R. R. ANDREWS.

Apparatus for Leaching Tan-Bark.

No. 218,212. Patented Aug. 5, 1879.

Fig. 2.

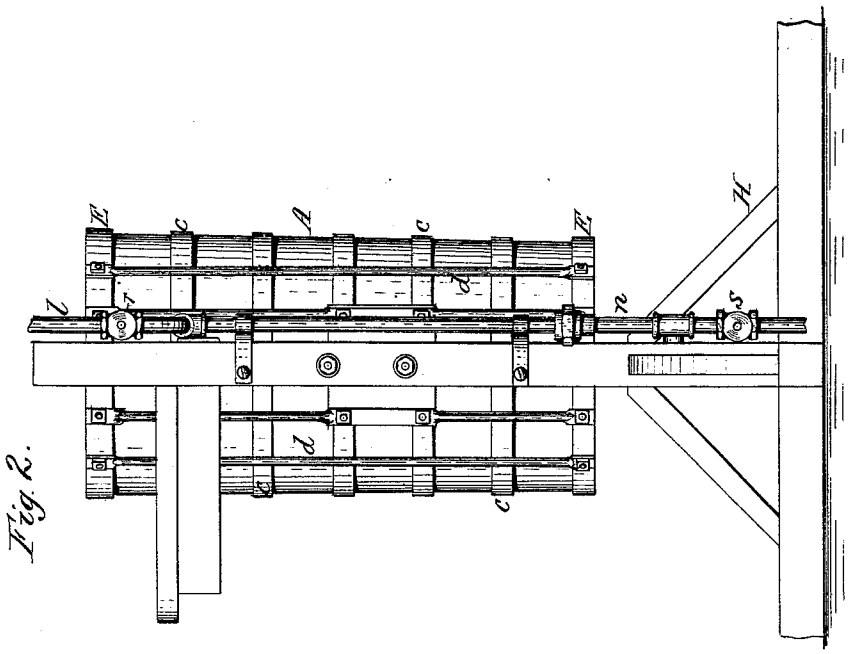
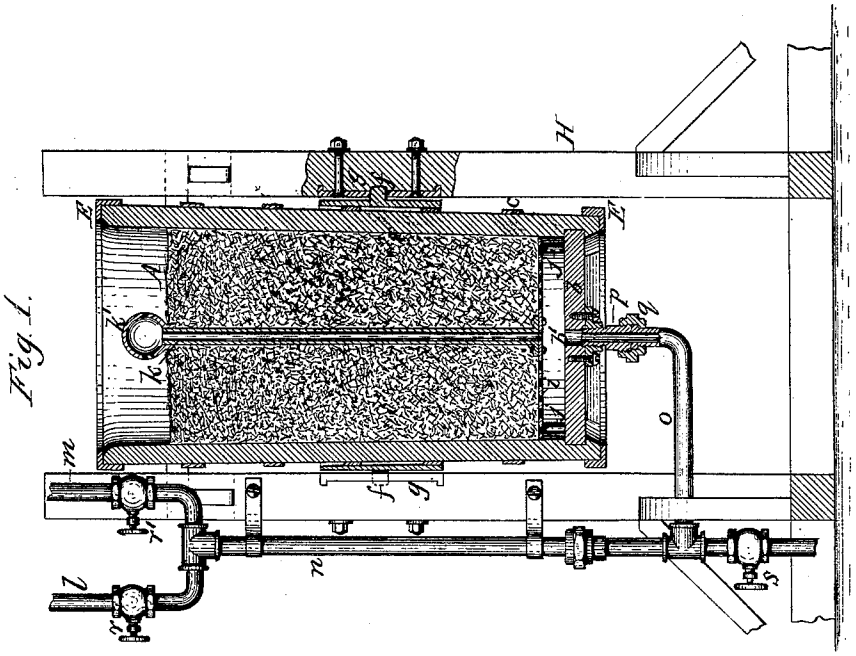


Fig. 1.



Witnesses.

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IMPROVEMENT IN APPARATUS FOR LEACHING TAN-BARK.

Specification forming part of Letters Patent No. **218,212**, dated August 5, 1879; application filed May 22, 1879.

To all whom it may concern:

Be it known that I, RANSOM R. ANDREWS, of Smethport, in the county of McKean and State of Pennsylvania, have invented new and useful Improvements in Apparatus for Leaching Tan-Bark, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to a leaching apparatus which is especially designed for leaching tan-bark.

The object of my invention is to produce a leaching apparatus in which the soluble constituents of the bark may be rapidly and completely extracted from the latter, and in which the spent bark is easily discharged from the tub or vessel in which the operation of leaching is performed, thereby rendering the tub very efficient and convenient in its operation.

