J. HELENBROOK.

Bark Mill.

No. 111,744. Patented Feb. 14, 1871.

Fig. 1.

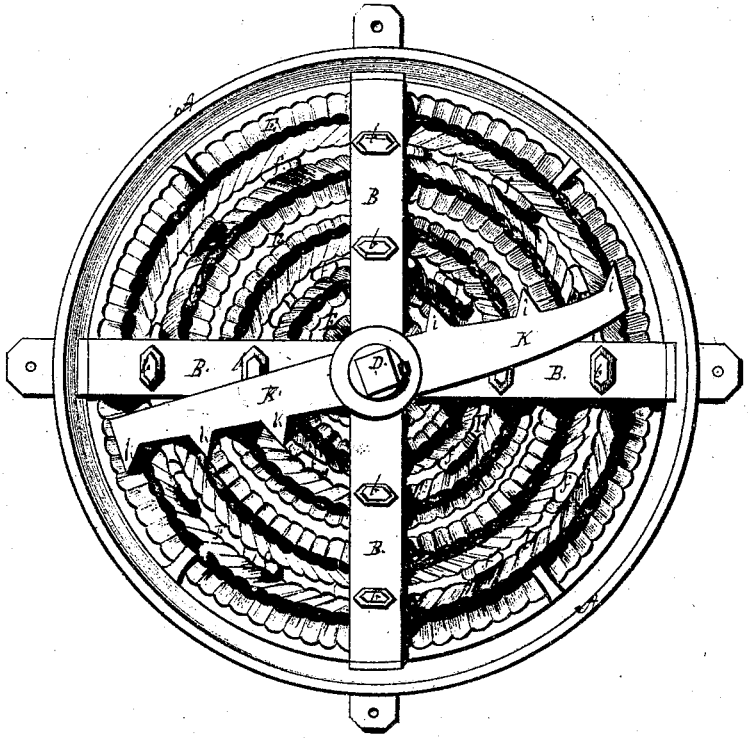
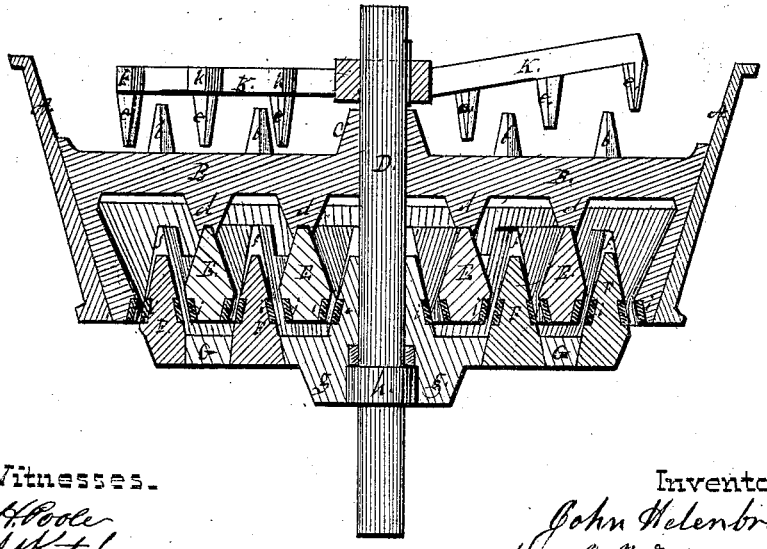


Fig. 2.



Witnesses.

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JOHN HELENBROOK, OF OLEAN, NEW YORK.

Letters Patent No. 111,744, dated February 14, 1871.

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 HELENBROOK, of Olean, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Bark-Mills; and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a plan or top view of the hopper, breaking, crushing, and grinding apparatus.

Figure 2 shows a sectional view through the mill, with the arrangement of all the working parts and their relation to each other for operating, as hereafter more fully described.

The object and nature of my invention are to break up, crush, and grind bark for tanning purposes; and

It consists in the inclined pronged sweep for breaking up and feeding in the bark.

General Description of Parts.

The hopper A A, which surrounds the breaking, crushing, and grinding mechanism, and receives the bark to be ground, may be made of cast-iron or of wrought sheet metal, and may be supported on and secured to the frame-work of the building or on a separate frame, as may be desired.

The stationary portion of the crushing and grinding mechanism is secured within the hopper A A, and it consists of bars, B B, forming a right-angle frame, the center of which forms the journal-box C for the upper end of the vertical shaft D to run in.

The bars B B are provided with prongs, *b b*, projecting upward from their surface, which are a part of the breaking mechanism.

On the under side of the bars B B are lugs or prongs, *d d*, projecting down, to which the series of circular, cone-shaped, notched, or serrated stationary grinding-rings E E is secured, and held firmly to the frame in the lower portion of the hopper A A.

The corresponding series of rotating rings, F F, is notched or serrated in the same manner as the stationary grinding-rings E E, and may be cast on or secured to the arms G G at such a position as to fit nicely in the spaces between the stationary rings E E, so that the bark is ground or pulverized on both sides of the cone-rings in all of the spaces.

The arms G G are provided with lugs, *g g*, on the under side, by which the cone serrated rings F F are rotated by the action of the clutch *h* on the shaft D, which will admit of the series of rings F F being moved up or down on the shaft, so as to grind the bark coarser or finer, as may be desired.

On the upper edges of the rotating rings or bars F F is a series of projecting hooked prongs, *f f f*, for the purpose of breaking strips of bark so that it will readily feed in to be pulverized after it is broken up coarsely by the revolving sweeping arm K, which is secured to the vertical shaft D above the frame B B.

One arm of the sweep K is inclined upward on an angle of about five degrees, and is provided with prongs, *e e e*, on its under side, which pass between the projecting prongs *b b* on the upper side of the bars B B, to crush and break up the bark so that it will readily feed in to be ground or pulverized by the mechanism beneath it.

The sweep K is also provided with sharp angular projections, *k i k*, to aid in breaking up the bark and prevent it from being forced out against the outer portion of the hopper, and to give great durability and efficiency.

The lower portion of all of the cone-shaped serrated annular grinding-rings E and F is cast on a chill and made very hard; or tempered steel serrated bands, *i i i i*, may be fitted on the bottoms of the rings or bars of both the stationary and rotating grinders E E and F F, as shown in fig. 2, so that they can be taken off and sharpened, should they become worn and dull by use.

What I claim as my improvements is—

In the bark-mill herein described, the arrangement of the sweep K, with one of its arms elevated and provided with projections *k k* and prongs *e e e*, in combination with the frame-bars B B, provided with prongs *b b*, when all the parts are constructed and arranged as shown and described, for the purposes set forth.

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.

JOHN HELENBROOK.

Witnesses:

JOHN SCHENKEL,

C. S. STOWELL.