May 5, 1953 L. W. JOHNSON ET AL 2,637,357

HAND-GUIDED AND CHAIN-DRIVEN BARK REMOVING TOOL

Filed Aug. 30, 1951 2 SHEETS--SHEET 1

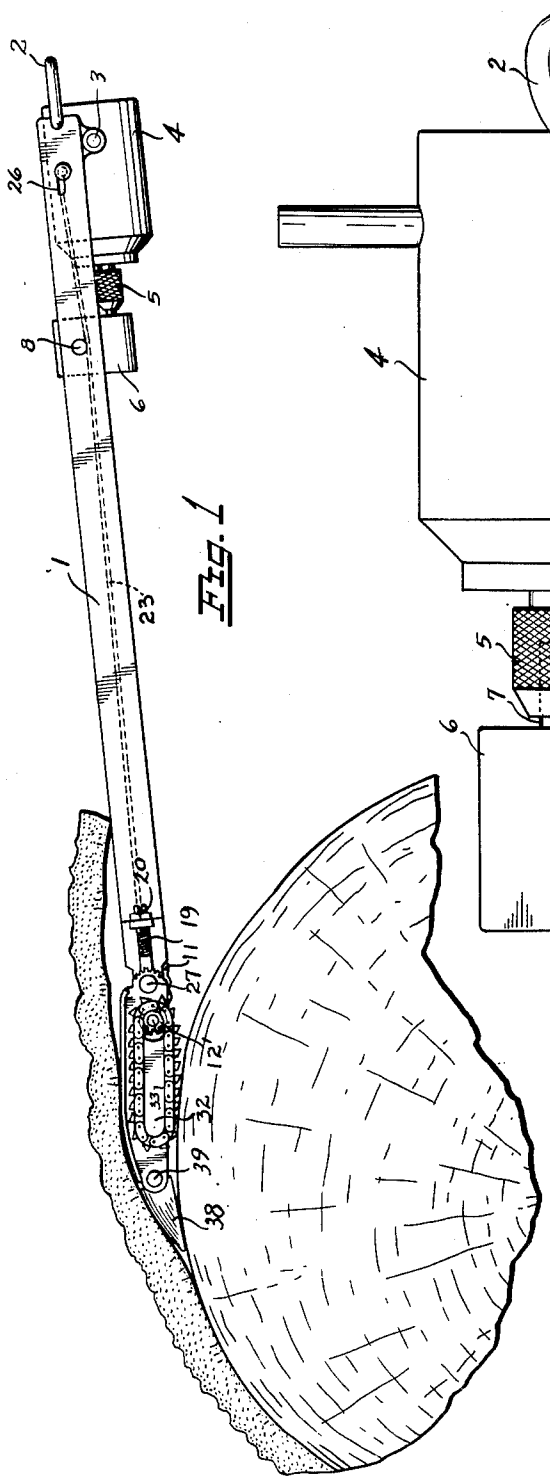


Fig. 1

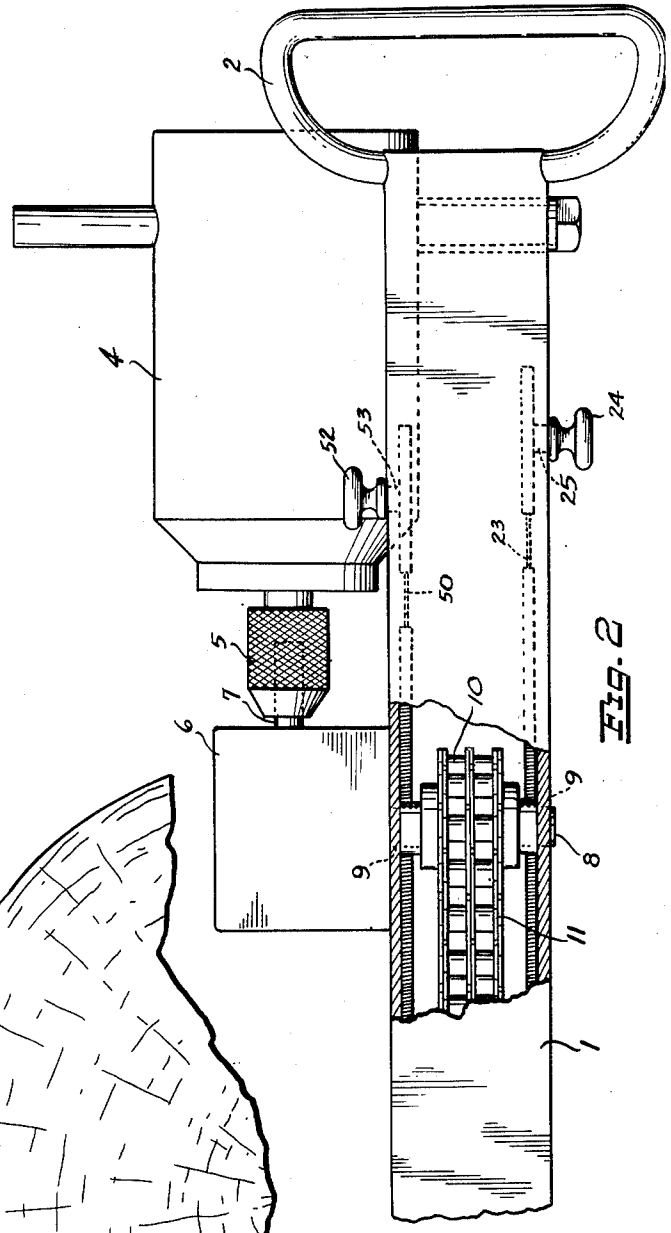


Fig. 2

LOUIS W. JOHNSON
WILLIAM G. SAUNDERS
INVENTORS

BY James A. Finnan
ATT'Y

May 5, 1953 L. W. JOHNSON ET AL 2,637,357

HAND-GUIDED AND CHAIN-DRIVEN BARK REMOVING TOOL

Filed Aug. 30, 1951 2 SHEETS--SHEET 2

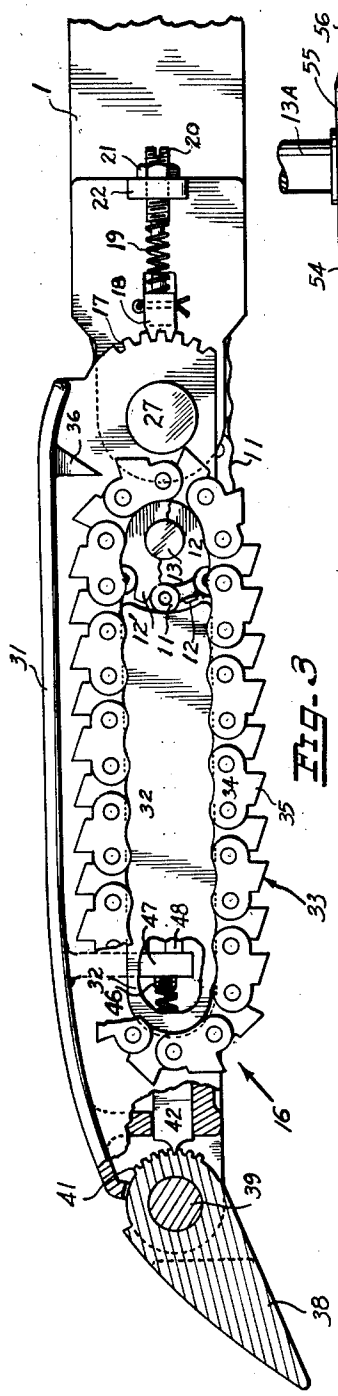


Fig. 3

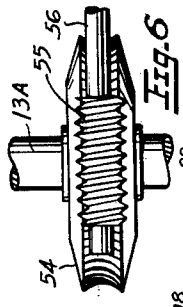


Fig. 6

Fig. 4

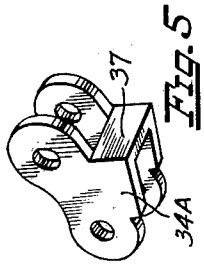


Fig. 5

INVENTORS
LOUIS W. JOHNSON
WILLIAM G. SAUNDERS
BY James R. Sinnau
ATTY

Patented May 5, 1953

2,637,357

UNITED STATES PATENT OFFICE

2,637,357

HAND-GUIDED AND CHAIN-DRIVEN BARK-REMOVING TOOL

Louis W. Johnson and William George Saunders, Eugene, Oreg.; said Saunders assignor to said Johnson

Application August 30, 1951, Serial No. 244,366

4 Claims. (Cl. 144—208)

1

This invention relates to improvements in log peelers adapted for peeling bark from redwood logs or any other specie of logs provided with a thick bark. Before redwood logs can be sawed economically at the mill the bark must be removed, preferably in the woods. Heretofore the bark peeling operation was accomplished by the use of axes, wedges, crowbars and other prying tools and also blocks to hold