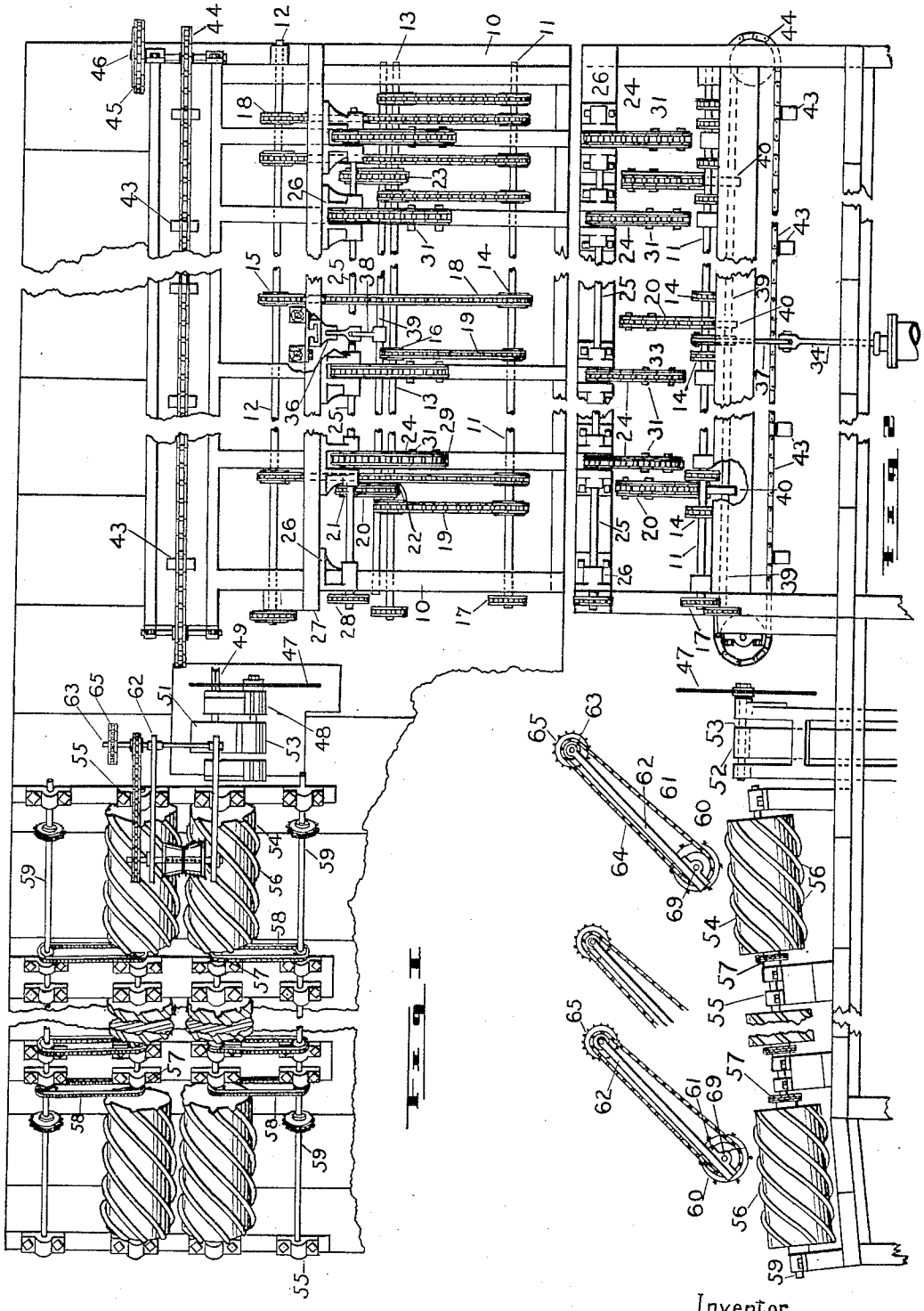
Oct. 1, 1935. A. HOKONSON 2,015,936

LOG BARKER

Filed March 2, 1933 2 Sheets-Sheet 1



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LOG BARKER

Filed March 2, 1933 2 Sheets-Sheet 2

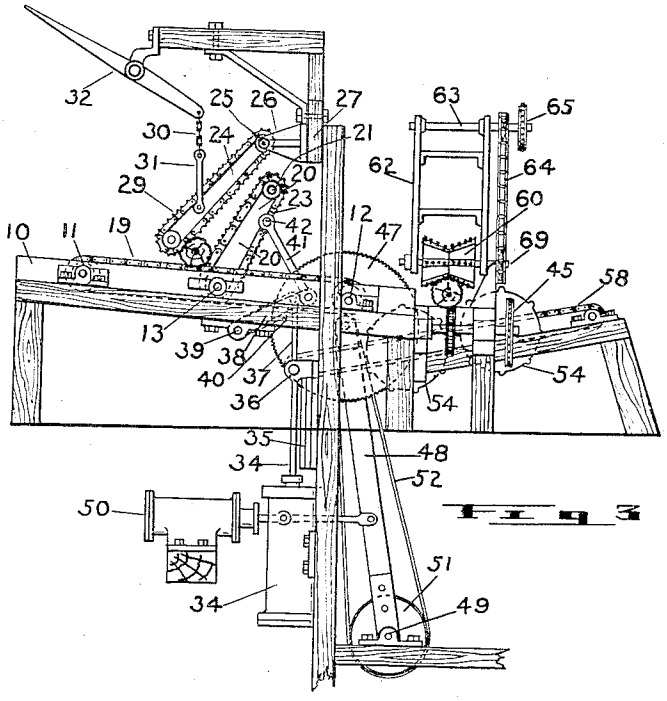


Fig 3

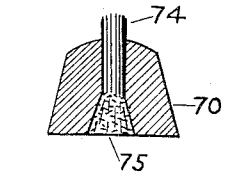


Fig 8

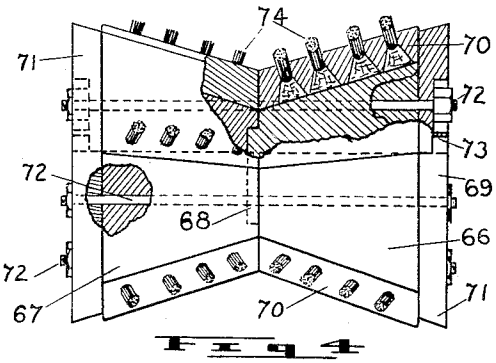


Fig 4

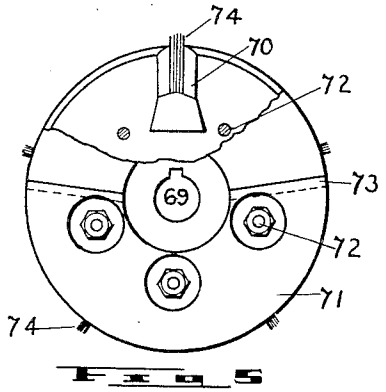


Fig 5

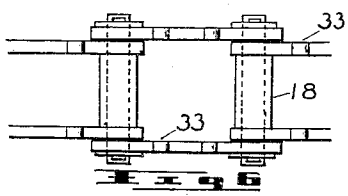


Fig 6

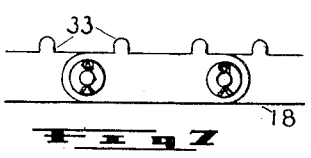


Fig 7

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UNITED STATES PATENT OFFICE

2,015,936

LOG BARKER

Albert Hokonson, Coghlan, British Columbia, Canada

Application March 2, 1933, Serial No. 659,303
In Canada March 9, 1932

5 Claims. (Cl. 144—208)

My invention relates generally to log barking machines, and more specifically to a combination of devices designed to act consecutively upon the logs passed therethrough and to certain novel features within these devices.

In brief, the steps in the barking process as carried out by my machine, consist in allowing the logs one at a time to be fed onto a wide inclined platform and to be slid transversely along the same by means of knob-linked chains travelling parallel therewith.

Midway along this platform the log is trapped between two other sets of moving chains similar to those mentioned above and actuated to revolve about pivoted guide arms which may be raised or lowered at the will of the operator of the machine.

When most of the bark has been cut and torn away from the log the rear arm is swung down to allow the partially barked log to pass into an endless conveyor which carries the log longitudinally towards a rotary swing saw used to cut the log into suitable lengths which fall onto rotating spirally fluted rolls arranged in pairs so as to rotate and propel the log endwise and to scrub it clean of all remaining bark.

Rotary conical brushes mounted above these rolls assist in this scrubbing process.

A primary object of my invention is to provide a log barker in which the haphazard element common to other devices of this character is absent, my machine being adapted to handle the logs individually and having provision made for retaining the log in the primary unit of the machine until most of the bark has been removed or at least cut and loosened.

A second object of my invention is to provide a combination of devices which are adapted to handle logs of great length as well as much shorter lengths and also to handle logs of greatly varying diameter.

A third object of my invention is to reduce the amount of operating power necessary, this advantageous feature being obvious when it is noted that nearly all the power used in my machine is applied directly to the actual removal of bark, whereas in other machines of this character the logs are barked by rolling and rubbing or tumbling the logs against each other, which process necessitates a great waste of power used in unnecessarily moving the logs.

A fourth object of my invention is to provide a log barker which will be highly efficient, largely automatic in control, and which can be installed at a comparatively small cost.

