

Dec. 29 1925.

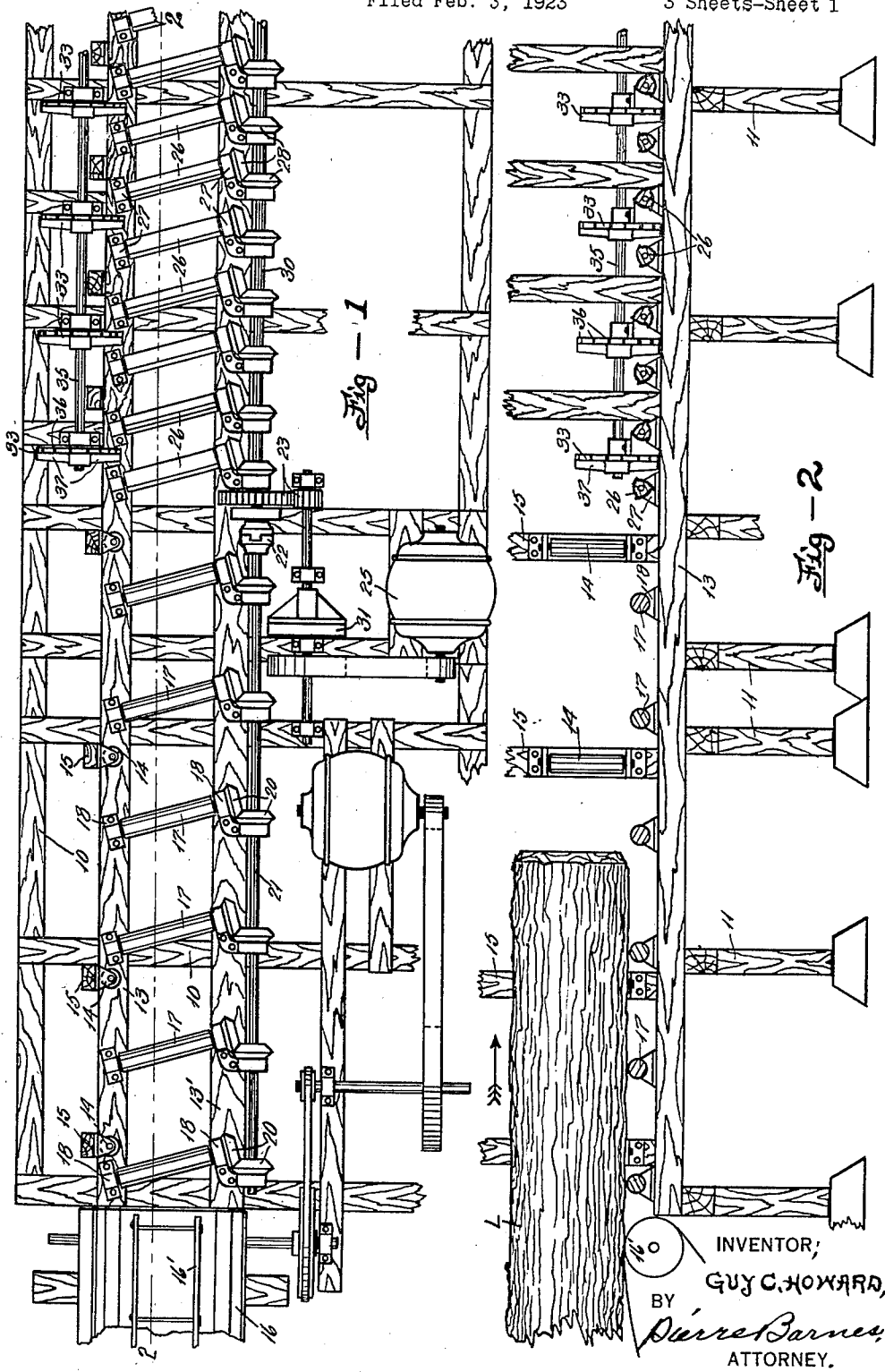
G. C. HOWARD

1,567,441

DEBARKING MACHINE FOR LOGS

Filed Feb. 3, 1923

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

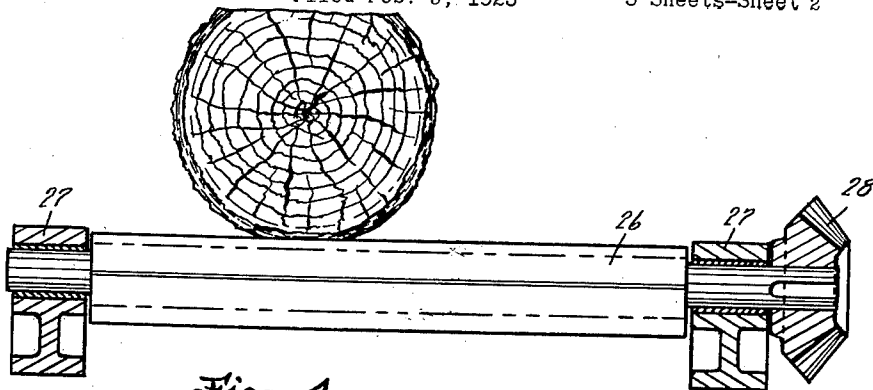


Fig-4