the peeled back away from the log as the peeling operation progressed. These operations have always been slow and tedious and required many hours of work on each log by several operators and their assistants.

Accordingly, it is one of the principal objects of our invention to provide a lightweight, durable and inexpensive power driven log peeling device which may be conveniently operated by a single operator to peel the bark from a log in much less time than that required by the conventional method above pointed out.

A further object of the invention is the provision of a device of this character which may be readily adapted to and operated by various types of prime movers used in the logging industry in the woods such as electric motors driven by portable electric generator sets driven by gas engines or the device could be operatively connected to a low powered gasoline engine, or to a source of steam or air pressure.

A further object is to provide a self-guiding and lockable point or leading end of the tool which will automatically adjust itself into conformity with the contour of the log being dealt with and also a handle which may be conveniently arranged and locked in any desired angular relation to said leading end of the tool.

A still further object is the provision of a log peeler of this type wherein its several parts are protected against damage in operation but at the same time readily accessible for repair, adjustment or replacement and also wherein the operator is protected from the moving parts of the device regardless of where the device may be gripped at any time during its normal operation.

A still further object is the provision of means for automatically preventing the accumulation of wooden chips between the teeth of the traction elements of the device.

These and other objects will appear as our invention is more fully hereinafter described in the following specification, illustrated in the accompanying drawings and finally pointed out in the appended claims.

In the drawings:

Figure 1 is a side elevation of a log peeler made

2

in accordance with our invention and shown in the process of removing bark from a log.

Figure 2 is an enlarged fragmentary top plan view of Figure 1 with a fragment broken away for convenience of illustration.

Figure 3 is an enlarged fragmentary side elevation of the invention with fragments broken away and parts in section for convenience of illustration.

Figure 4 is a bottom plan view of Figure 3 with a fragment broken away.

Figure 5 is a perspective detail view of a typical modified form of link used with the tractor unit.

Figure 6 is a modified form of power transmission means.

Referring now more particularly to the drawings:

In Figure 1 reference numeral 1 indicates the main body of the invention in the form of an elongated handle terminating at one of its ends in any approved type of hand grip 2. To this end of the handle we secure by means of one of its handles and a nut 3, an electrical motor of suitable horsepower and of the type ordinarily used for power drills and the like and provided with a chuck 5. The handle 1, which is of hollow tubular form, may be of square or oval formation in cross section. To one side of the handle we secure a housing 6 for a power transmission means comprising the usual reduction gears (not shown) driven by a shaft 7 engaged with the motor 4 by means of the chuck 5 and which drives a driven shaft 8 at a greatly reduced speed. The shaft 8 is journaled as at 9 in the side walls of the tubular handle. To the shaft 8 we secure a single or double sprocket wheel 10 embraced by one end of a sprocket chain 11 whose opposite end embraces and drives a driven sprocket wheel 12 secured to a shaft 13 journaled as at 14 near one end of parallel frame members 15 of a head generally indicated at 16. This said one end of the frame members are formed on a radius as best illustrated in Figure 3 and provided with gear teeth 17 adapted to be engaged by pawls 18 interconnected by a bar 18A so that they may be moved as a unit into and out of engagement with the teeth 17. The pawls are normally held in engagement with said teeth by means of compression springs 19 whose forward ends bear against the pawl and whose opposite ends bear against adjusting screws 20 lockable by means of lock nuts 21 to internally threaded projections 22 formed integral with or otherwise secured to the handle. A control cable 23 slidably mounted within the handle 1 is secured at one of its ends to the bar 18A as at 23'

(Fig. 4) for pulling the pawls out of engagement with said gear teeth 17 when it is desired to change the angular relation of the handle to the head 16. The opposite end of this control cable terminates in an actuating knob 24 whose stem 25 is movable lengthwise within a slot 26 formed in the handle for actuating said pawls. The handle 1 is pivotally attached as at 26A to the frame members 15 of the head 16 by means of a shaft 27 extending through and secured to said frame members.

The head 16 is made up of the frame members 15, as aforesaid, cast integral with cross members 28, 29 and 30 and with a slip-plate 31 which is of greater width than the distance across the frame members. Cast integral with or secured to the sides of the frame members 15 and in spaced relation thereto are two vertical plates 32 which serve as rails for traction chains generally indicated at 33. The traction chains slidably embrace the rails and are driven by the sprocket wheels 12', 12' on the ends of shaft 13, which carries sprocket wheel 12 which is driven by the motor 4 through the medium of the sprocket chain or chains 11 as aforesaid. Each chain is made up of a plurality of pivotally interconnected links either of the form shown in Figure 3 or that shown in Figure 5. Each link in the form of traction chain shown in Figure 3 comprises two parallel side plates 34 formed with projections 35 pointed at one of their ends and adapted to engage with a log beneath the bark and to force the head forwardly as the peeling operation progresses. When this type of link is used in the traction chain we provide means in the form of a tooth or downwardly extending blade 36 arranged centrally of the projections 35 of the links so that any chips or wood particles lodged between the plates of the links will be dislodged therefrom.

When the modified form of link, as shown in Figure 5, is used we dispense with the cleaning blades 36 for the reason that the extensions 34A are interconnected across their leading ends by a web 37 which, of course, will prevent the entrance of wood or chip particles into the space between said extensions.

To the forward end of the head 16 we provide a self-adjusting wedge-shaped tip 38 pivotally attached to the side members 15 of the frame by means of a shaft 39 journaled within the frame as at 40. The rear surface of the tip is formed with gear teeth or serrations 41 adapted to be selectively engaged by a pawl 42 slidably mounted within aligned openings 43 and 44 in the cross members 28 and 29, respectively, of the frame. The pawl is normally forced forward into engagement with the teeth 41 by a compression spring 45 whose one end bears against the rear surface of the pawl and whose opposite end bears against an adjusting screw 46 carried by an arm 47 and lockable thereto by a lock nut 48. The opposite end of the arm is secured to the housing 49 of a control wire 50 whose one end is attached as at 51 to the pawl and whose opposite end is attached to an actuating knob 52 (see Fig. 2) whose stem 53 is slidable in a slot formed in the side wall of the handle 1.

In the modified form of driving mechanism illustrated in Figure 6 we provide the traction chain driving shaft 13A with a worm gear 54 operatively engaged and driven by a worm 55 secured to or formed on one end of a drive shaft 56 whose opposite end is connected by any approved means to the shaft 8 of the power transmission means and driven thereby at a predetermined rate of speed.