With all these and other objects definitely in view, a preferred embodiment of my invention resides in the novel construction and arrangement of parts as shall hereinafter be more fully described in the specification, illustrated in the drawings, and pointed out in the claims hereunto appended.

In the drawings:

Fig. 1 is a plan view of the assembly with levers 32 and portions of the overhead and under-floor structure omitted for clearness.

Fig. 2 is a side elevation of the same.

Fig. 3 is an end elevation of the assembly.

Fig. 4 is a side elevation of one of the rotary brushes showing portions of the outer shell broken away to show the arrangement of the parts.

Fig. 5 is an end elevation of the brush assembly, the proximate one half of the same being broken away to show the opposite brush unit and adjacent parts in elevation.

Fig. 6 is a plan view of a portion of one of the bark cutting chains.

Fig. 7 is a side elevation of the same.

Fig. 8 is a sectional view of one of the brush units.

Referring to the drawings:

In describing my device, I shall describe the unit parts thereof more or less in the order in which they act upon the logs passed through the machine.

The platform onto which the logs are first fed is constructed of suitably supported sloping girders 10, on which are journalled the shafts, 11, 12 and 13.

On these shafts are fixed in spaced relation a plurality of oppositely placed sprocket wheels 14, 15 and 16 and the shaft 11 is continuously rotated by the sprocket 17 and suitable power means always obtainable where such installations are wont to be used.

A plurality of longer endless chains 18 and shorter endless chains 19 are driven from said sprockets 14, 15 and 16 and since they all move in the same direction and in approximate alignment with the tops of said girders 10 they urge the logs to move in a direction transversely of their length along the sloping platform until temporarily stopped by the arms 20.

A plurality of these arms 20 are spaced along and pivotally journalled to the shaft 13, the upper ends of the arms having rotatably mounted therein a corresponding number of sprockets 21 which coact with a similar number of sprockets 22 fixed to the rotating shaft 13 which provides

the motive power to cause the endless chains 23 to travel about the said arms.

A somewhat similar set of spaced arms 24 are pivotally supported on the continuous shaft 25 which is suitably journalled as at 26 on the overhead beam structure 27 and said shaft 25 is rotated by the sprocket 28 which is chain driven direct from the source of power independently of all other shafts to revolve the chains 29 about said arms 24 and in a direction opposite to that of the chains 18, 19 and 23.

The arms 24 are designed to be raised and lowered by a corresponding number of cables 30 secured by means of clevises 31 to said arms and operated by any suitable lever means 32 supported on the overhead beam structure 27 and controlled by the operator of the machine, the said arms being raised to allow the logs to pass beneath the lower ends of the same, and it will be evident that, when the log is trapped between the arms 20 and 24 with the chains carried thereon frictionally contacting the log and moving in opposite directions, the bark will be speedily cut and torn away.

All these chains referred to above are constructed with link members each having two knobs 33, as represented in the detail Fig. 7, the more effectively to grasp and tear the bark and to remove any ice or clay lodged on the logs.

The arms 20 may be lowered into parallel relation with the platform girders 10 by means of a steam cylinder and piston 34 controlled by the operator of the machine, the piston rod being guided in the true vertical direction by the slide rail 35 and the crosshead 36 co-acting with the link 37 which operates the lever arm 38 which is fixed to the continuous shaft 39 thereby quadrantally rotating this shaft which has spaced fixed lever arms 40 disposed similarly with the said lever arm 38 and the motion of said lever arms 40 is transmitted to the links 41 (shown in Fig. 3) the upper ends of which are pivotally secured to the upper or swinging ends of the chain-carrying arms 20 as at 42.

Jump rolls of the character employed in many sawmills, but for sake of clearness omitted from these drawings, may be suitably mounted between the girders 10 and are operable to move the log a short distance longitudinally in either direction when and as required.

When the log is sufficiently barked by the said revolving chains the arms 20 are lowered by means of the apparatus described above allowing the log to be carried along the platform 10 by the previously mentioned long endless chains 18 and the logs then roll into an endless conveyor, 43 which is of the usual sprocket chain and cup character terminally driven by means of the sprocket wheels 44 and 45 fixed to the driving shaft 46, the logs being carried endwise by said conveyor towards the saw, rotary brushes and rolls which I shall now describe.

The swing saw 47 is rotatably mounted and carried on an arm 48 which in turn is pivotally mounted on the framework as at 49 (shown in Fig. 3) so that the said saw can be moved in and out of operative position at the will of the operator by means of the steam cylinder, piston, and link generally represented at 50 and the saw is driven from the driving pulley 51 by the belt 52 and the pulley 53.

This saw is used to cut the logs into the desired lengths as the logs pass from the conveyor 43 to the rolls 54.

