R. HEALY.

MACHINE FOR ROSSING BARK.

No. 38,861. PATENTED JUNE 9, 1863.

Fig. 1.

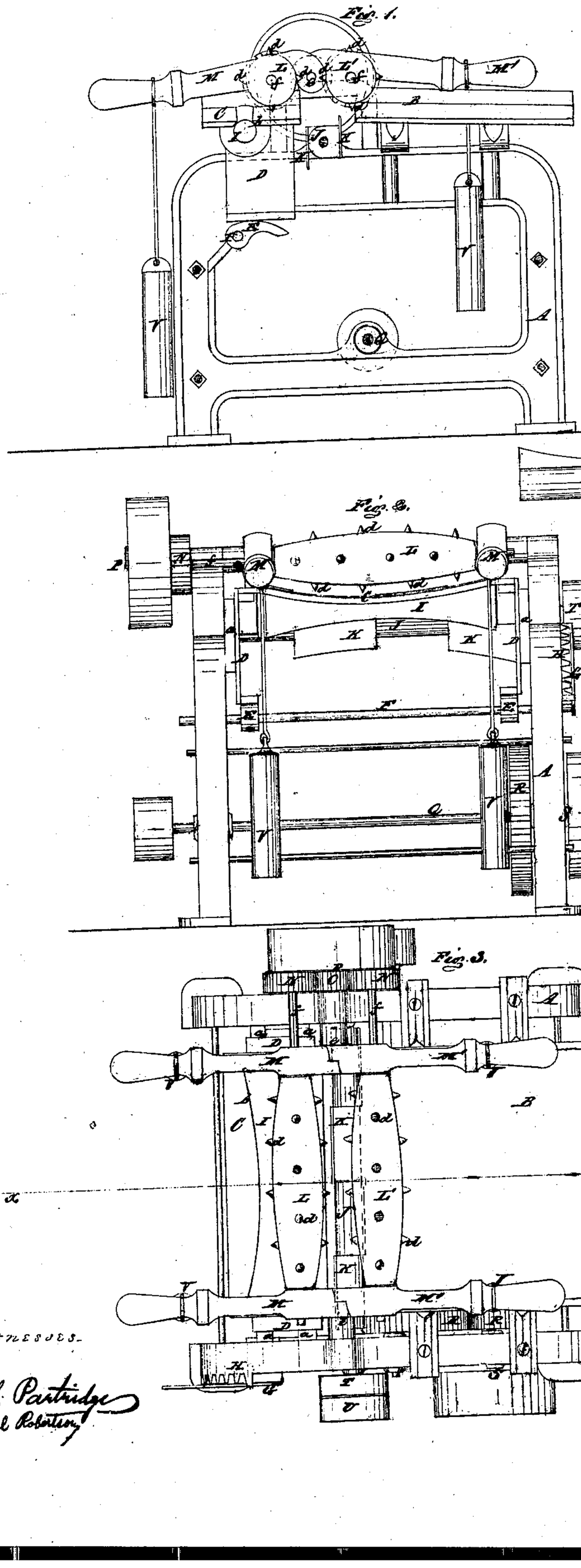

Fig. 4.

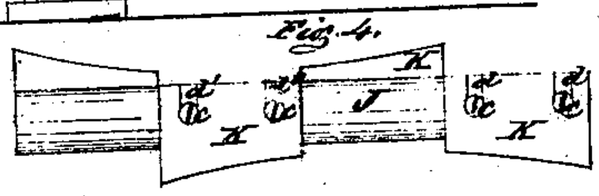

Fig. 2.

Fig. 3.

Witnesses.

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RICHARD HEALY, OF SWANTON FALLS, VERMONT, ASSIGNOR TO HIMSELF AND SAMUEL GOLDEY, OF SAME PLACE.

MACHINE FOR ROSSING BARK.

Specification forming part of Letters Patent No. **38,861**, dated June 9, 1863.

To all whom it may concern:

Be it known that I, RICHARD HEALY, of Swanton Falls, in the county of Franklin and State of Vermont, have invented a new and Improved Machine for Rossing Bark; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 3; Fig. 2, a front elevation of the same; Fig. 3, a plan or top view of the same; Fig. 4, a detached view of the rotary cutters and shaft.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved machine for stripping tanners' bark of the outer coating, which possesses no tanning properties. This process of stripping the outer from the inner layer of bark is technically termed "rossing," and it is essential that the work be perfectly done, for if any material quantity of the outer layer of bark be left on the inner one, the process of tanning leather is much prolonged and the leather when tanned has a dark color.

The object of this invention is to obtain a machine which will perform the work in a perfect manner, and which will strip the outer layer from the inner one without breaking the former and pulverizing it, as is done by the machines previously used for the purpose, so that the refuse or outer layer may be used for fuel.