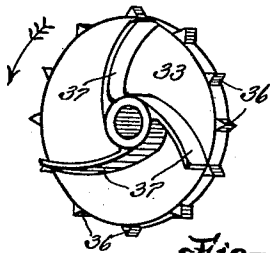


Fig-5

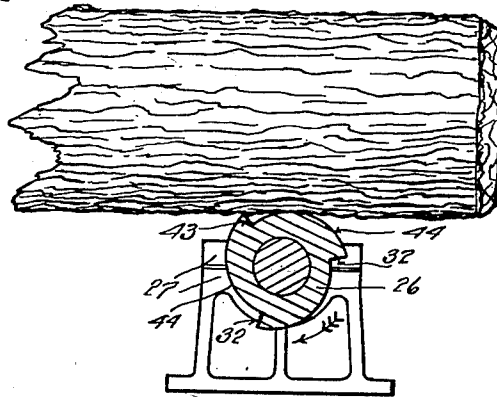


Fig-6

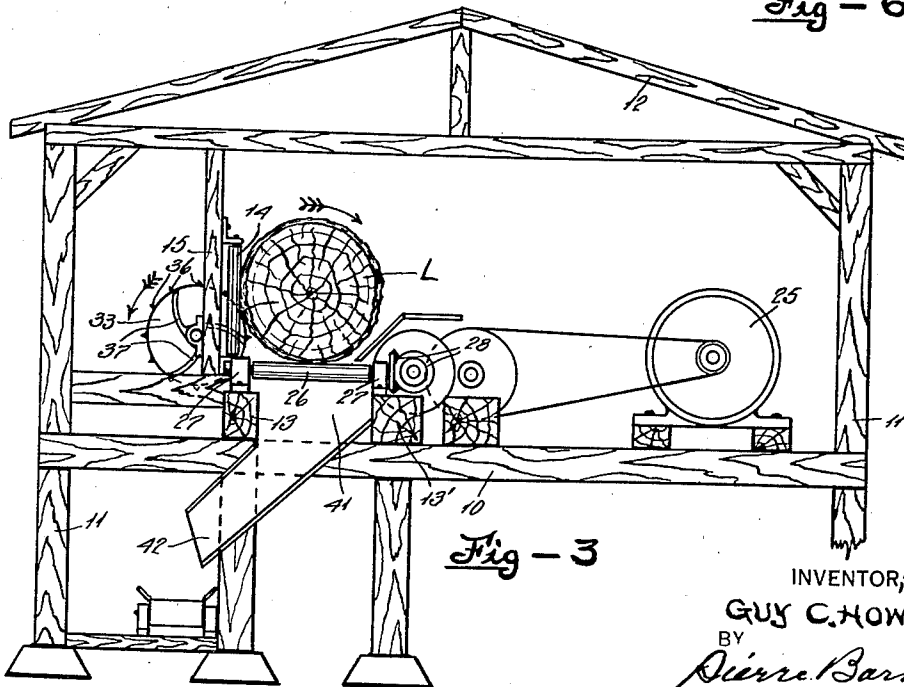


Fig-3

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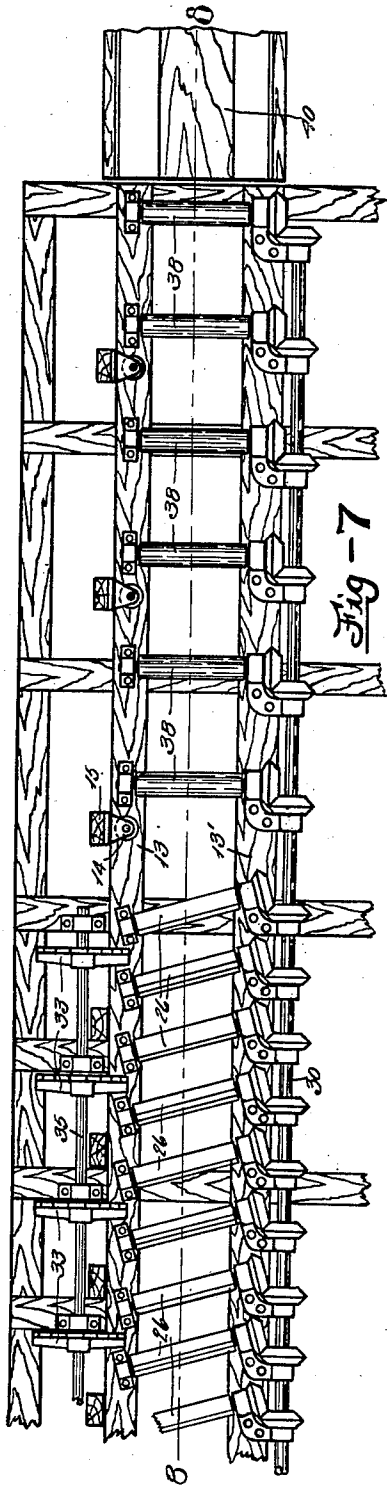


Fig-7

