Feb. 15, 1949. C. J. ROBERTSON 2,461,924

IMPACT TYPE LOG PEELER

Filed Nov. 27, 1945 5 Sheets-Sheet 1

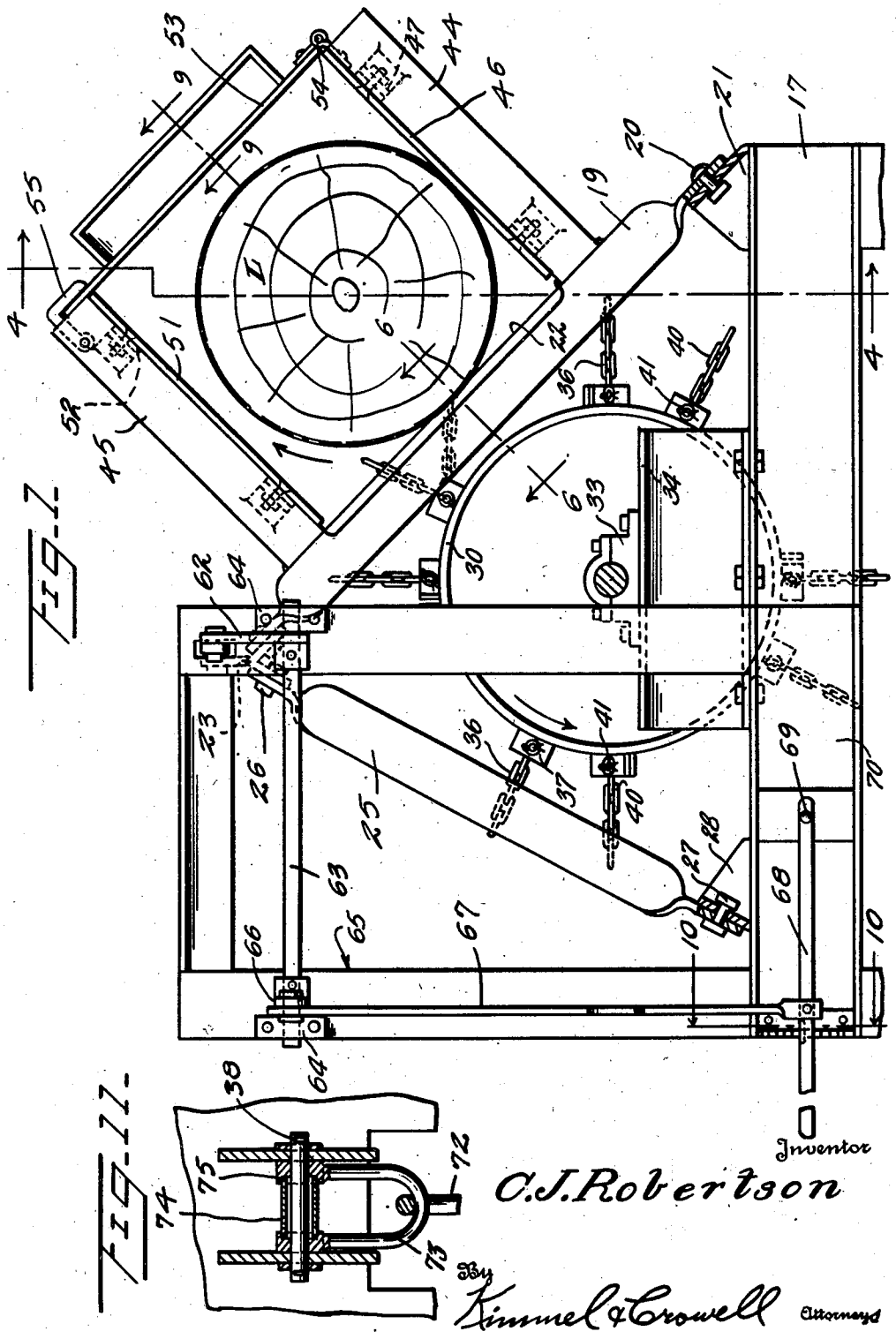


FIG. 1.

FIG. 11.

