July 31, 1956 B. VALO 2,756,786

BARK-REMOVING MACHINE HAVING CUTTERS YIELDABLY MOUNTED FOR RIDING-OVER OBSTACLES

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Fig. 1.

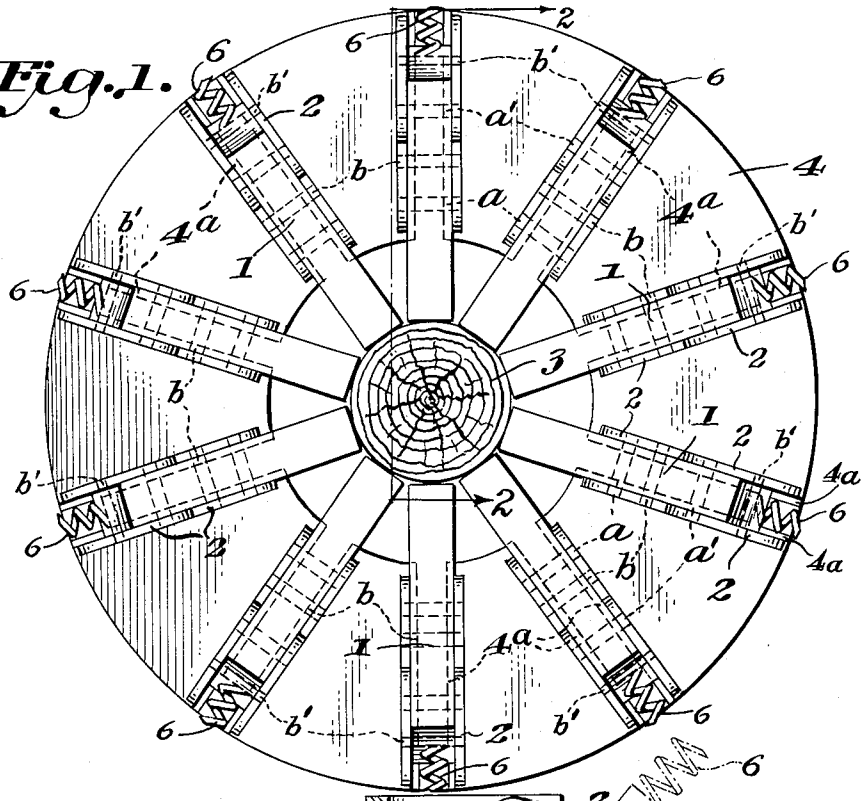
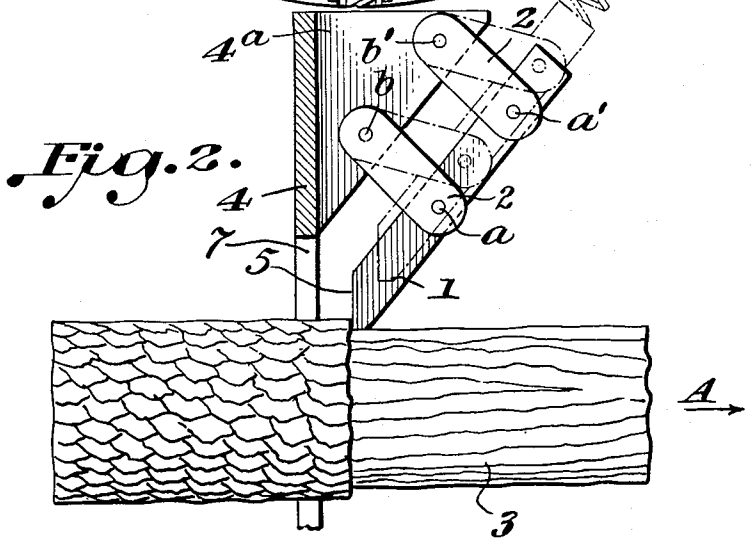


Fig. 2.