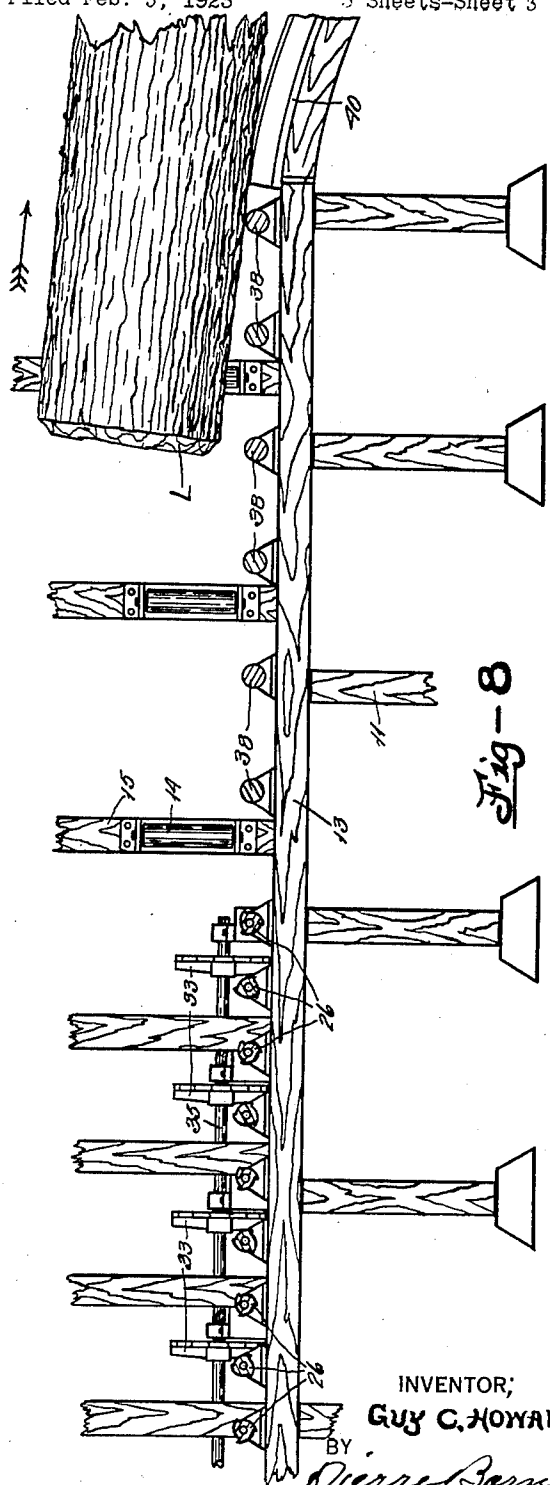


Fig-8

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UNITED STATES PATENT OFFICE.

GUY C. HOWARD, OF SEATTLE, WASHINGTON.

DEBARKING MACHINE FOR LOGS.

Application filed February 3, 1923. Serial No. 616,722.

