

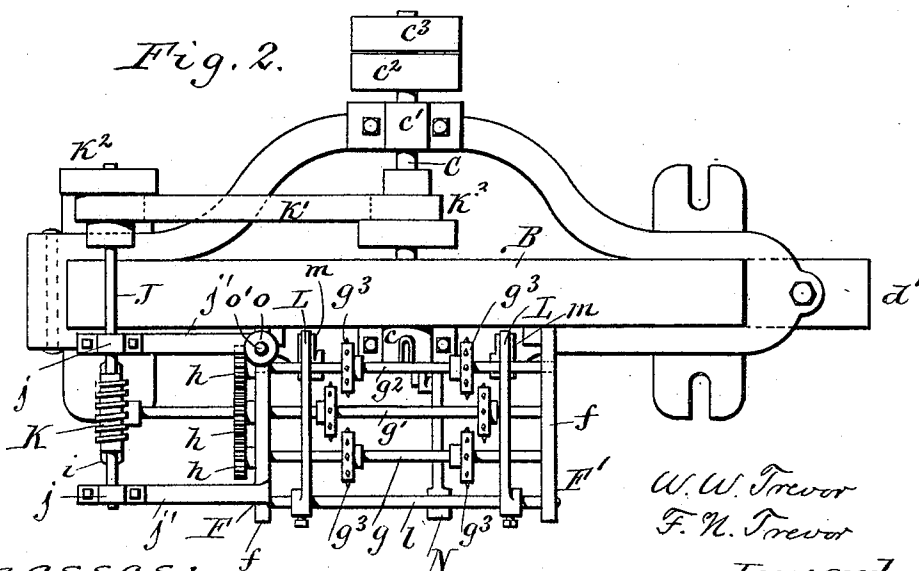
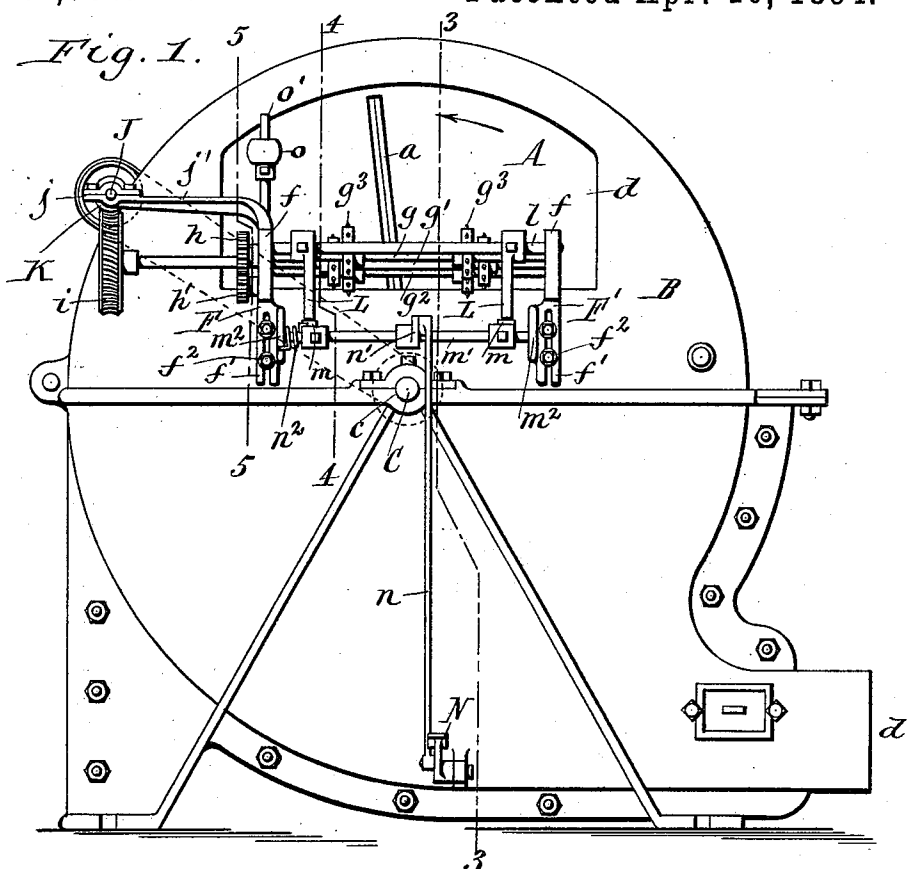
(No Model.)