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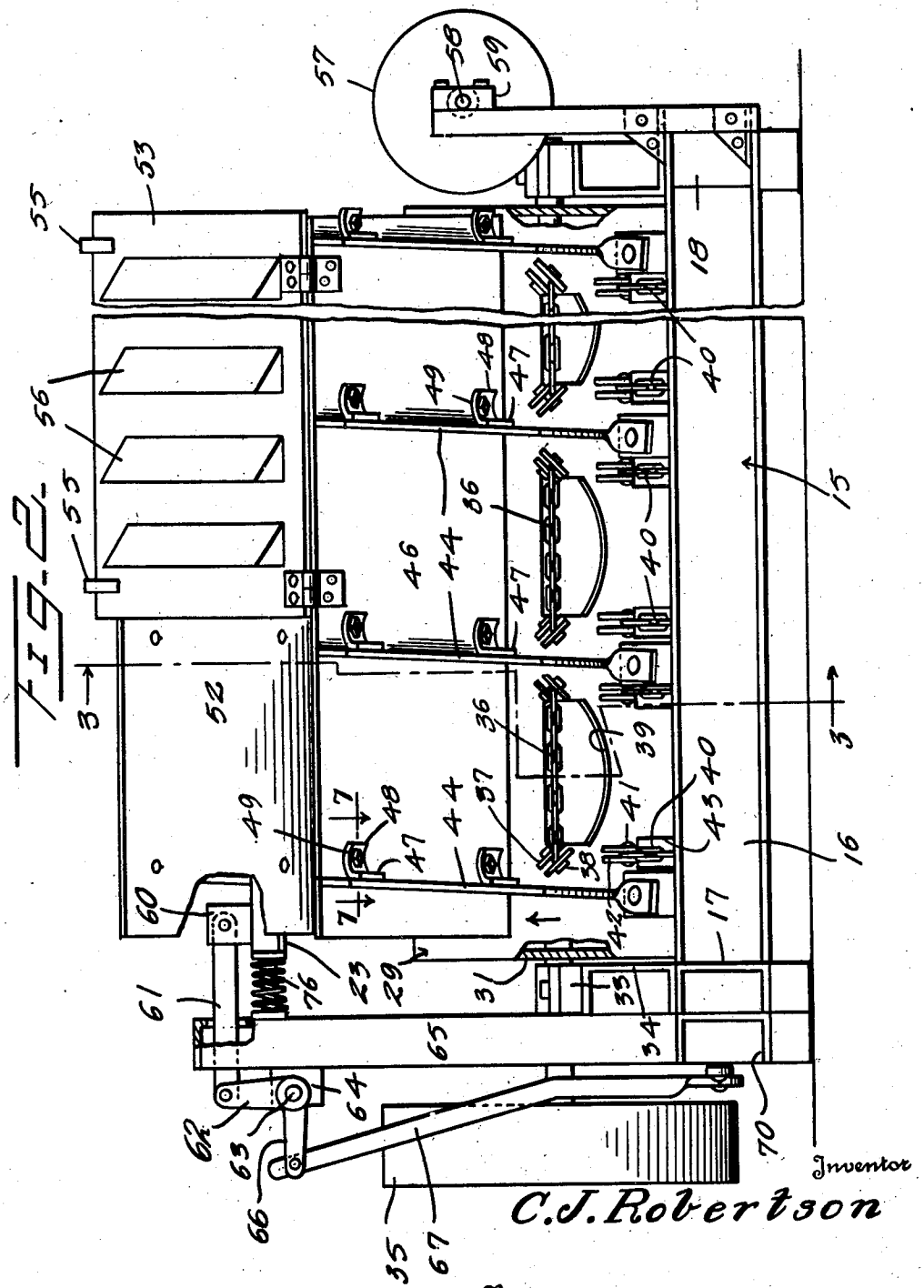
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Feb. 15, 1949. C. J. ROBERTSON 2,461,924

IMPACT TYPE LOG PEELER

Filed Nov. 27, 1945 5 Sheets-Sheet 2

FIG. 2.



