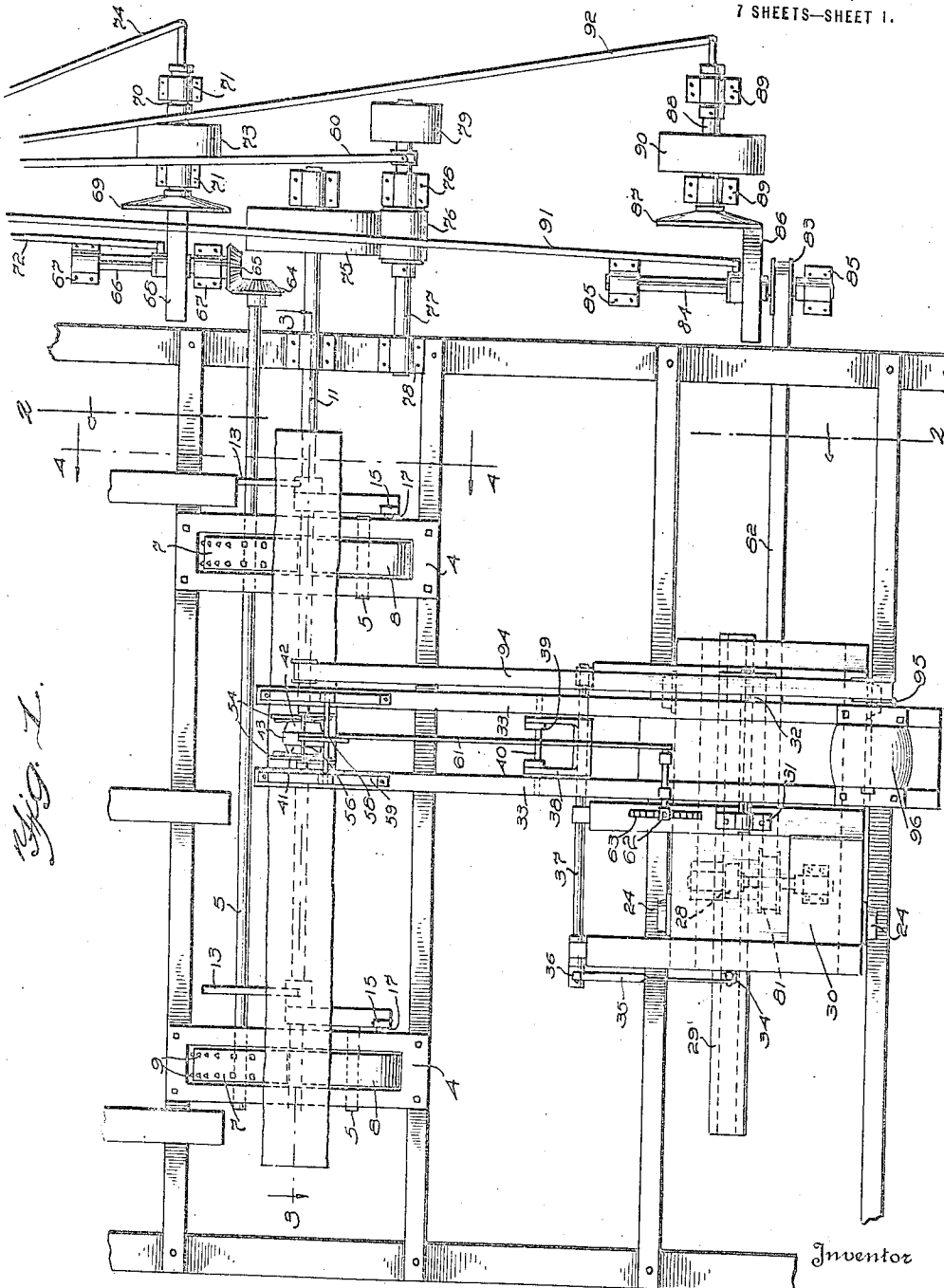


1,379,768.

J. N. LARSON.
LOG PEELER.
APPLICATION FILED JULY 24, 1920.

Patented May 31, 1921.