These rolls 54 are arranged in a series of pairs each pair being slightly lower than the pair in front and are rotatably mounted on suitable supports by the journals 55 and, when these rolls are to be rotated in the same direction, the one roll of each pair which produces an up-thrust on the log passing thereover is supported slightly above the other of that pair as indicated in Fig. 3 in order to prevent the log from being rolled to one side.

Each roll is spirally fluted as at 56 and these flutings have a triple function in urging the log forward in the direction of its length, turning the log, and removing the last traces of bark therefrom as the rolls are rotated by means of sprockets 57 rigidly secured to the shafts of said rolls and chain driven as indicated at 58 from power driven shafts 59 rotatably mounted parallel to the said rolls.

The brushes generally indicated by the numeral 60 and positioned above the said rolls are mounted by means of their central shafts 69 and bearings 61 at the lower ends of arms 62 which are pivotally supported on overhead drive shafts 63 and are chain driven as at 64 from said shafts and sprockets 65.

The weight of said arms and brushes will provide sufficient pressure of the brushes against the logs and, when the rolls are turning and no logs are passing over said rolls, the brushes may be suspended by any suitable suspension means secured to the overhead structure.

These rotary brushes are of novel construction each comprising two main portions 66 and 67 interlocked by the projection and recess indicated at 68 and keyed to the drive shaft 69, each of said portions being conical in shape and suitably slotted to receive the brush units 70 which are firmly retained in said slots by the end plates 71 held together by the bolts 72, said plates being split as at 73 to facilitate their removal to allow the extraction of the brush units for repair and adjustment.

Each brush unit has rigidly secured therein a plurality of suitable scoring members such as portions of wire cable 74 tightly fitted into flaring holes drilled in the body portion of the brush unit and retained by babbitting the same in the lower or flaring end of the said holes as at 75.

In operation, the logs, preferably in wet condition, are floated or rolled onto the platform 10 and the above described chains, rolls and brushes are allowed to consecutively act upon these logs as outlined in the preamble of this specification.

Having thus fully described the essential features of my invention, I wish to emphasize the fact that the foregoing is merely descriptive of a preferred embodiment of these features which are capable of modification without departure from the scope and spirit of this invention.

I am aware, also, that several devices having similar objects in view have been known and used, but what I claim as new and desire to secure by Letters Patent is claimed in the claims hereunto appended.

What is claimed is,

1. In a log barker, spirally fluted abrasive rolls arranged in pairs and disposed parallel with the line of travel of the log over the same, the one roll of each pair which produces an up-thrust on a log passing thereover being mounted slightly above the level of the other of that pair means to rotate said rolls, means to convey said logs onto said rolls.

2. In a device of the character described, sets of toothed-linked endless chains moving in oppos-

ing directions and travelling about pivoted guide members, means to move logs into proper relationship with said members, means to raise and lower said members so as to temporarily trap individual logs and to release the same when barked, compound bevelled brushes to bear against said logs, means to rotate said brushes, means to move said logs into proper relationship with said brushes, rollers arranged in pairs and disposed parallel with the line of travel of said logs over the same, means to rotate said rollers, means to move said logs onto said rollers, and spiral fluting on said rollers designed to propel forward, to turn and to abrade remaining bark from said logs, all substantially as described.

3. In a debarking machine, a fixed platform, chain means to carry logs transversely along said platform, pairs of co-acting arms spaced longitudinally of the platform and pivotally mounted so as to be positionable at an angle thereto and to temporarily trap individual logs midway of said platform and between said arms, endless rossing chains mounted to travel about said arms, and means to drive said chains and further means to operate said arms.

4. In a debarking machine, a platform along which logs are moved transversely of their length by a plurality of tooth-linked chains mounted to travel parallel to said platform and transversely to the length of the logs, an arm pivotally supported above and intermediate said platform and alternately positionable to arrest the forward travel of said logs when in one position and to allow the advance of said logs when in another position, tooth-linked chains mounted to travel about said arm and to co-act with said other chains to tear and loosen the bark of the logs, and means to swing said arm parallel said platform and out of engagement with said logs and further means to motivate said chains.

5. In a log-debarking machine, a platform along which logs may be moved transversely of their length, an arm pivotally supported on said platform and positionable to arrest the forward motion of said logs intermediate said platform and also positionable to allow the logs to pass unobstructed over the platform, and a second arm pivotally mounted on overhead beam structure and alternately positionable with relation to the first mentioned arm to enable logs to be trapped singly between the two arms and the platform, a plurality of endless tooth-linked chains being mounted to travel about said platform and about each of said arms, means to motivate all said chains so that the parts of said chains simultaneously contacting said log are moving in a plurality of directions and further means to move said arms.

ALBERT HOKONSON.