2 Sheets—Sheet 1.

W. W. & F. N. TREVOR.
MACHINE FOR BARKING LOGS.

No. 517,990.

Patented Apr. 10, 1894.



Witnesses:

Theo. L. Popp.
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Attorneys.

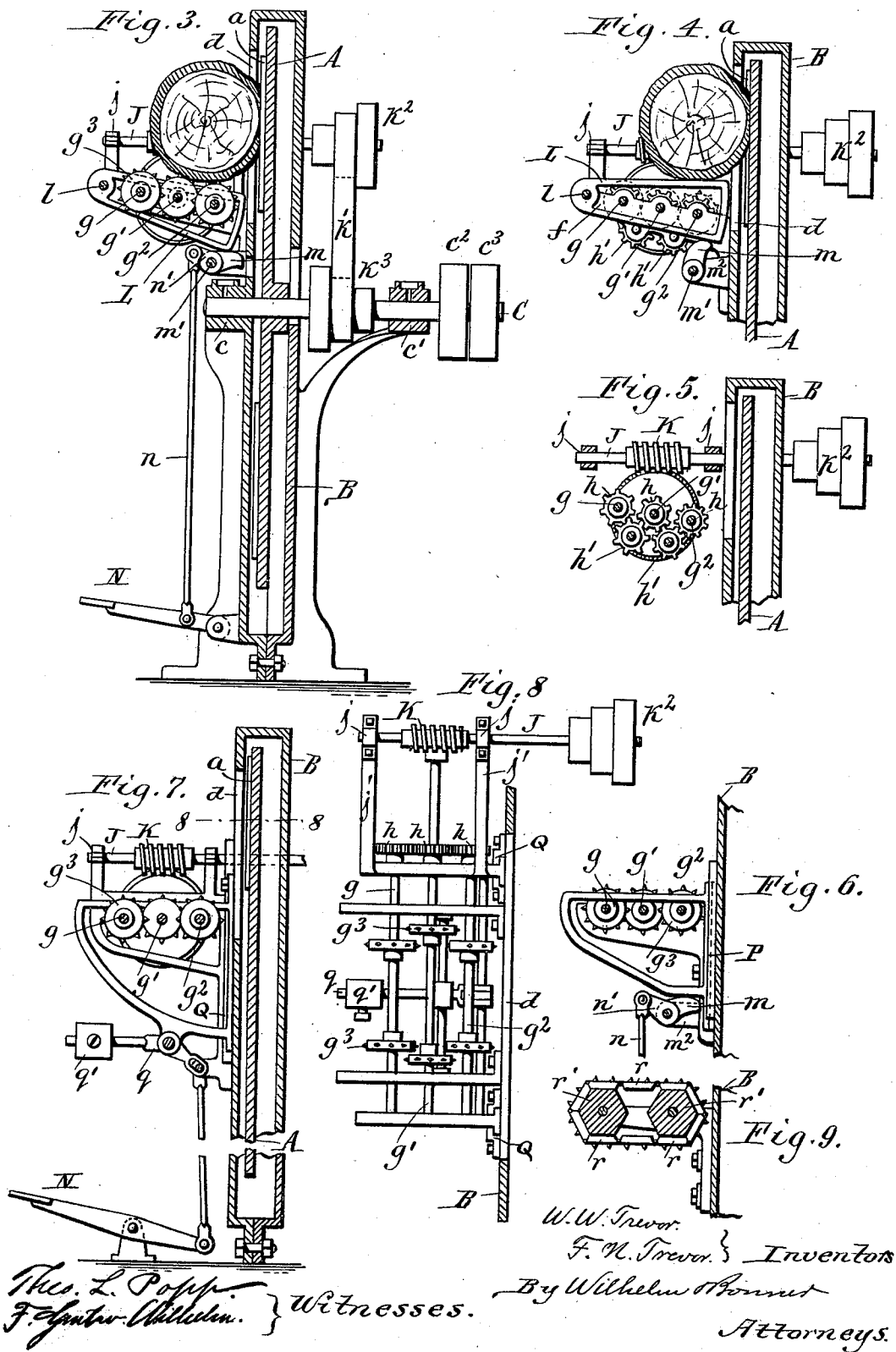
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UNITED STATES PATENT OFFICE.

