



# United States Patent Office.

JOHN G. CURTIS, OF EMPORIUM, PENNSYLVANIA.

Letters Patent No. 101,984, dated April 19, 1870.

## IMPROVEMENT IN BARK-MILLS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN G. CURTIS, of Emporium, in the county of Cameron and State of Pennsylvania, have invented a new and improved Bark-Mill; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention relates to improvements in bark-mills, and consists in an arrangement, with a pair of metal cylinders with notched teeth formed on them in circular rows, with plain grooves between them—one having coarse and the other finer teeth, and the one with the coarser teeth being arranged in a suitable case above the other—of strong metal plates, with projections corresponding to the grooves in rollers, and notches corresponding to the teeth, fitted in the sides of the case for adjustment to or from the rollers, and for action in connection with the toothed rollers for grinding the bark fed into the case at the top, to be first acted on by the coarse or breaking-roller; in connection with which, at the point of receiving the bark, there is a strong iron block permanently attached to the case, and having projections and grooves acting in conjunction with the roller, for breaking the bark into coarse pieces before passing to the lower breaking-plates; and, in connection with the lower breaking-roller, there is a plane roller, between which and the said lower roller the bark passes, after leaving the first roller, and is again acted upon before reaching the lower adjustable notched plates, by which, in connection, the final action is produced.

Figure 1 is a side elevation of my improved bark-mill, a part of the case being broken out; and

Figure 2 is a transverse sectional elevation of the same.

Similar letters of reference indicate corresponding parts.

A is the case, which I prefer to make of cast metal, and in the oblong form represented for the reception of the two toothed rollers B C, one above the other.

These rollers are designed to be made of cast metal, with notched rings or flanges, forming teeth D E, with annular grooves between them. The notches forming the teeth in the said flanges or rings are preferably arranged so that the teeth will be in spiral lines from end to end of the roller.

F is a strong block, of cast metal, arranged in the top of the case, parallel to the roller B, and with a face, G, pitched from the top of the case near the vertical line of the axis of the roller, tangentially, or nearly so, to the side of the roller, moving downward within the case when grinding.

This face is provided with projections H, coinciding with the grooves of the roller B, by which the bark, being fed to the roller through the openings in the top, will be broken into large pieces in passing below the said block F.

I is a shelving board in the top of the case, to conduct the bark to the grinding side.

K is a cast-metal plate, arranged in ways in the case, at or about the horizontal line of the roller, to slide to or from it, and is provided with screws L, to force it up.

This plate is provided with projecting points M, coinciding with the grooves in the roller, and projecting into the same to the bottom.

N is a similar plate, arranged on the opposite side, in a similar way.

O are guides or chutes under the roller B, for conducting the broken bark to the top of the roller C between it and the smooth roller P, which presses the pieces down onto the notches of the roller C.

Q R are other notched cast-metal or steel plates, arranged in ways in the case to slide to or from the roller C, and have projections taking into the grooves of the rollers. They are also provided with adjusting-screws.

The projections prevent the bark from passing by the plates in the grooves, and cause it to be acted on by the teeth more intensely and efficiently. These plates may be placed only on the front sides of the rollers, or on both front and back sides, as found best.

As the teeth and the projections wear away, the plates may be moved up toward the rollers, and thereby these mills will grind the bark to the same degree of fineness, until worn out.

The roller P may be used or not, as preferred, but I prefer to use it. Motion is imparted to it by the friction of the bark upon it.

The other rollers should be geared together so as to have about the same surface-speed, and the driving-power may be applied to either in any suitable way.

One of these rollers may be used with its adjustable plates alone, but I prefer to use two, and three may be used with good results.

The roller C may be made of saws, and rings interposed between them to make the grooves, and all clamped together on a shaft by a nut and screw, and, instead of making the plates Q and R in one piece, they may be made of short parallel bars, of the same thickness as the saws and rings.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

The combination of cylinder B with teeth D, winding in spiral lines, to act singly and successively with isolated and projecting adjustable teeth K N and stationary teeth H, when all these parts are arranged and constructed as herein described, and for the purpose set forth.

The above specification of my invention signed by me this 19th day of November, 1869.

JOHN G. CURTIS.

Witnesses:

JNO. DAY,

A. J. MOOR.