7 SHEETS—SHEET 1.



Inventor

J. N. Larson.

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Ch. Parker

Attorney

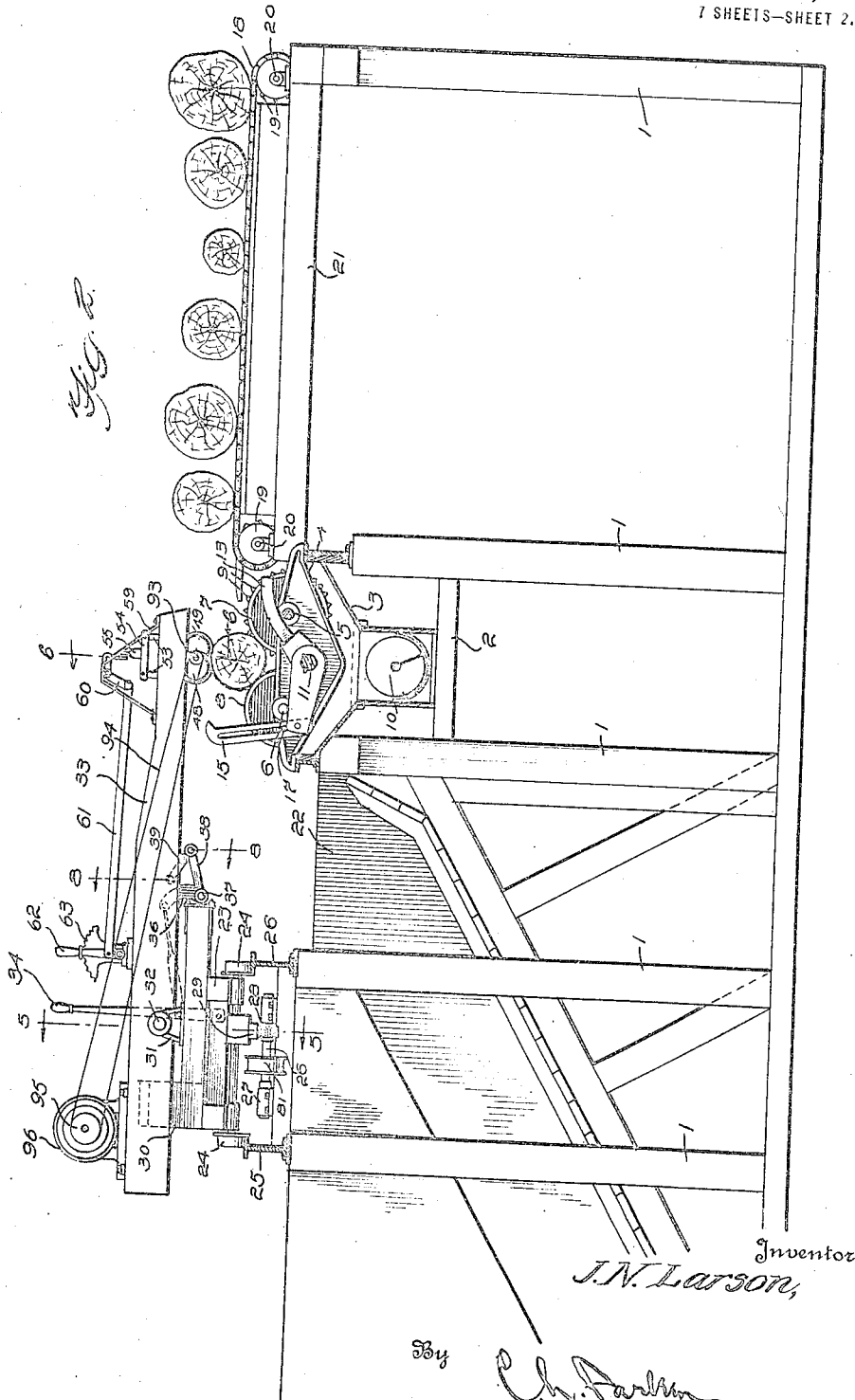
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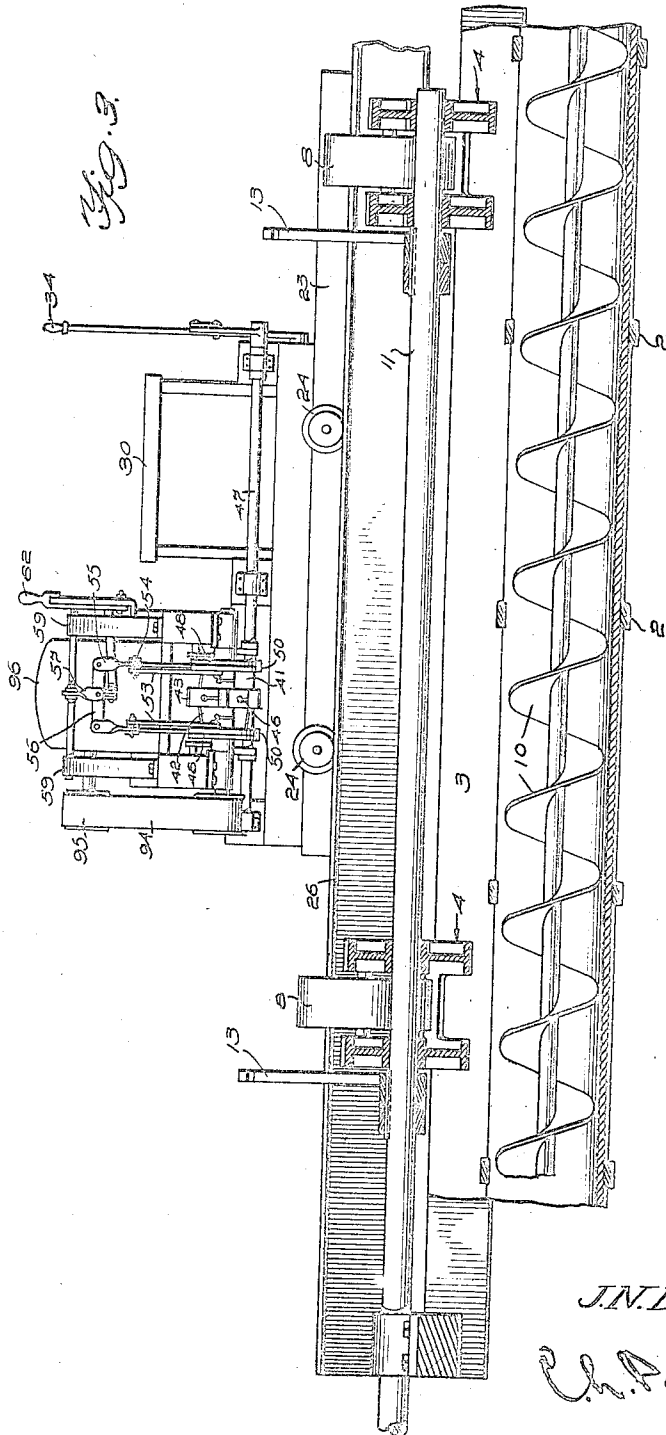
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7 SHEETS—SHEET 3.