WILLIAM W. TREVOR AND FRANCIS N. TREVOR, OF LOCKPORT, NEW YORK.

MACHINE FOR BARKING LOGS.

SPECIFICATION forming part of Letters Patent No. 517,990, dated April 10, 1894.

Application filed May 29, 1893. Serial No. 475,819. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM W. TREVOR and FRANCIS N. TREVOR, citizens of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented new and useful Improvements in Machines for Barking Logs, of which the following is a specification.

This invention relates to that class of machines for removing the bark from logs intended for the manufacture of wood pulp, which consist of a vertical rotating cutter disk arranged in a case and provided on the front side of the disk with supports on which the logs are placed and rotated in contact with the cutters.

The object of our invention is to improve the devices whereby the logs are presented to the cutter disk.

In the accompanying drawings consisting of two sheets: Figure 1 is a front elevation of our improved machine for barking logs. Fig. 2 is a top plan view of the same. Figs. 3, 4, and 5, are vertical transverse sections in lines 3—3, 4—4, and 5—5, Fig. 1, respectively. Fig. 6 is a fragmentary vertical section, similar to Fig. 3, showing the log lifting arm arranged to slide in vertical guides. Fig. 7 is a vertical section showing a modification of our invention in which the feed rollers are arranged to move vertically while the lifting arms are stationary. Fig. 8 is a horizontal section in line 8—8, Fig. 7. Fig. 9 is a fragmentary sectional elevation showing an endless traveling apron for feeding the logs toward the cutter.

Like letters of reference refer to like parts in the several figures.

A represents the vertical cutter disk which is provided on its front side with cutters *a* arranged radially, or at an angle, and which is arranged in an inclosing case B. The cutter disk is mounted on a horizontal shaft C which is journaled in bearings *c c'* arranged on the front and rear sides of the case. The shaft is provided in rear of the rear bearing *c'* with tight and loose pulleys *c² c³*. The case is provided in the upper portion of its front side with an opening *d* through which the logs are presented to the cutters of the disk. The lower portion of the case is provided on one side with an outlet *d'* through which the shavings and bark detached from the logs are discharged.

The logs from which the bark is to be removed are supported in front of the face opening of the case and automatically rotated and fed toward the cutter disk by a feed mechanism which is constructed as follows:—F F' represent two brackets, each of which consist of an arm *f* projecting forwardly from the case, and a vertically slotted leg *f'* secured to the front side of the case below its face opening by bolts *f²* passing through the slots of the legs. *g g' g²* represent a number of feed shafts arranged across the front of the case at right angles to the shaft of the cutter disk and journaled in bearings formed in the arms of the brackets F F'. Each of these shafts is provided with feed rollers or wheels *g³* upon which the logs rest during the operation of removing the bark therefrom. The feed wheels are provided with spurs or teeth on their periphery, to obtain a better grip on the logs, and the wheels are so rotated that their upper portions move toward the cutter disk whereby the logs are forced against the cutter disk and at the same time rotated, so that the entire surface of the logs is presented successively to the cutters. The feed wheels are secured to the feed shafts by set screws, or otherwise, so that they can be adjusted lengthwise on the shafts for different lengths of logs. The feed shafts are preferably arranged at different elevations, the front shaft *g* highest and the central and rear shafts *g' g²* successively lower, so that the tops of the feed wheels slope from the front of the machine toward the cutter disk, which causes the logs to roll toward the cutter disk, thereby aiding the feed wheels and facilitating the handling of the logs. Each of the feed shafts is provided outside of the bracket F with a gear wheel *h* and these shafts are rotated in the same direction by idler wheels *h'* which connect the adjacent gear wheels and which are journaled upon arbors arranged on the outer side of the bracket F. One end of the central feed shaft *g'* is extended beyond the ends of the adjacent feed shafts and is provided with a worm wheel *i*. J represents a transverse counter-shaft arranged over the cutter case and journaled in bearings *j* which latter are formed in the outer ends of arms *j'* arranged on the bracket F. K represents a worm mounted on the counter-shaft between its bearings and meshing with the worm wheel, whereby the

