sleeve and the cable, serves to secure the saw section against movement on said cable. Similarly, a member 5 is mounted upon the cable adjacent to each end of the saw, said member being of conical form and designed to deflect the ends of said saw to positions wherein, when the cable is being rapidly advanced in either direction in contact with a tree trunk, only the ends of the teeth will engage said trunk, thus obviating the violent and damaging impacts which would result from the broad-side striking of the ends of the saw against such trunk. To further secure said saw sections and the deflecting members 5 to the cable, swells 14 may be formed on the latter by introducing beneath the outer strands thereof slugs of metal 15, said swells being embedded in the babbitt or other filling material 16.

Adjacent saw sections are preferably disposed with the teeth thereof in staggered relation for facilitating the cutting, it being

designed that, through the thereby-produced kerf, the operating teeth of each saw section shall rout out the space or spaces omitted by the longitudinal rows of teeth of the section next in advance thereof.

In the modification illustrated in Figs. 5 to 8, the saw constitutes a splice or coupling for the adjacent ends of a cable 1^a and is composed of coupled sections A' which are not directly mounted upon the cable. Each section A' comprises a cylindrical body 3^a having teeth 4^a. Said body has a stem portion 6 formed on each end thereof, and provided in said stem are two round diametrically disposed holes 7 and 8 which are directed at right angles to each other. Said holes have received therein the ends of links 9 and 10 which together constitute a universal coupling between adjacent saw sections A' and also between the end sections and stems 11 formed upon the ends of conical members 5^a which are attached to the cable 1^a.

In practice, the cable having its ends wound upon the drum or drums of the engine or other power mechanism is initially disposed, as shown in Fig. 1, to encircle a definite area of operation within which may be located numerous trees 12 to be felled and with the saw located in a position to be drawn back and forth with respect to one or more of the area-enclosed trees with the reciprocatory movements of the cable effected by operation of said drum or drums. The cable is either passed around trees located on the border of said area, or, in order to reduce frictional resistance, it may be passed over pulleys 13 attached to said trees, as shown at the right in Fig. 1. As trees are felled, the area of operation is reduced gradually until all the timber within the same has been prostrated, the working position of the saw being shifted from time to time as required to effect proper positioning thereof.

What is claimed is—

1. Timber felling apparatus comprising, in combination with the reversible cable-

winding drums of a power mechanism, a cable having its ends wound on said drums, and a saw carried by said cable, said saw being formed of a plurality of members arranged to allow relative angular adjustment, each member being of cylindrical form and having radially disposed teeth.

2. Timber felling apparatus comprising, in combination with the reversible cable-winding drums of a power mechanism, a cable having its ends wound on said drums, said cable being adapted to enclose a timber bearing area, a saw interposed in said cable, said saw being formed of a plurality of flexibly related cylindrical sections having radial teeth, and conical deflecting members located adjacent to the end sections of the saw.

3. In timber felling apparatus, a flexible cable, and a saw carried by said cable, said saw comprising a plurality of sleeve members fixed on said cable, and teeth formed annularly on said members.

4. In timber felling apparatus, a flexible cable, and a saw carried by said cable, said saw comprising a plurality of sleeve members fixed on said cable, said members being located in spaced relation to allow relative angular adjustment thereof, each member being cylindrical in form and carrying radial annularly disposed teeth.

5. In timber felling apparatus, a flexible cable, and a saw carried by said cable, said saw comprising a plurality of sleeve members fixed on said cable, said members being located in spaced relation to allow relative angular adjustment thereof, each member being cylindrical in form and carrying radial annularly disposed teeth, and conical members carried by said cable adjacent to the opposite end members of said saw.

In testimony whereof, I affix my signature in presence of two subscribing witnesses.

JOHN D. WILSON.

Witnesses:

GEO. M. PARKER,
REGINALD J. MILLER.