Inventor
J. N. Larson,

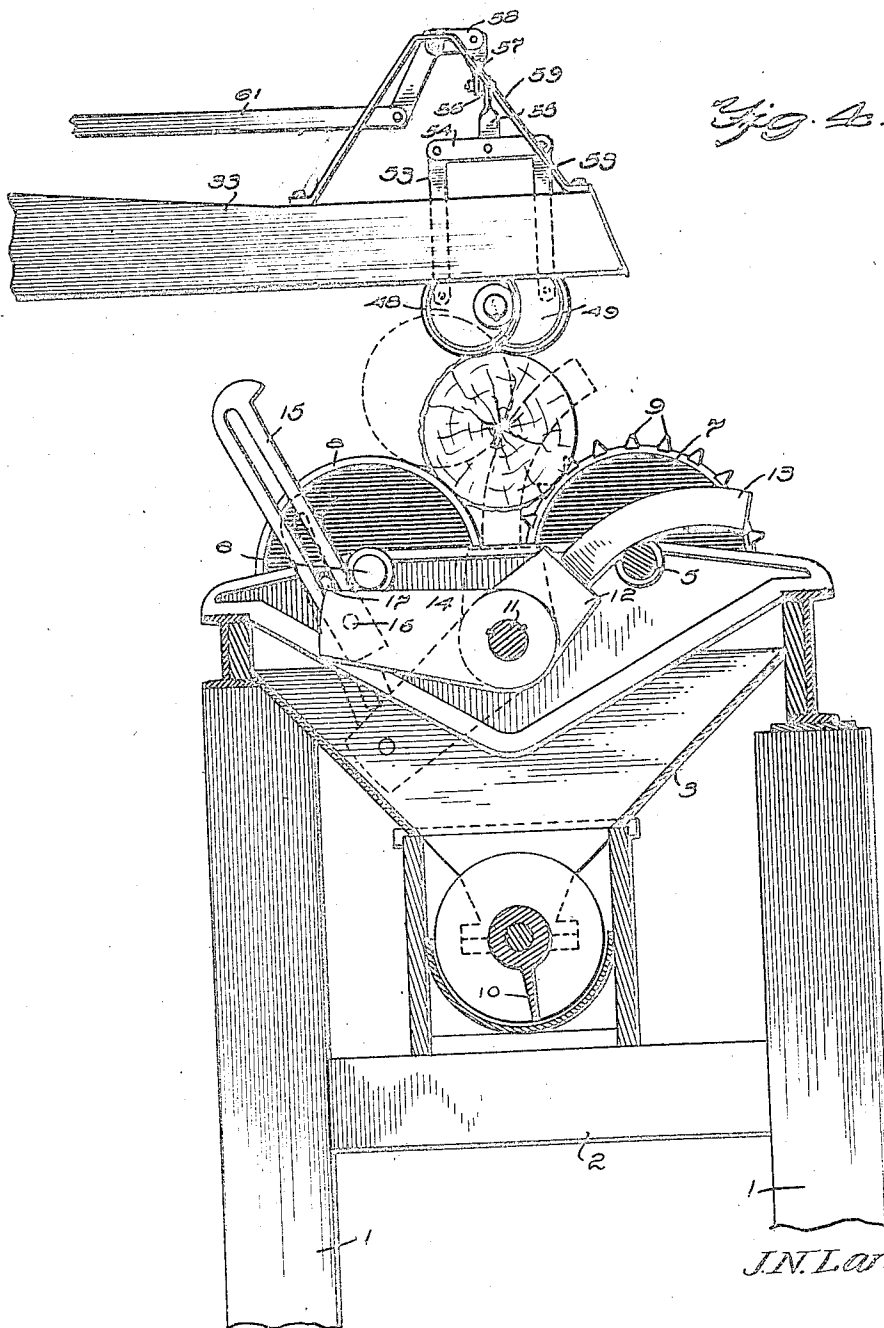
Ch. P. Parker

Attorney

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7 SHEETS—SHEET 4.