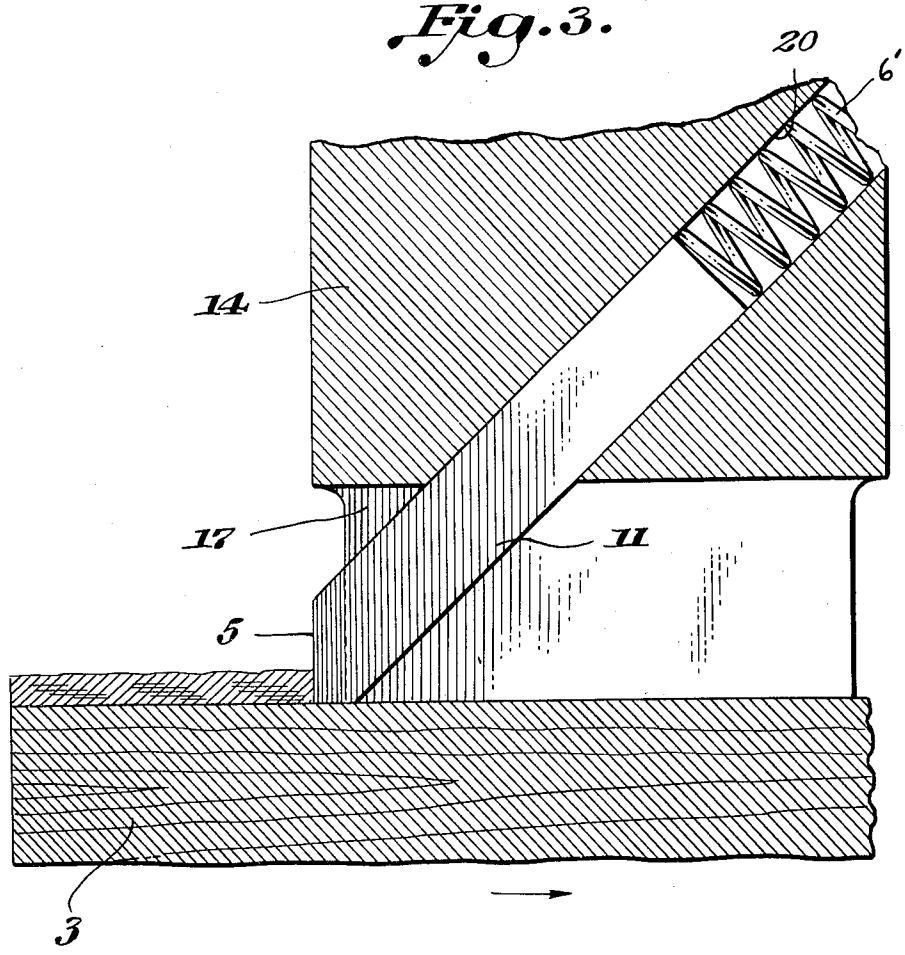
INVENTOR.
B. Valo,
BY
Wenderoth, Lind & Ponack
ATTYS.

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Fig. 3.



INVENTOR.
B. Valo,
BY
Wenderoth, Lind & Ponack
ATTYS.

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BARK-REMOVING MACHINE HAVING CUTTERS YIELDABLY MOUNTED FOR RIDING-OVER OBSTACLES

Bruno Valo, Lohja, Finland

Application December 4, 1952, Serial No. 324,013

Claims priority, application Finland March 21, 1952

6 Claims. (Cl. 144—208)

The invention relates to a device for removing bark from logs.

Machines of this kind are known in which the logs to be peeled are carried in longitudinal direction by endless conveyors through one or several sets of stationary cutters, which are arranged circumferentially around the log and in a shaving-like manner peel the bark from the moving log surface. The cutters are according to known proposals mounted in arms which are turnable around one single bearing point.

The drawback of said known arrangements is that a cutter, mounted in an arm which is only turnable around one single bearing point will never be able to yield or give way sufficiently if the cutter encounters a hard obstacle, such as a branch. Such cutters will therefore always run the risk of jamming in the harder parts of the log surface. As a matter of fact the problem how to build cutters by which the risk of either being demolished or jammed when encountering hard obstacles is not hitherto solved.

The object of the present invention is the provision of a machine of the initially described character wherein the supports for the cutters are set in a unique and new manner so as to eliminate said disadvantages.

The main object of the invention is thus to arrange the cutters of the machine in such a way that they, when encountering a hard obstacle will simultaneously yield in the longitudinal direction of log travel and radially outward from the log surface.

Another feature of the arrangement is that the angle between the cutting edge and the log surface is always maintained constant irrespective of the yielding movements of the cutter.

Still another feature of the invention is the shape of the cutter's cutting edge, this being ground to form two surfaces at substantially right angles to each other, one surface being parallel to and abutting the log surface while the other surface is positioned at right angles thereto.

With these and other objects in view the invention consists in the features of construction as will be hereinafter more fully described in detail with reference to the accompanying drawing, which diagrammatically shows preferred embodiments of the arrangement.

In the drawing:

Fig. 1 is an end view of the machine showing the cutting elements arranged circumferentially around the log, the end of which is shown in the center of the figure.

Fig. 2 is a fragmentary vertical section as indicated by the line 2—2 in Fig. 1, and shows one of the cutters and part of the cutter support in side elevation.

Fig. 3 is a vertical section of another arrangement of the cutter support according to the invention.

Similar reference characters indicate corresponding parts throughout the several figures in the drawing.