To all whom it may concern:

Be it known that I, GUY C. HOWARD, a citizen of the United States, and resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Debarking Machines for Logs, of which the following is a specification.

This invention relates to improvements in machines for removing the bark from logs.

The principal object of the invention is the provision of a simple, efficient and serviceable machine to remove the bark from saw-logs and is adapted and designed with particular reference to the handling and debarking of the relatively large logs of the western timber belts.

The economic removal and recovery of the bark from these large logs is believed to be best accomplished through the installation of a debarking mill at some central point where a large number of logs are regularly assembled, either at a shipping point or at a large saw-mill where the consumption of logs is great enough to warrant a debarking mill of the capacity of that shown herein.

The western hemlock and firs contain in their bark sufficient tanning to warrant its extraction but heretofore it is believed the difficulty of harvesting and collecting the bark in commercial quantities from these large trees and in the rough country in which they are usually found has prevented the extensive exploitation of this valuable resource. In addition to the recovery of a valuable by-product from these saw logs it is a decided economic advantage from a milling standpoint to rid the logs of their bark preparatory to passing to the saw-mill as thereby all gravel and dirt embedded in the bark is removed; the mill is kept clean of bark refuse which requires care and involves labor expense to remove; more merchantable lumber can be cut from a saw log when peeled for the reason that the sawyer can more closely gauge his slab cuts; and if the log is to be cut into veneer, a peeled log will steam more uniformly and quicker in the pits and the hand labor of barking will be eliminated.

With these and other objects and advantages residing in my invention, which will be fully apparent in the course of the following description, the invention consists

in the novel construction of the parts and devices in a debarking mill, and the adaptation and combination of the same, as will be fully described in the succeeding specification, illustrated in the accompanying drawings, and finally set forth in the appended claims.

In said drawings, Figure 1 is a plan view of a debarking mill embodying my invention, showing the front portion thereof only, the rear portion of the mill being shown in Fig. 7, the view being broken off at each end. Fig. 2 is a view in vertical section on line 2—2 of Fig. 1. Fig. 3 is a transverse vertical section of Fig. 1. Fig. 4 is a detached view on an enlarged scale of a rossing roll in side elevation and its bearings shown in section. Fig. 5 is a detached perspective view of a guide disk element of the invention. Fig. 6 is a view in cross section of the roll shown in Fig. 4. Fig. 7 is a plan view of the continuation of the mill shown in Fig. 1. Fig. 8 is a view in vertical section on line 8—8 of Fig. 7.

Referring to said views, wherein like reference characters indicate like parts in the several views, the reference numeral 10 designates the timbered elevated platform of a debarking mill and 11 the supporting posts therefor which may serve also to support the roof 12. Spaced timbers 13 and 13' are mounted longitudinally of the mill and along one side of timber 13 vertical posts 15 are disposed serving as side guides for the logs passing through the mill and are provided with vertically mounted guide-rollers 14. 16 indicates a log haul-up to deliver logs to the mill from a pond or yard and is provided with an endless chain conveyor 16' or other suitable means to elevate a log, such as L, to the platform.

17 indicates cylindrical rollers mounted in bearings 18 on the timbers 13 and 13'. Said rollers are parallel to each other and are arranged with their forward edges set at an acute angle with respect to said timber 13. Said rollers 17 are shown driven by bevel gears 20 from a common shaft 21 actuated through cut-out clutch 22 and speed reduction gearing 23 by motor 25, and advance the log by their obliquity forwardly and laterally against the posts 15 or guide rollers 14 which in turn direct the logs in an advance direction.

From said rollers 17 the log proceeds upon the rossing rolls 26 which are mounted upon

timbers 13 and 13' in substantially the same manner and with substantially the same relative angularity as the rollers 17. Said rolls 26 are mounted in bearings 27 and driven by bevel-gears 28 upon a common shaft 30 in alignment with shaft 21 and driven by motor 25 and gearing 23, a main operating clutch 31 being interposed whereby the motive power to all the rolls may be cut off.

Said rossing rolls, see Figs. 4, and 6, are formed desirably with a plurality of stripping edges 32 extending lengthwise of the rolls and designed to bluntly penetrate and batter the bark from the log and by an avoidance of salient sharp cutting edges which are too quickly dulled in use and tend to injure the wood of the log. Said edges may be made with renewable blades, not shown, as will be readily understood. A desirable form of rossing head, such as illustrated in the views, consists in what is substantially a three-throw cam in section actuated in the reverse direction to that in which a cam would be operated. Such configuration may be described as being developed on its cross section from the junction of the radius of a circle, see 43, Fig. 6, eccentric from the center of the roll, with the circumference of a similar circle, as at 44.