Inventor
J. N. Larson

By

Ch. Parker

Attorney

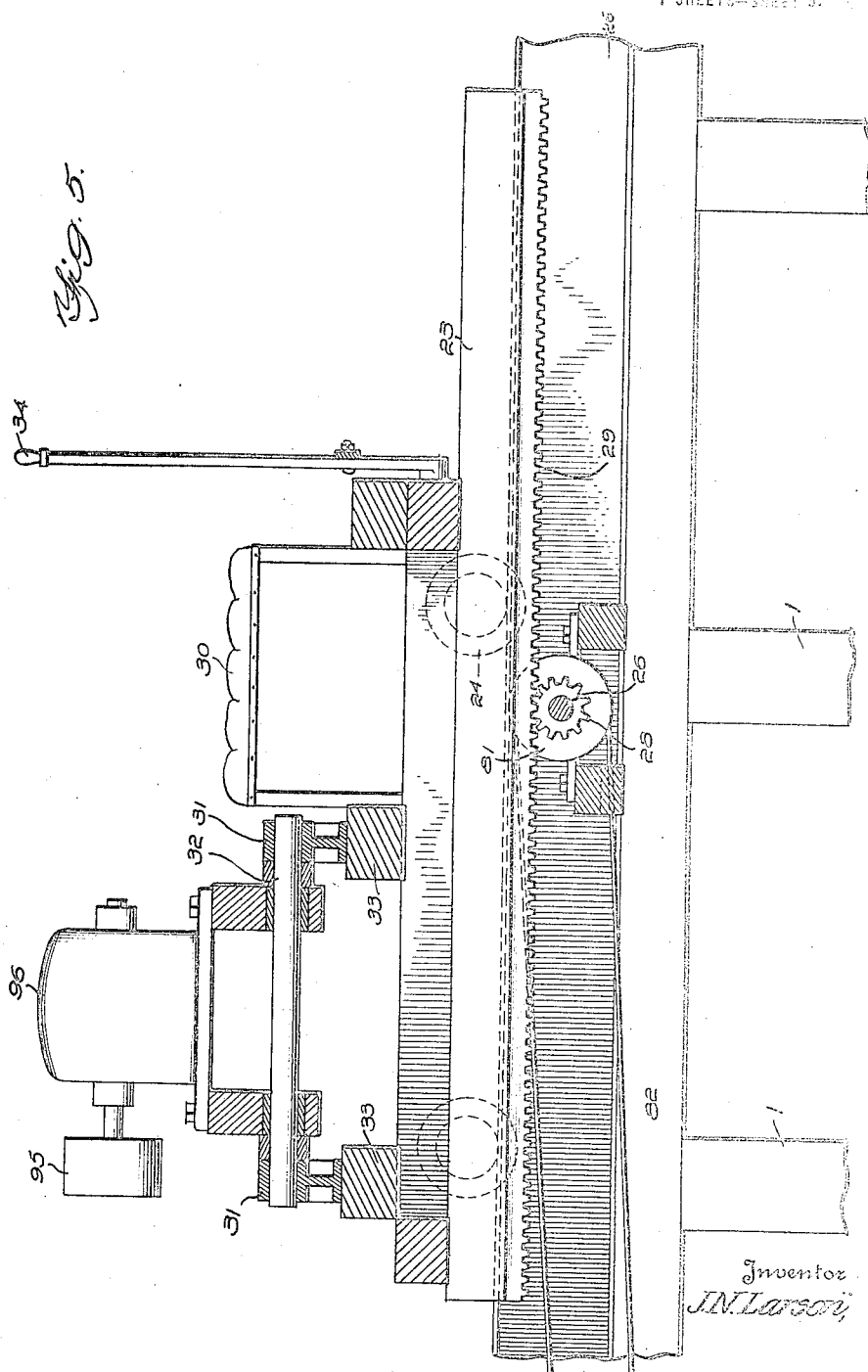
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APPLICATION FILED JULY 24, 1920.

Patented May 31, 1922.