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Feb. 15, 1949. C. J. ROBERTSON 2,461,924

IMPACT TYPE LOG PEELER

Filed Nov. 27, 1945 5 Sheets-Sheet 3

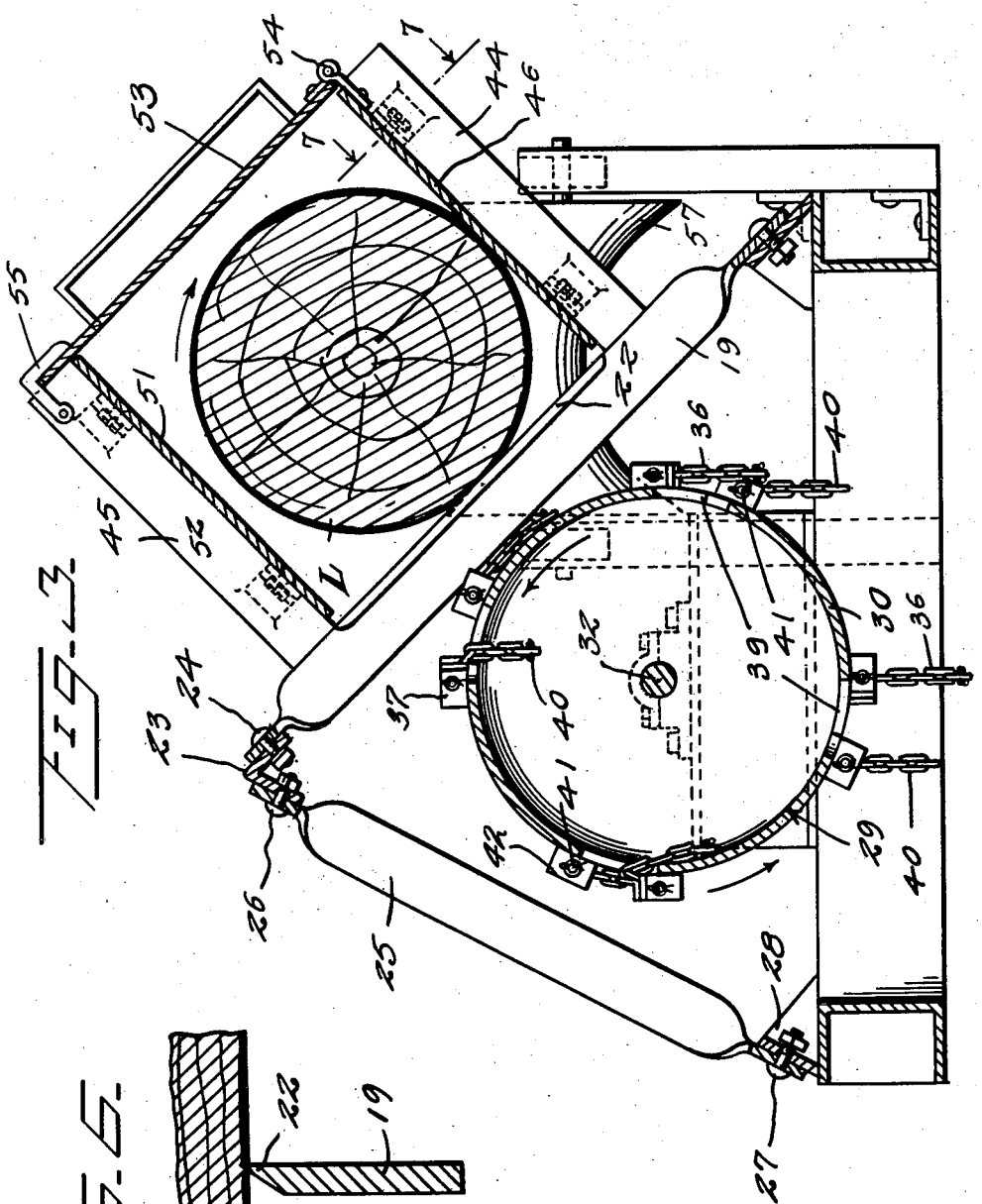


FIG. 3.

FIG. 6.