My invention consists of the particular construction and arrangement of the tub and its concomitant parts, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved leaching apparatus. Fig. 2 is a side elevation thereof at right angles to Fig. 1.

Like letters of reference designate like parts in both figures.

A represents the leaching-tub, constructed in the form of a cylindrical vessel, of any suitable material, made open at the top, and provided with a tight bottom, *b*, having a central opening, *b'*.

As shown in the drawings, the tub A is constructed of staves held together by hoops *c*, and tied together longitudinally by rods *d*, having their ends connected to chine-rings E, which overlap the top and bottom ends of the staves. *f f* are trunnions secured to opposite sides of the tub A, above its center of gravity, so as to cause the tub A to be suspended with its tight bottom downward, but at the same time permit the tub to be inverted with a slight effort.

g g are the trunnion-bearings, attached to the upright posts of the stationary frame H, for the reception of the trunnions *f*. *i* is a perforated plate or diaphragm arranged in the tub A at a short distance above the tight bottom *b*, and *k* is a vertical pipe arranged centrally in the tub A, and extending from the perforated plate *i* to within a short distance from the top of the tub, where it is provided with a suitable sprinkler, *k'*. The lower end of the pipe *k* opens into the space between the bottom *b* and perforated plate *i*, directly above the opening *b'*. The diaphragm *i* is arranged removably in the tub A, and provided on its under side with short posts or legs *j*, which support the diaphragm at the proper distance above the tight bottom *b*.

l is a steam-pipe, and *m* a water-pipe, both connected to the upper end of a vertical pipe, *n*, which is secured to the frame H, and extends downwardly below the plane of the bottom of the tub A, where it is provided with a horizontal branch pipe, *o*, which latter terminates underneath the central opening, *b'*, in the bottom *b* of the tub. *p* is a short pipe provided with a screw-thread, and secured to the under side of the bottom *b*, and *q* is a union-nut arranged upon the upturned flanged end of the horizontal branch pipe *o*, for tightly connecting the latter to the short pipe *p*, as shown in Fig. 1. *r r'* are stop-cocks arranged, respectively, in the steam and water pipes *l m*, and *s* is a stop-cock arranged in the vertical pipe *n* below the horizontal pipe *o*.

The parts being connected as shown in Fig. 1, the ground tan-bark is placed within the tub A, upon the perforated bottom *i*, to within about twelve inches of the top of the tub. The stop-cocks *r* and *s* being closed, the cock *r'* is opened and the tub A filled with water, so that the water-level stands about ten inches above the tan-bark. The water-cock *r'* is now closed and the cock *r* opened, whereby steam is admitted to the tub through the pipes *n* and *o*. The steam, in entering the tub underneath the pipe *k*, forces the water up through the latter and out through the sprinkler *k'*, whence it falls in a shower or spray upon the tan-bark, and percolates through the same back into the space below the perforated plate *i*. In this manner a circulation of water is kept up through the tub, and the soluble constituents of the tan-bark contained therein are rapidly and completely extracted. The tan-bark gradually becomes compressed and packed upon the perforated plate *i* by the downward pressure of the water-current, and the coloring sub-

stances and resinous matter are constantly drawn away from the bottom and delivered at the top of the tan-bark, where they remain. This operation of leaching is carried on until the tan-bark is exhausted, when the cock *r* is closed and the cock *s* opened, whereby the liquor is discharged from the bottom of the tub through the pipes *o n* into any suitable receptacle. The coupling-nut *q* is then unscrewed and the tub inverted on its trunnions, when the spent bark is readily discharged from the tub. By withdrawing the perforated plate *i* and pipe *k*, all of the spent bark is readily dislodged and the tub left unobstructed, so that it can be thoroughly cleaned.

My improved leaching apparatus is very rapid and thorough in its operation, and at the same time very simple of construction, so that it can be constructed at comparatively small expense.

I claim as my invention—

An apparatus for leaching tan-bark, consisting of a tub, A, made open at the top and hung on trunnions *f*, a stationary frame, H, having trunnion-bearings *g*, a perforated diaphragm, *i*, and central sprinkler-pipe, *k*, arranged within the tub, and the steam and water pipes *l m n o*, and removable coupling *p q*, the whole being constructed and arranged as described, whereby a circulation of the liquid through the tub may be maintained until the operation of leaching is completed, when the liquor may be drawn off and the tub disconnected and inverted for discharging the spent bark, substantially as set forth.

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Witnesses:
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