7 SHEETS—SHEET 5.



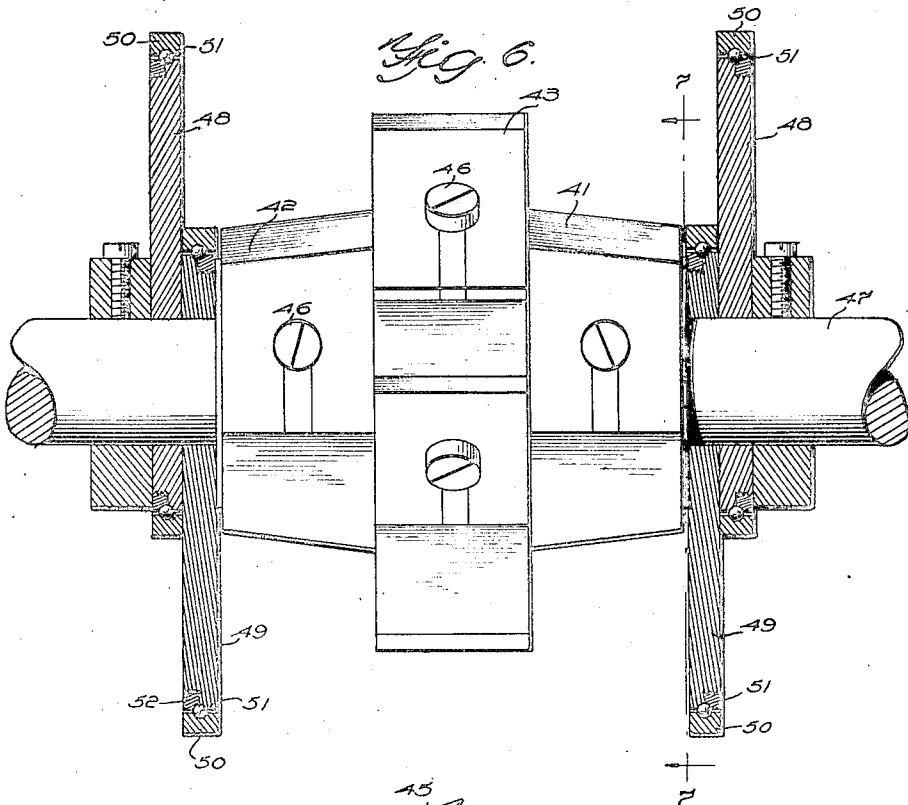
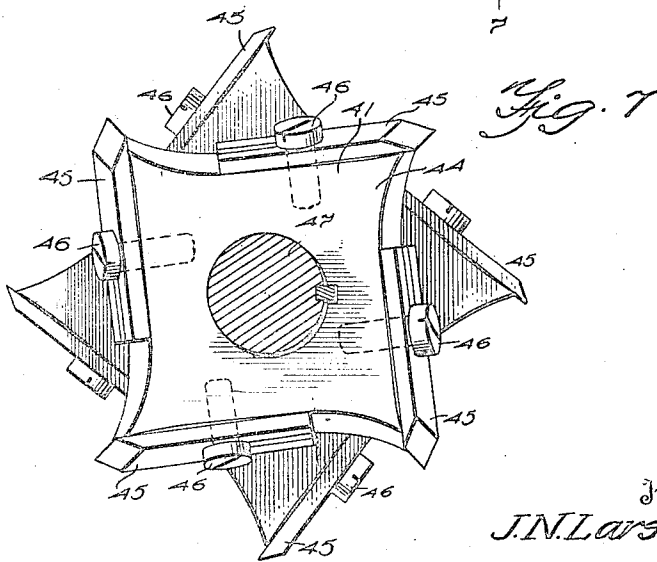
LOG PEELER.

APPLICATION FILED JULY 24, 1920.

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7 SHEETS—SHEET 6.



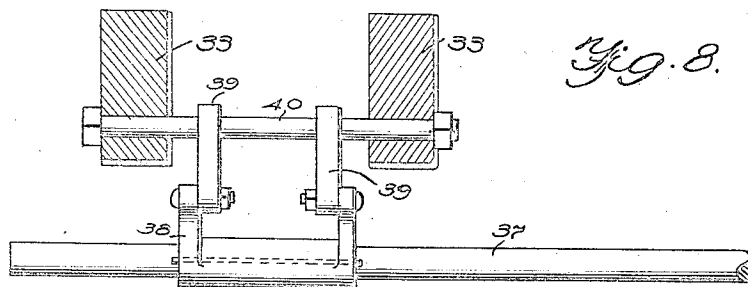
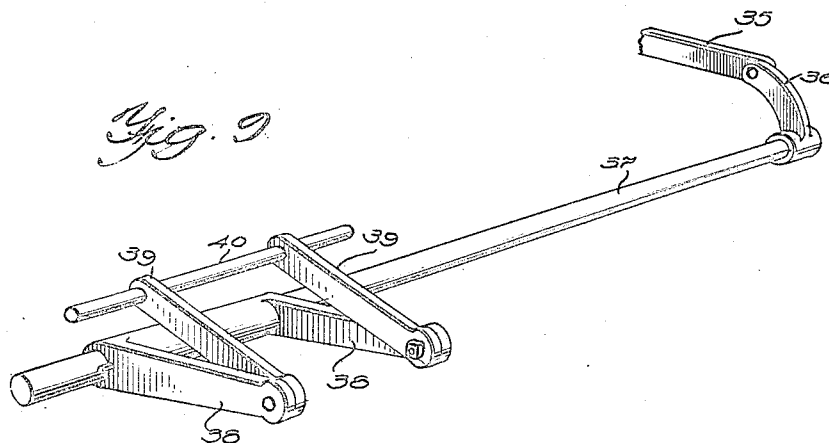
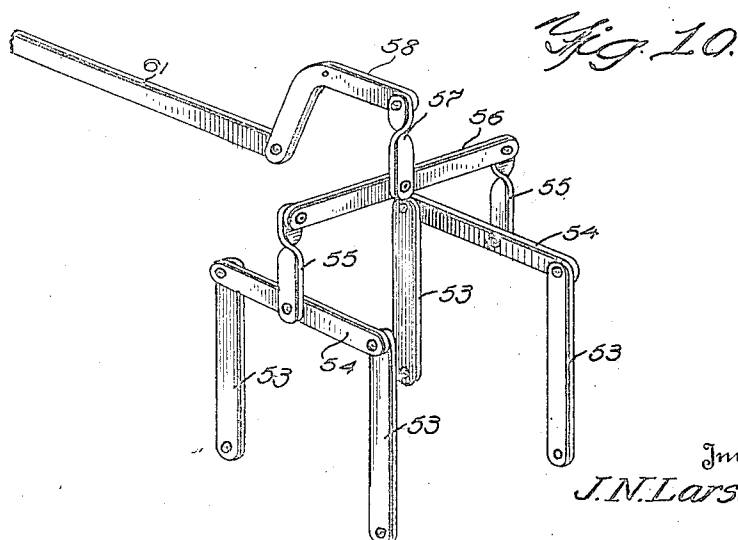
Inventor

J.N. Larson,

 $\mathbb{Z}_2$

Ch. F. Arken

Attorney



Inventor
J. N. Larson,

By

Ch. Parkin

Attorney

UNITED STATES PATENT OFFICE.