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Feb. 15, 1949. C. J. ROBERTSON 2,461,924

IMPACT TYPE LOG PEELER

Filed Nov. 27, 1945 5 Sheets-Sheet 4

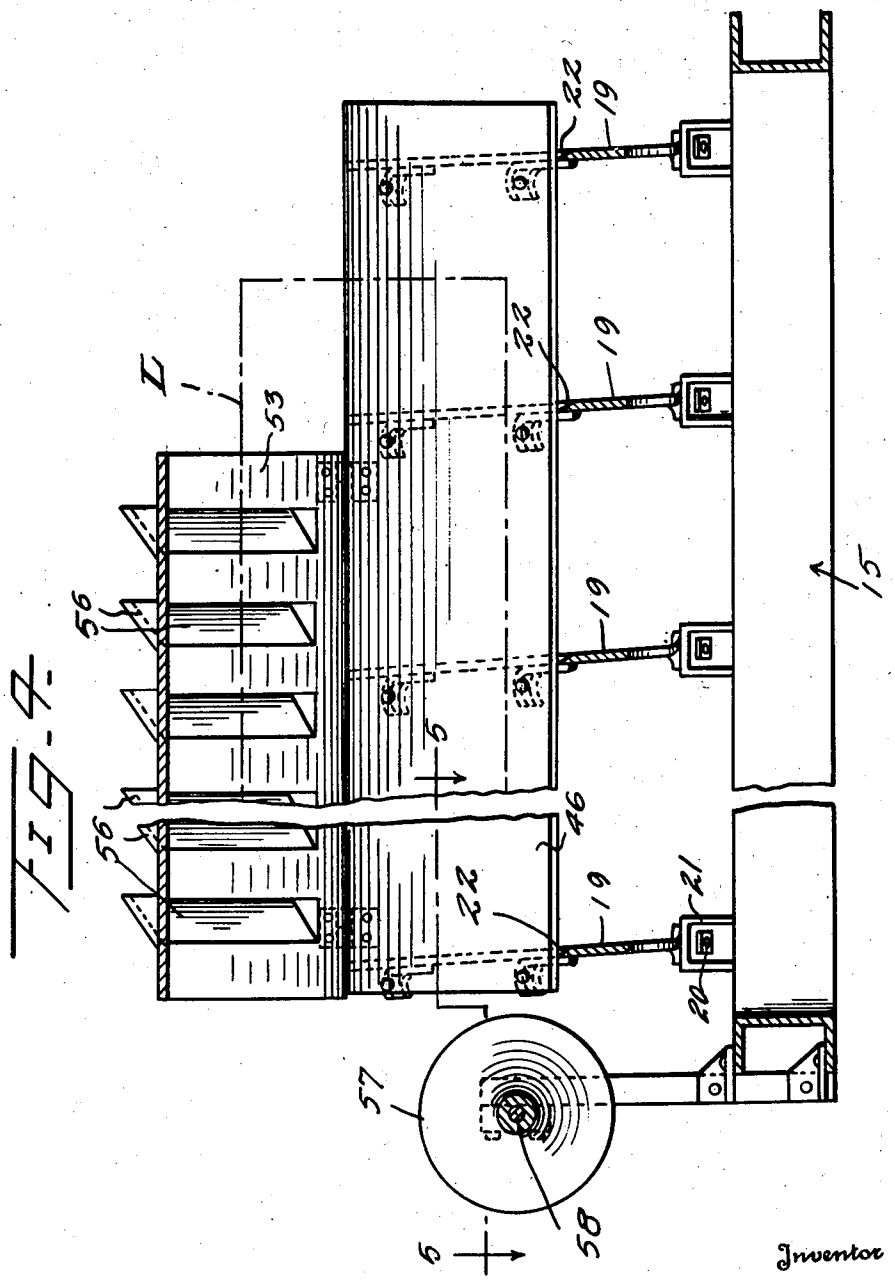


FIG. 4.

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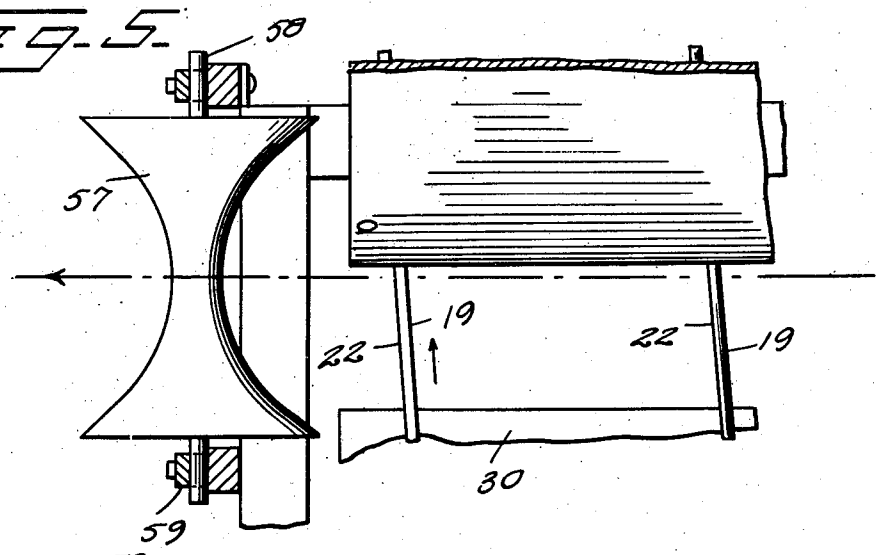
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Feb. 15, 1949. C. J. ROBERTSON 2,461,924