latter and the feed shafts connected therewith are driven. The counter-shaft is driven by a belt k' running around a cone pulley k^2 arranged in the rear end of the counter-shaft and a similar cone pulley k^3 arranged on the cutter disk shaft between its rear bearing and the case. L represents lifting arms whereby the logs are lifted from the feed wheels when it is desired to remove the logs or to turn the same by hand for the purpose of removing particles of bark remaining on the logs. These lifting arms are arranged between the brackets $F F'$ and extend from the front side of the case to the front ends of the brackets. The lifting arms are preferably formed in the shape of open frames and the feed shafts pass through the same. The front ends of the lifting arms are secured to a rock shaft l , which latter is arranged parallel with the feed shafts and is journaled with its ends in bearings formed in the outer ends of the arms of the brackets $F F'$. When the machine is in operation, the lifting arms are depressed below the tops of the feed wheels to permit the logs to rest on the feed wheels. m represents cams whereby the lifting arms are raised for the purpose of raising the logs from the feed wheels. These cams engage against the under side of the free rear ends of the lifting arms and are secured to a rock shaft m' which latter is arranged across the front of the case and is journaled with its ends in bearings m^2 formed on the legs of the brackets $F F'$. N represents a treadle whereby the cams are turned up, so that their salient portions engage with the lifting arms and raise the same above the feed wheels. This treadle is pivoted to the lower front side of the case and is connected by a rod n with a forwardly projecting arm n' secured centrally to the cam rock shaft. The throw of the cams is sufficient to raise the upper sides of the lifting arms above the feed wheels and into a horizontal position, or nearly so, so that the log will not tend to roll by its own weight toward the cutter mechanism. When the treadle is released the cams are turned down so as to drop the lifting arms below the feed wheels. This downward movement of the lifting arms is effected or facilitated by a spiral spring n^2 which surrounds the rock shaft m' and bears with its ends against one of the bearings m^2 and one of the cams. O represents the usual thrust roller which is supported on a post o' arranged on one of the brackets and against which one end of the log is held by the pressure of the cutters.

Instead of pivoting the lifting arms, as shown in Figs. 1 to 4, they may be mounted at their rear ends in vertical guides P secured to the front side of the case, as represented in Fig. 6.

In the modified construction represented in Figs. 7 and 8, the lifting arms are rigidly secured to the case and the brackets, supporting the feed wheels, are arranged to slide vertically in guides Q arranged on the front side

of the casing. In this construction, the weight of the feed wheels and connecting parts is preferably counter balanced by a lever q pivoted to the lifting arms and connected with one arm to the movable brackets and provided on its other arm with a weight q' . In this construction the feed wheels are held above the lifting arms in their operative position and dropped below the lifting arms when not required for use.

If desired, an endless apron composed of pivotally connected slats r and running around supporting rollers r' may be substituted for the feed wheels, as represented in Fig. 9.

We claim as our invention—

1. The combination with the rotating cutter disk, of feed wheels and lifting arms arranged in front of the disk and made vertically movable with reference to each other, whereby either the feed wheels or the lifting arms can be made to support the log, at desire, substantially as set forth.
2. The combination with the rotating cutter disk, of feed wheels and vertically movable lifting arms arranged in front of the disk, and mechanism whereby the lifting arms can be raised above the feed wheels, substantially as set forth.
3. The combination with the rotating cutter disk and its case, of feed wheels journaled in brackets secured to the case, lifting arms supported at their front ends by a rocking support, and mechanism whereby the rear ends of the lifting arms can be raised, substantially as set forth.
4. The combination with the rotating cutter disk and its case, of feed wheels mounted on shafts arranged across the face of the cutter disk, lifting arms composed of open frames through which said shafts pass, and mechanism whereby said frames and shafts can be raised and lowered relatively to each other, substantially as set forth.
5. The combination with the rotating cutter disk and its case, of feed wheels arranged in front of the cutter disk, lifting arms capable of vertical movement, cams pivoted to the case and connected with said lifting arms, and a treadle whereby said cams are operated, substantially as set forth.
6. The combination with the rotating cutter disk and its case, of brackets secured to the front of said case, feed wheels mounted on shafts which are journaled in said brackets, a rock shaft journaled in said brackets, lifting arms secured with their front portions to said rock shaft, and a lifting mechanism connected with the rear ends of said lifting arms, substantially as set forth.

Witness our hands this 23d day of May, 1893.

WILLIAM W. TREVOR.
FRANCIS N. TREVOR.

Witnesses:

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ED. W. DAMEROW.