To this end the invention consists in the employment or use of convex-toothed feed-rollers in connection with concave beds, one of which is adjustable, the feed-rollers being arranged in a novel way, and the beds and feed-rollers used in combination with cutters, also arranged in a novel way to operate in conjunction with the beds and rollers, as hereinafter fully set forth.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing, which may be constructed in any proper way to support the working parts of the machine, and B is a concave bed which is permanently attached to the upper part of the framing A. C is also a concave bed, the ends of which are attached to two upright plates, D D, the latter being fitted between guides *a a*, attached to the framing. The lower ends of the upright plates D D rest upon curved arms E E, which are placed on a shaft, F, one end of said shaft having an arm, G, attached to it, which may be retained in any desired position within the scope of its movement by means of a segment-rack, H, at one side of the framing. By moving the arm G it will be seen that the curved arms E E will raise the bed C or allow it to fall to the desired point. The bed C has a slot, *b*, made in it which extends its whole width, and just below this slot there is a concave roller, I. The journals of this roller I have their bearings in the upright plates D D, and the upper part of said roller is about flush with the upper surface of the bed C, the concave surface of the latter corresponding with the concave surface of the roller. The adjustable bed C is directly in front of the fixed bed B, but there is a space between them, just below which there is a shaft, J, having four cutters, K, secured to it. These cutters are constructed of flat steel plates attached to the shaft by screws *c*, which pass through slots *d'* in the plates into the shaft, and the cutters are arranged in pairs, attached to the opposite sides of the shaft J in such a position as to insure a cutting-edge the entire length of the shaft, the cutters of one pair being in line with the vacant spaces left by the other pair. This will be fully understood by referring to Fig. 4. The cutting-edges of the cutters K are of concave form, so that they will coincide with the concave form of the beds B C, and said cutters are of such a length that they will cut at a height corresponding with that of the upper surface of the fixed bed B. The cutter-shaft J, it will be understood, has its journals working in fixed bearings in the framing A.

L L' represent two convex feed-rollers, which are provided at their peripheries with teeth *d*. These feed-rollers correspond in form inversely with the upper surfaces of the beds B C, and one, L, is over the inner part of the bed C, while the other, L', is over the front end of the bed B, as shown clearly in Fig. 1. The roller L has its bearings in arms M M, the front ends of which are fitted loosely on

pins *e e* on the framing A, one at each side thereof, and the roller L′ has its bearings in similar arms, M′ M′, which are fitted loosely on the same pins *e e* as the arms M, the inner ends of the arms M M′ being lapped, forming a joint, of which the pins *e* are the pintles. The arms M′ have toothed wheels N N on them, which gear into a pinion, O, on a shaft, P, at opposite sides thereof, as shown in Fig. 3. The shaft P is driven by a belt from a shaft, Q, in the lower part of the framing, and the shaft Q is driven by gears R from a driving-shaft, S, from which the cutter-shaft J is driven by a belt, the shaft J having both a working-pulley, T, and a loose pulley, U, upon it, by which motion may be given the shaft T or the latter kept stationary, as desired. The arms M M M′ M′ have weights V attached to them, as shown in Figs. 1 and 2.

The operation is as follows: The shaft S is rotated by any convenient power, and the bark to be operated upon is laid lengthwise upon the bed C and shoved underneath the feed-roller L, which conveys it along over the cutters K, the latter removing the outer layer of bark. The concave form of the bed C and convex form of the rollers L L′ correspond to the curvature of the bark—that is to say, to the average form of the latter—and the bark is thereby prevented from being broken in its passage through the machine. The depth of the cut of the cutters K may be regulated as desired by adjusting the bed C higher or lower, which is done by moving the arm G, as previously described. By this adjustment of the bed C the outer layer may all be removed from the inner one and no more. The concave form of the cutters K enables them to cut in conformity to the shape of the bark or concentric therewith. The cut or rossed bark passes on the bed B, and is assisted at that point in its feed movement by the roller L′, the rossed bark passing entirely over the bed B and being discharged at its outer end. The roller I diminishes friction as the bark passes over the bed C. The rollers L L′ are made to bear with a sufficient pressure upon the bark by means of the weights V, and the operator may at any time temporarily increase the pressure of the front rollers, L, by pressing down on the arms M M thereof; or said roller L, as well the roller L′, may be raised free from the bark by raising the arms M M′. During this adjustment of the feed-rollers their driving mechanism will not be interfered with in the least, as the wheels N N always remain in gear with the wheel O, the shaft P of wheel O being in line with the pins *e e*, on which the arms M M′ are fitted and work as a center.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The fixed concave bed B and adjustable concave bed C, in combination with the concave rollers L L′, arranged to operate substantially as and for the purpose herein set forth.

2. The cutters K, provided with concave cutting-edges, and arranged on the shaft J, as shown, when said cutters, thus formed and arranged, are used in connection with the concave beds B C and convex feed-rollers L L′, for the purpose specified.

3. The particular arrangement of the feed-rollers L L′ with the arms M M′ and driving mechanism, as herein set forth, whereby said rollers may be raised and lowered and adjusted as circumstances may require without interfering with the driving mechanism.

4. The combination of the toothed feed-rollers L L′, concave beds B C, revolving cutters K, and roller I, all arranged for joint operation, as and for the purpose herein specified.

RICHARD HEALY.

Witnesses:

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DANIEL ROBERTSON.