IMPACT TYPE LOG PEELER

Filed Nov. 27, 1945 5 Sheets-Sheet 5

Fig. 5.



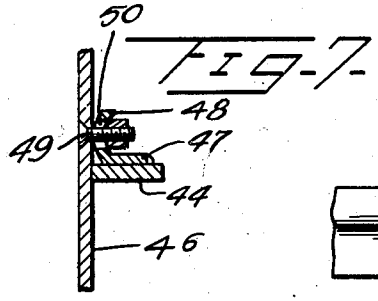


Fig. 7.

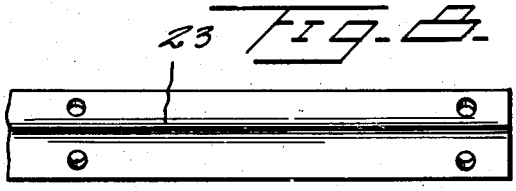
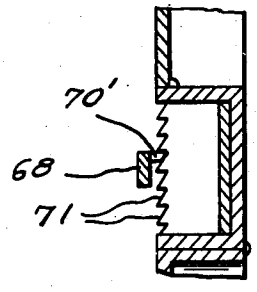


Fig. 8.

Fig. 10.



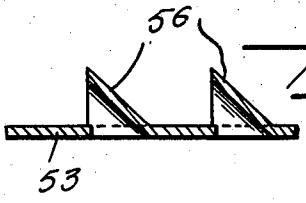


Fig. 9.

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2,461,924

IMPACT TYPE LOG PEELER

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Application November 27, 1945, Serial No. 631,025

4 Claims. (Cl. 144—208)

1

This invention relates to a means for removing the bark from logs.

An object of this invention is to provide apparatus for debarking logs which will cleanly remove the bark irrespective of irregularities in the surface of the log and which will automatically move the log endwise as the bark is removed.

Another object of this invention is to provide a bark removing machine wherein the bark is removed by impact of rotatably mounted flexible members which will initially soften and pulverize the bark and will then remove the bark from the log.

A further object of this invention is to provide an improved method of removing bark wherein the log is subjected to a whipping action caused by rotary flexible members, the whipping action also effecting rotation of the log and endwise movement thereof, the endwise movement being controllable so that the bared surface of the log will not be injured by the debarking members.

A further object of this invention is to provide a device of this kind which will debark logs of various sizes without change in the structure.

To the foregoing objects, and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts, as will be more specifically referred to and illustrated in the accompanying drawings, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a detail end elevation partly in section of a log peeling or debarking machine constructed according to an embodiment of this invention,

Figure 2 is a detail side elevation of the machine,

Figure 3 is a sectional view taken on the line 3—3 of Figure 2,

Figure 4 is a sectional view taken on the line 4—4 of Figure 1,

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 4,

Figure 6 is a fragmentary sectional view of one of the feeding and log supporting bars taken substantially on the line 6—6 of Figure 1,

Figure 7 is a fragmentary sectional view taken on the line 7—7 of Figure 2,

Figure 8 is a top plan of the frame bar supporting the log feeding and supporting bars,

Figure 9 is a fragmentary sectional view taken on the line 9—9 of Figure 1,

2

Figure 10 is a fragmentary sectional view taken on the line 10—10 of Figure 1, and

Figure 11 is a fragmentary sectional view showing the mounting for one of the whipping chains.