Although we have shown and described the source of power as an electric motor it is to be understood, of course, that any other suitable source of power could be employed, such for instance, as a small gasoline engine of the type used in portable chain saws; a small steam or air motor, or the power transmission means 6 could be connected by a flexible drive shaft to a remotely disposed stationary engine or other suitable power take-off.

Modus operandi.—In order to use the device on a log to be peeled the bark of the log is first split with an ax or other suitable tool in the direction of its length sufficiently to admit the insertion of the tip 38, which is temporarily held in a fixed position by the pawl 42, between the bark and the wood portion of the log. Upon complete insertion of the tip and a portion of the slip plate the tip is released by retracting the pawl 42 so that the tip will be free to follow the contour of the wood and any irregularities therein and to prevent digging into the wood or into the bark. Following this the motor 4 is put into operation which through the medium of the power transmission means 6, the driving and driven sprockets and the sprocket chain will drive the traction chains 33 in the direction of the arrow applied in Figure 3. This movement of the traction chains and the engagement of their links 33 with the cambium layer of the log beneath the bark will force the head 16 forwardly around the log while the tip and the slip plate are prying the bark away from the wood portion of the log. If at any time it becomes necessary or desirable to increase the prying action the operator may or may not stop the action of the traction chain and swing the handle outwardly from the log whereupon the head 16 will become the fulcrum for the applied leverage.

We claim:

1. A log peeling tool comprising in combination an elongated handle, power transmission means attached to one end of the handle, a substantially wedge-shaped head adjustably attached to the opposite end of the handle and lockable in various angular positions in relation to said handle, traction means carried by the head and interconnected with said power transmission means for driving the head between the bark and the wood of a log being peeled.

2. A log peeling tool as in claim 1 including a tip swingably and lockably attached to the forward end of said head so as to follow the contour of the wood and any irregularities therein as the peeling operation progresses.

3. A log peeling tool comprising in combination an elongated hollow tubular handle, power transmission means attached to one end of the handle, a head swingably attached to the opposite end of the handle, means carried by the handle and engagable with the head for locking the handle in any adjusted angular relation to the head, said head comprising a frame, and a top wall in the form of a slip plate curved forwardly and downwardly at its forward end, a tip swingably and lockably attached to the forward end of said head, traction means carried by said head and comprising a plurality of endless traction chains, said chains being operatively connected with said power transmission means by means extending through said handle, each of said chains being made up of a plurality of pivotally interconnected links having parallel teeth

arranged on both of their sides for engagement with the wood beneath the bark of a log being peeled, and for driving said head forwardly during a peeling operation, and means formed within the head and disposed between said parallel teeth for dislodging wood chips and the like from between said teeth.

4. A log peeling tool comprising in combination an elongated hollow tubular handle, power transmission means attached to one end of the handle, driving means disposed on the interior of the handle and connected with said power transmission means, a head, means formed on one end of the head for pivotal attachment to the opposite end of said handle and for locking said head in angular relation to said handle, said head comprising a frame consisting of parallel side members and spaced apart interconnecting cross members all formed integral with a slip plate extending throughout the length of the head and being curved forwardly and downwardly at the forward end of the head, endless traction chains rotatably mounted to both sides of said frame, means disposed within the frame and connected to said chains for operating the same and operatively connected to said driving means within the handle, a forwardly tapering

tip pivotally attached to the forward end of said head as a continuation of said forwardly downwardly curved portion of the head, spring-urged means movable within the head and controllable from said first mentioned end of the handle for selective engagement with said tip for locking the tip in various angular positions with respect to said head, each of said chains consisting of a plurality of pivotally interconnected links each formed with parallel side plates having pointed extensions formed thereon, means carried by the head and disposed between the extensions of the plates of the links and adapted to dislodge wood chips or particles accumulating between said plates.

LOUIS W. JOHNSON.
WILLIAM GEORGE SAUNDERS.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,558,735	McArthur	Oct. 27, 1925

FOREIGN PATENTS

Number	Country	Date
541,950	Germany	Jan. 16, 1932