JULIUS NICHOLAS LARSON, OF DEXTER, MICHIGAN.

LOG-PEELER.

1,372,783.

Specification of Letters Patent.

Patented May 31, 1921.

Application filed July 24, 1920. Serial No. 398,780.

To all whom it may concern:

Be it known that I, JULIUS N. LARSON, a citizen of the United States, residing at Dexter, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Log-Peelers, of which the following is a specification.

This invention relates to log peelers, and it comprises a support adapted to receive and rotate the logs to be peeled, means for delivering logs thereto, means for removing peeled logs from said support, a reciprocating carriage arranged beside the logs supporting means, a support for the cutting mechanism adjustably arranged on said carriage to permit adjustment of the cutting mechanism for peeling logs of different sizes, a cutting tool mounted on said support, said tool being provided with double equalization gages to permit peeling of logs having uneven surfaces, and means for driving the different parts of said mechanism; all as more fully hereinafter set forth and as claimed.

In the present invention, I have provided means for peeling logs wherein the log to be peeled is mounted or supported on a pair of rollers, one of which is provided with a spiked periphery adapted to engage and rotate the log to present the entire surface of the log to the peeling mechanism. The peeling or cutting mechanism is mounted on a reciprocating carriage, the carriage being arranged to one side of the log supporting mechanism and adapted to support the cutting tool arranged above the log. The support for the cutting tool is pivotally mounted on the carriage whereby it may be readily and quickly swung to an inactive or inoperative position.

In the prior art, several machines for peeling logs have been disclosed wherein a peeling and cutting mechanism is arranged to remove the bark from the surface of the log. These machines have generally been unsatisfactory due to their limited capacity and the inability of the cutting mechanism to adjust itself to irregular surfaces in the log during the peeling operation. The bark removed from logs is generally sold to tanneries and must be free, or relatively free, of small chips of wood. When a log being peeled has an irregular surface formed by knots, a cutting or peeling mechanism not provided with equalizing gages will cut be-

neath the bark and remove wooden chips from the surface of the log. This renders the bark unsatisfactory for tanning purposes and lowers its commercial value.

In the present invention, I have provided a machine that is capable of adjustment for peeling logs of different diameters and which may be built of any desired length for the purpose of handling relatively large logs. The machine is very positive in operation and has a large capacity, being capable of peeling a log in a relatively short space of time.

I have further provided means for supporting the cutting member, hereinafter referred to as the double equalization gage, whereby the cutter adjusts itself to irregularities in the surface of the logs and cuts a predetermined distance below the surface regardless of irregularities. This produces a much better grade of bark and one having a relatively high commercial value.

In the accompanying drawings, I have shown one embodiment of the invention. In this showing,—

Figure 1 is a plan view of the log peeler.

Fig. 2 is a transverse sectional view of the machine.

Fig. 3 is a longitudinal vertical sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a vertical transverse sectional view on the line 4—4 of Fig. 1.

Fig. 5 is a vertical longitudinal sectional view through the reciprocating carriage.

Fig. 6 is a sectional view on the line 6—6 of Fig. 2.

Fig. 7 is a detail view of the cutter.

Fig. 8 is a sectional view on the line 8—8 of Fig. 2.

Fig. 9 is a detail perspective view of the adjusting mechanism for the support of the cutting member, and

Fig. 10 is a detail view of the equalization gage which supports the cutting member.

Referring to the drawings, the reference numeral 1 designates suitable vertical posts or standards supporting the bed of the machine. The support for the log to be peeled is mounted on a horizontal base or plate 2, arranged between the vertical standards. A trough 3 is arranged upon this support, the ends of the trough being provided with cross plates 4, in which are mounted bearings for the shafts 5 and 6 of the log

supporting rolls 7 and 8. The roll 7 is provided with spikes or teeth 9 on its outer face which are adapted to engage and rotate the log. The roll 8 may be provided with a smooth periphery and serve as an idler for supporting the log. Beneath the log support and within the trough 3, there is arranged a worm conveyer 10. A shaft 11 is arranged below the shafts on which the rolls are mounted and the means for removing the peeled logs from the log support are mounted on this shaft. As shown, an arm 12 provided with a curved log engaging terminal 13 is keyed to the shaft and adapted to revolve therewith. A member 14 is also keyed to the shaft at an angle to the member 12 and a slotted arm 15 is secured near the end thereof by a pivot or link connection 16. A pin 17 is adapted to ride in the slot in the arm 15 to guide the arm during movement. The logs to be peeled are delivered to the supporting means by a chain or belt conveyer 18 which passes over sprockets 19 mounted in bearings 20 on a suitable supporting member 21. On the opposite side of the support, a chute 22 is provided adapted to receive the peeled logs as they are removed from the machine.