Referring to the drawings, the numeral 15 designates generally a base structure which includes parallel base beams 16 and transverse end beams 17 and 18. The base 15 has extending thereabove a plurality of elongated combined log supporting and log feeding bars 19. The bars 19 are pivotally mounted, as at 20, on angle shaped members 21, which are secured to the longitudinal beam members 16 and these feeding and supporting bars 19 are formed between the end thereof with a keen edge 22 which, as shown in Figure 6, is adapted to cut into the outer surface of a log L. The bars 19 are pivotally secured at their upper or inner ends to an angle shaped ridge bar 23, as indicated at 24. The ridge bar 23 also has pivotally secured thereto the upper ends of upwardly and inwardly inclined supporting bars 25, as indicated at 26.

The supporting bars 25 are pivotally secured, as at 27, at their lower ends to angle members 28 secured to the opposite longitudinal beam members 16. The feeding bars 19 are upwardly and inwardly inclined, as shown in Figures 1 and 3, and form a substantially triangular space within which a whipping drum 29 is rotatably mounted. The drum 29 includes a cylindrical side wall 30 and end walls 31, which are secured to a drum shaft 32. The shaft 32 is rotatably carried by bearings 33 which are disposed above the end frame or base members 17 and 18, preferably being supported on upper transverse channel members 34. A drive pulley 35 (see Figure 2) is secured to the rear end of the shaft 32 and is adapted to be connected by a belt or other suitable driving means to a power source whereby the drum 29 may be rotated at the desired speed. The drum 29 has mounted on the outer surface thereof a plurality of circumferentially spaced apart chains or whipping members 36. The chains 36 are secured at each end to outwardly extending ears 37 which are carried by the side wall 30 of the drum and a pin 38 extends through the end link of each chain 36 and engages through the ears 37. The chain 36 forms a loop which upon rapid rotation of the drum 29 is adapted to swing straight outwardly and to thereby engage the bark which is on the outer surface of the log L supported on the feeding bars 19.

The side wall 30 of the drum is formed with an elongated opening 39 adjacent each chain 36 so that the chain may engage within the drum par-

ticularly when the drum is stationary. The drum also has swingably mounted on the outer surface thereof a plurality of short lengths of chain 40. The chains 40 are disposed one adjacent each end of the looped chains 36 and one end of each chain 40 is pivotally mounted on a pin 41 extending between a pair of ears 42 which are fixed to the outer side of the drum. The drum is also formed with an opening 43 adjacent each short chain 40 so that the end of this chain 40 may drop interiorly of the drum when the latter is stationary as shown in Figure 3. The feeding and supporting bars 19 have fixed thereto spaced apart upright bars 44 and 45. The bars 44 are at the lower end portions of the feeding bars 19 and have secured thereto a plate 46 forming the lower wall of a support for the log when the latter engages on the feeding bars 19.

The bars 44 have secured to one side thereof bracket members 47 having slotted ears 48 through which bolts 49 loosely engage. The bolts 49, as shown in Figure 7, engage through the elongated slots 50 of the lugs 48. As will be hereinafter described, the feeding bars 19 and the bars 44 may be adjusted so as to provide for adjustment of the feeding speed of the log as the latter is rotated by contact therewith by the whipping chains 36 and 40. The upper bars 45 have secured thereto an upper plate or wall 51, the bars 45 having secured thereto bracket members 52 similar to the bracket members 47. A closure plate 53 extends over the upper edges of the walls 46 and 51 being hingedly mounted as at 54 to the lower wall 46 and latched against the upper wall 51 by latching members 55. The top wall 53 is shorter in length than the lengths of the lower and upper walls, as shown in Figure 2, so as to facilitate the placement of a log between the upper and lower walls and on the feeding bars 19.

The cover 53 has formed therewith a plurality of louvers 56 which open forwardly so that any chips or dust generated within the housing formed by the walls 46, 51 and 53 will be directed rearwardly. A grooved wheel 57 mounted on a shaft 58 is journalled in bearings 59 carried by the forward end of the frame structure in a position whereby the log L will engage the wheel or roller 57 as it leaves the housing so that the log freely moves endwise from the open forward end of the housing.