Referring to Fig. 1 the machine comprises a support arrangement for ten cutters 1, each of which is pivotally mounted between a pair of spaced flanges 4*a* of an annular support plate 4, having a hole 7 through which the log to be peeled is moved. A pair of spaced links or arms 2 are

pivoted at one end about parallel axes to each of the flanges 4*a* by pins *b* and *b'* and the cutter 1 is pivoted about parallel axes to the other end of opposed pairs of the arms 2 by pins *a* and *a'*, the pivot axes of the pins *b* and *b'* also extending parallel to the pivot axes of the pins *a* and *a'*. The cutting edge of the cutter is ground so as to have one surface 5 extending perpendicularly to the surface of the log and another surface abutting the log surface and being situated parallel to it. Said arrangement of the cutting edge of the cutter is important for preventing the cutter from jamming into the log surface, which unavoidably would occur if the angle between the cutter surface 5 and the unpeeled part of the log surface would be greater than a right angle.

The cutters 1 are pressed against the log surface by means of resilient pressing devices such as springs 6. If the cutter when the log is carried by its conveyor through the central hole 7 in the support plate 4 in the direction indicated by the arrow A encounters a hard obstacle in the log surface the cutter will yield and will be shifted by a swinging movement relative to the pivot pins *a*, *a'* and *b*, *b'* to some position such as that shown in phantom outline in Fig. 2. During this movement the cutter travels backwards in the direction of the arrow A as well as away from the log surface. On account of the provision of the two parallel and equal arms 2 the angle between the edges of the cutter 1 and the surface of the log will always remain constant, since such angle does not vary with the swinging movement or position of the cutter.

According to Fig. 3 the cutters 11 are arranged to move according to the same rule as in the foregoing figures, the difference being, however, that no support arms for the cutters are provided. Instead thereof the carrier plate 14 is provided with guiding grooves 20 situated in an inclined position relative the surface of the log and in which grooves the cutters 11 are arranged in the same inclined position as is shown in Figures 1 and 2. Even in the embodiment of the invention according to Fig. 3 pressing means, such as springs 6' are provided for pressing the cutter against the log surface. The device works also substantially in the same manner as the aforedescribed embodiment of the device. If the log, which is moved through the hole 17 in the stationary support frame 14 comprises hard obstacles in the surface, the cutter 11 will be pressed longitudinally into the guiding groove 20, the result being that the cutter edge becomes displaced as well backwards as upwards from the log, the angle between the edge and the log, however, remaining unchanged.

The position of the front surface 5 of the cutter is of great importance for the self-adjusting operation of the cutters. If for instance a thick log is following after a thin one through the cutter support hole 7 or 17 the cutter front edge 5 will hit against the log end surface. Whilst a sharp or inclined cutter edge now would cut into the log end and fasten there, this does not happen with the cutter according to the invention. This cutter will simply be pushed backwards and due to its simultaneous radially outward movement the front surface 5 will glide off the log end and ride onto the softer bark layer and commence the peeling operation at the right place.

While the preferred embodiments of the instant invention has been illustrated and described it will be understood it is not intended to limit the scope of the invention thereto, as many minor changes in detail of construction may be resorted to.

What I claim is:

1. A self-adjusting log peeler comprising a support, at least one elongate cutter element for removing bark from a log moving axially and relatively thereto, said cutter element being mounted in said support for movement toward and away from the surface of a log being debarked, and said cutter element being mounted so that its longi-

tudinal axis, when considered from an outer end of the cutter element toward the cutting end, overlies a bark-free portion of such log being debarked and inclines toward an unbarked portion of such log, said longitudinal axis of the cutter element, during said movement of the cutter element maintaining a substantially constant angle of inclination to a longitudinal axis of a log being debarked, and resilient means urging said cutter towards such log whereby the cutter element, when encountering a hard obstacle, can overcome the effect of said resilient means and ride over such obstacle.

2. A log peeler as described in claim 1 in which the peeling edge of the cutter element is ground to form a substantially right angle of which one side is parallel to an abutting log surface and the other side is located vertically thereto.

3. A log peeler as described in claim 1, in which said cutter element is slidably mounted in a guiding groove provided in said support, said guiding groove having the same inclination as said longitudinal axis of the cutter element, and in which said resilient means comprises a spring.

4. A log peeler as described in claim 3 in which the peeling edge of the cutter element is ground to form a

substantially right angle of which one surface is parallel to an abutting log surface and the other surface is located vertically thereto.

5. A log peeler as described in claim 1, said support comprising an annular frame having a central hole through which a log is moved, a plurality of flanges on said support, and there being a plurality of cutter elements mounted on said flanges, each cutter element being pivoted to at least two parallel arms on two transverse axes spaced along said longitudinal axis of the cutter element, and said two parallel arms being swingably mounted on their associated flange.

6. A log peeler as described in claim 5 in which the peeling edge of each of the cutter elements is ground to form a substantially right angle of which one surface is parallel to an abutting log surface and the other surface is located vertically thereto.

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