The reciprocating carriage, on which the support for the cutting mechanism is mounted, comprises a frame 23 having traction wheels or rollers 24 adapted to travel on tracks 25. A transverse shaft 26 is arranged below the carriage, supported in suitable bearings 27 and this shaft carries a gear or pinion 28 meshing with a rack 29 arranged on the frame of the carriage. An operator's seat 30 is arranged on the carriage at any suitable point. A pair of bearings 31 is carried by the frame of the carriage adapted to receive shaft 32 on which the support 33 of the cutting mechanism is mounted. Arrangement of the support in this manner permits ready adjustment of the supporting mechanism to move the cutters to operative or inoperative position.

Referring to Figs. 2, 8, and 9 of the drawings, the means for adjusting the position of the supporting means for the cutters comprises a hand lever 34 pivotally supported on the carriage frame and having a link 35 secured thereto. This link is connected to a crank 36 arranged on a shaft 37, supported on the carriage frame and provided with a pair of crank arms 38. A pair of links 39 are connected to the crank arms at one end, the opposite ends being arranged on a shaft 40 carried by the support 33. It will be obvious that the shaft 37 will be oscillated by manipulation of the handle lever 34 and the forward end of the supporting mechanism adjusted forward or away from the log supporting means.

The cutting mechanism comprises a pair of beveled cutters 41 and 42 and a centrally

arranged square cutter 43. Each of the cutters comprises a substantially rectangular block 44 having cutting tools 45 arranged on each face and projecting slightly beyond the adjacent face of the block. As shown, the cutting members may be provided with slots to permit adjustment thereof and may be secured to the blocks by any suitable means such as screws 46. The cutters are mounted on a shaft 47 arranged above and between the shafts of the log supporting rollers. A pair of circular plates 48 and 49 are arranged on the shaft 47 at each end of the cutters, the plates being mounted eccentrically of each other in a horizontal plane. Each of these plates is provided with a traction ring 50 having antifriction bearings 51 arranged between the ring and the plate. The bearings are held in place by an annular member 52 having threaded engagement with the plates 48 and 49.

As shown in Figs. 2 and 4 of the drawings, the traction rings are normally arranged in the same horizontal plane and the lower portions are adapted to engage the surface of the log being peeled. The cutters project downwardly slightly below the lower edges of the traction rings and enter the log to the desired depth to remove the bark.

Means are provided for supporting the cutting mechanism whereby the cutting tools may adjust themselves to irregularities in the surface of the log. As shown, a link 53 is connected to each of the plates 48 and 49 and the upper ends of the pair of links 53 are arranged at each end of the cutter are connected by cross links 54 (see Fig. 10). These cross links are in turn connected to vertical links 55, the upper ends of which are connected to each other by a link 56. A vertical link 57 is connected to the link 56 and the opposite end is connected to a substantially bell crank lever 58 pivotally supported in a bracket 59 carried by the support for the cutting mechanism. The opposite end 60 of the bell crank lever is connected to a rod 61 secured at its opposite end to a hand lever 62 pivotally supported on the support for the cutting mechanism. A quadrant may be provided for maintaining the hand lever in any desired position.

The various parts of the machine may be driven from any suitable source of power. As shown, the shaft 5 of the spiked roll 7 is provided with a beveled gear 64 meshed with a similar gear 65 arranged on the shaft 66 mounted in bearings 67. A friction wheel 68 is mounted on this shaft and engages a friction disk 69 carried by a shaft 70 arranged in bearings 71. A speed control lever 72 is connected to the friction wheel whereby the wheel may be adjusted toward or away from the center of the disk to govern the speed. The shaft 70 may be

driven from any suitable source of power and as shown, a drive pulley 73 is arranged on the shaft adapted to receive a belt (not shown) from a central drive shaft. This pulley is provided with a clutch whereby the shaft 70 may be disengaged from the drive, the clutch being controlled by a lever 74.

The shaft 11 on the log removing mechanism is provided with a friction wheel 75 meshing with a similar wheel 76 carried by stub shaft 77 supported in bearings 78. A drive pulley 79 is arranged on the shaft, the drive pulley being connected to the shaft by a clutch controlled by a lever 80. The shaft 26, which drives the reciprocating carriage, is provided with a pulley 81 which receives the drive belt 82 passing over a pulley 83 on stub shaft 84. The shaft is mounted in bearings 85. A friction wheel 86 is mounted on this shaft adapted to engage a friction disk 87 mounted on a shaft 88 arranged in bearings 89. The shaft 88 is provided with a drive pulley 90. A speed control lever 91 is connected to the friction wheel to permit adjustment of the friction wheel with respect to the friction disk. A clutch is arranged between the pulley 90 and the shaft 80 and a control lever 92 is connected thereto.

The shaft 47 of the cutter is provided with a pulley 93 adapted to receive a belt 94 passing over a pulley 95 arranged on the shaft of an electric motor 96 carried by the support for the cutting mechanism.