While the log is being advanced and treated by the rossing rolls, as described, it is also in contact with revolving guide disks 33, see Fig. 5, which are mounted on shaft 35 parallel with timber 13 so that their peripheral edges will extend to about the line of the guide rollers 14. Said shaft 35 is rotatably actuated in any suitable manner, not shown. Said disks are formed or provided on their peripheral edges with spike projections 36 which contact with and rotate the log upon the rossing rolls simultaneously to the debarking action of the latter. Said disks are further provided with a plurality of curved blades 37 formed on the approach face of the disks and which will engage the forward end of the log and throw it back in position on the rolls should the log end project within the lateral line of the disks.

Beyond the rossing rolls a plurality of conveying rolls 38 are mounted on timbers 13 and 13' and desirably at right angles to said timbers to convey the logs straight to the fall-off chute 40 or to the saw-carriage (not shown) of a saw-mill. 41 indicates a hopper and 42 a delivery chute for receiving and discharging the bark stripped from the logs.

The operation of my improved apparatus may be described as follows: The log is hoisted or delivered upon the inclined rollers 17, as clearly indicated in Fig. 2, by means of the conveyor 16' and is conveyed on said rollers forwardly toward the ross-

ing rolls and caused simultaneously to move along the lateral side of the rollers in contact with the guide rollers 14 by reason of the obliquity with which the rollers are positioned. If the operations upon the preceding log are not completed, or for any reason, the progress of the log may be checked by uncoupling the actuating shaft 21 throughout the clutch 22.

On advancing the log upon the rossing rolls 26 a rossing or debarking action takes place simultaneously with the progress of the log forwardly from the force imparted by the rossing rolls 26 and the rotating action upon the log due to the engagement therewith of the disks 33. The relatively slow forward movement of the log by reason of the resistance afforded by the spikes 36 and the effective turning movement of the log through the rotary action of the same spikes results in every portion of the superficial area of the log being subjected to a thorough and repeated rossing which will effectually remove all the bark from the log that the rolls can reach in their rotation and that are not protected from the action of the rolls by reason of relatively sharp irregularities in the log. The rolls 26 may be set as closely together as desired and a sufficient number installed to make the operation complete and effective.

Should the end of the log protrude between the disks 33 it will be engaged by the blades 37 and thrown outwardly into its proper path of travel. The action of the rossing rolls is such that the bark will be readily stripped from the log but when the log has been bared the rolls will not injure or splinter the wood of the log.

Upon leaving the rossing rolls the log is conveyed upon the conveyor rolls 38 wherever desired. The bark stripped from the log is lodged in the hopper 41 and discharged through chute 42 or handle in any desired manner.

It will be seen that with my improved apparatus I am enabled to remove the bark from logs as an extremely efficient, rapid and economical operation requiring the minimum of time and labor so that the cost of handling and stripping each log will be reduced to the least possible point and the resulting product of commercial tan-bark together with the improved condition of the log for sawing purposes will well repay its installation.

Having described my invention, what I claim, is:—

1. A debarking machine for logs consisting in combination with supporting power actuated rolls arranged obliquely and in parallel to advance the log treated in oblique directions, each said roll being formed with a plurality of rossing edges, a plurality of guide disks mounted to rotate laterally of

said rolls to engage and guide the log, and means on said disks to rotate the log.

2. A debarking machine for logs, consisting in combination, a plurality of power actuated rolls arranged obliquely and in parallel to support and advance obliquely the log treated, said rolls being formed with a plurality of stripping edges, a plurality of guide disks mounted to rotate laterally of said rolls to engage and guide said log, means on said disks to rotate the log, and means on said disks to replace a log on said rolls whose ends enter between the disks.

3. A debarking machine for logs, consist-

ing in combination, a plurality of power actuated rolls arranged obliquely and parallel with each other to support and advance obliquely the log treated, said rolls being formed with a plurality of guide disks mounted to rotate laterally of said log, means on said disks to rotate the log, and a plurality of curved blades provided upon one face of each of said disks to replace a log on said rolls whose ends enter between the disks. 20 25

Signed at Seattle, Washington, this 25th day of January, 1923.

GUY C. HOWARD.