In order to provide for adjustment of the feeding bars 19, I have provided an upwardly extending lug 60 which is carried by the rear end of the ridge bar 23. A link 61 is pivotally connected at one end to the lug or ear 60 extending rearwardly therefrom and pivotally secured to the upper end of an arm or lever 62. The arm or lever 62 is secured to a shaft 63 journalled in bearings 64 carried by an upright rear frame 65. The shaft 63 also has secured thereto an arm or lever 66 disposed at substantially right angles to the arm 62. The upper end of a link 67 is pivotally secured to the rear end of the lever 66 and the lower end of the link 67 is pivotally secured to an adjusting lever 68 pivotally carried, as at 69, on the rear side of a transverse frame beam 70 forming part of the upright frame 65. As shown in Figure 10 the adjusting lever 68 is formed with a tooth 70' engageable with a selected tooth of a vertically disposed rack 71 which is fixedly carried by the lower end portion of the upright frame 65. The lever 68 may be adjusted by moving this member outwardly so as to release the tooth 70' from a selected tooth of the rack 71 and then permitting the lever or operator 68 to resiliently move inwardly to operative position.

In Figure 11 there is disclosed the mounting for the whipping chains. As shown, the end links 72 of the chains engage a clevis 73, which is rockably mounted on a pin or shaft such as pins 38 or 41. A spacer sleeve 74 is disposed between the free ends of the clevis 73 engaging in annular recesses 75 formed in the inner sides of the clevis so that the free ends of the clevis will not be bent inwardly toward each other under any rotating or whipping strain to which the chain may be subjected. A spring 76 is interposed between the rear end of the ridge bar 23 and upright 65 so as to constantly urge bar 23 forwardly and thereby increasing the feeding angle of bars 19.

In the use and operation of this machine the log may initially be partly extended into the rear end of the housing formed by the upper and lower plates or walls 46 and 51. The feeding members 19 may be angularly adjusted so that they will be inclined to the vertical to the desired degree and as shown in Figure 2, the ridge member 23 has a spring 76 bearing against the rear end thereof, the opposite end of the spring 76 bearing against the inner side of the frame 65. The drum 29 is then rotated at a fairly rapid rate so that the chains 36 and 40 will be centrifugally forced outwardly and will contact with the outer surface of the log between the feeding bars 19. As these debarking chains whip against the bark the bark will be pulverized and thrown from the log and at the same time the log will be given rotary movement. As the feeding bars 19 are inclined to the vertical toward the forward end of the apparatus, the log will screw its way forward as it rotates due to the cutting upper edges of the feeding bars which bite into the bark and also bite into the outer surface of the log after the bark has been removed therefrom. It will be understood that these feeding members 19 also provide for cutting of the bark in spiral form as the log is rotated, thereby providing for the removal of the bark in elongated sections or pieces after the bark has been pounded and preventing unduly long strips from being thrown from the log.

The exact configuration illustrated is regarded as the optimum, but some of the desirable results inherent in this disclosure may be obtained by various slight modifications including some departure from the exact configuration shown, and it is therefore requested that the scope of the invention shown be regarded as limited only by the terms of the claims.

What I claim is:

1. A machine for removing the bark from rotating, horizontally positioned and axially advancing logs comprising a base, a plurality of spaced inverted V-shaped log supporting and log feeding members pivotally connected to said base and located at one side of a log being debarked, each inverted V-shaped member lying in a tilted plane which is intersected by the longitudinal axis of the log and which is tilted about an axis containing said pivotal connection and in the direction the log advances, one leg of each inverted V-shaped member being engageable with the periphery of said log to axially feed said log, means mounted on said legs to retain the log in contact therewith; a rotatable member mounted on said base and positioned beneath said inverted V-shaped members and within the angle formed thereby, flexible debarking members mounted on said rotatable member and swingable between

said V-shaped members to pound the bark and thereby rotate the log; an elongated member mounted on said base and connecting the apexes of said inverted V-shaped members, and means to move said elongated member in the direction of its longitudinal axis, thereby to vary the tilt of each inverted V-shaped member and consequently to vary the speed at which said log advances while being rotated by impacts from said debarking members.

2. A debarking machine as set forth in claim 1 wherein the upper edge of said one leg member is formed with a keen edge for biting into the bark of the log.

3. A debarking machine as set forth in claim 1 including a grooved roller rotatably carried by said base at the forward end thereof for guiding the log as it leaves said V-shaped members.

4. A debarking machine as set forth in claim 1 wherein said rotatable member comprises a drum formed with openings adjacent said flexible members whereby said flexible members may rebound into the interior of said drum.

CHARLES J. ROBERTSON.

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