The operation of the invention is as follows:

The logs to be peeled are delivered to the log supporting mechanism by the chain or belt conveyer 18. When a log is being delivered, the log removing mechanism or "kicker" is in the position shown in Fig. 1 of the drawings and shown in full lines in Fig. 4 of the drawings. The arm 15 projects above the idler rolls 8 to prevent the log from passing over the supporting mechanism. The log is received in position between the two rolls and the teeth or spikes 9 on the rolls 7 engage the surface of the log and rotate it. Power is supplied to the shaft 5 from a suitable source through the shaft 70 and the gearing connecting the two. The speed of the shaft 5 may be controlled by adjustment of the friction wheel 68. As the log is rotated, the reciprocating carriage is driven by the engagement of rack 29 and the pinion 28, the speed of the carriage being controlled by friction wheel 86 and friction disk 87. As the carriage mechanism reciprocates, the cutting tools engage the surface of the log and remove the bark therefrom as illustrated in Fig. 4. The beveled cutters 41 or 43 first engage the log, depending on the direction in which the carriage is traveling, the beveled cutters preparing the log for the square cutter,

trimming off knots and uneven obstacles. The position of the cutter may be adjusted for logs of different diameters through a hand lever 62. The cutters are so adjusted that the bark alone will be removed from the wood.

The equalization gage, shown in detail in Fig. 10 of the drawings, which supports the cutters and the shaft on which the cutters are mounted, permits the cutting mechanism to adjust itself to irregularities in the surface of the log and remove a uniform amount from the surface at all times. When one of the rings 50 engages a knot or projection on the side of a log, or enters a depression, the arm 53 attached to it raises or lowers, and through the link connection, the arm on the opposite side is lowered or raised and the arms at the opposite end adjust themselves to permit the cutters to rise sufficiently to properly trim the bark around a knot or lower sufficiently to permit the cutters to enter a depression and trim the bark. The provision of the pivoted links 53 which are connected to the cutting mechanism and the pivoted cross links 54 which are connected to the supporting mechanism by means of pivoted links 55, 56, and 57, permits the cutting mechanism to assume an angle parallel to the surface of the log. When one of the plates 48 or 49 raises or lowers, the rectangle formed by the engaging edges of the rings 50 shifts its position due to the pivoted connections between the cutting mechanism and the supporting mechanism.

When a log has been trimmed or peeled, the support of the cutting mechanism is raised by revolving it about the shaft 32 carried by the carriage frame. This is accomplished through the medium of the hand lever 34 and the connecting mechanism shown in Figs. 8 and 9 of the drawings. When the cutters have been raised out of contact with the log, the "kicker" or log removing apparatus is operated through the control lever 80, energizing shaft 11. When the shaft 11 is oscillated, the removing apparatus assumes the position shown in dotted lines in Fig. 4 of the drawings, the arm 15 moving downwardly to permit the peeled log to pass over the rolls 8 to the chute 22. The arm 13 engages the log and pushes it over the rolls 8 to the chute. At the same time, the arm 13 assumes a position which prevents a second log from being delivered to the log supporting apparatus until the log has been removed.

It is to be understood that while I have shown and described the preferred embodiment of my invention, various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a log peeler, the combination of means for supporting and rotating a log, a reciprocating carriage, adjustable supporting means carried by the carriage, and cutting mechanism mounted on said supporting means, of an equalization gage secured to said cutting mechanism and connecting it to said supporting means, said gage comprising a plurality of links arranged in pairs, and pivotally connected to the opposite ends of the cutting mechanism, cross links pivotally secured to the upper ends of said links and connecting the links of each pair, and links pivotally connected to said cross links and connecting them to said supporting mechanism.

2. In a device of the character described, as a subcombination, cutting mechanism comprising suitable cutters, a shaft on which said cutters are mounted, a pair of circular plates eccentrically mounted on each end of the shaft, the lower peripheries of said plates being normally in the same horizontal plane, and supporting means connected to each of said plates, said supporting means comprising equalizing devices connected to each other to permit adjustment of said plates and of the cutter to compensate for irregularities in the surface of the log.

3. In a log peeler, the combination with means for supporting and rotating a log, a reciprocating carriage, adjustable supporting means carried by the carriage, and cutting mechanism mounted on said supporting

means, of an equalizing gage secured to said cutting mechanism and connecting it to said supporting means, said gage comprising a pair of circular plates arranged at each end of the cutting mechanism, said plates being disposed eccentric to each other in a horizontal plane, traction rings arranged on said plates and engaging the surface of the log, links pivotally connected to said plates, the links at each end being pivotally connected to each other by cross links, and links pivotally connected to said cross links and connecting them to said supporting mechanism.

4. In a device of the character described, as a subcombination, cutting mechanism comprising suitable cutters, a shaft on which said cutters are mounted, a pair of circular plates eccentrically mounted on each end of the shaft, the lower peripheries of said plates being normally in the same horizontal plane, and supporting and equalizing means connected to each of said plates, said supporting means comprising links pivotally connected to the plates, cross links pivotally connected to the links at each end of the cutting mechanism, and links pivotally connected to said cross links, and a rigid support to which said last mentioned links are connected.

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

JULIUS NICHOLAS LARSON.

Witnesses:

FRED. N. LARSON,
C. G. CRUMRINE.