J. Comie,

Rossing Bark.

No. 39,888. Patented Sep. 15, 1863.

Fig 3.

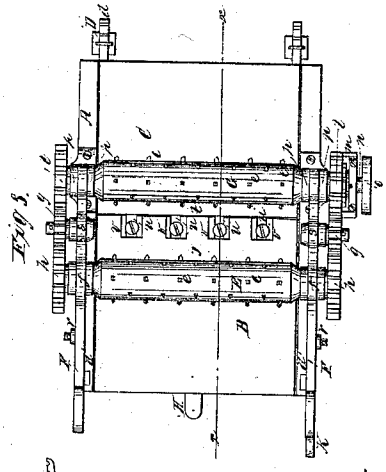


Fig 2.

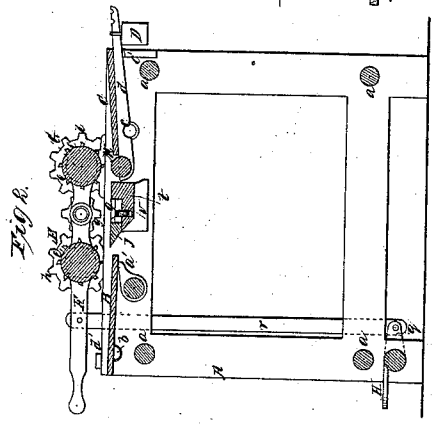


Fig 4.

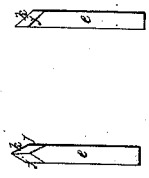
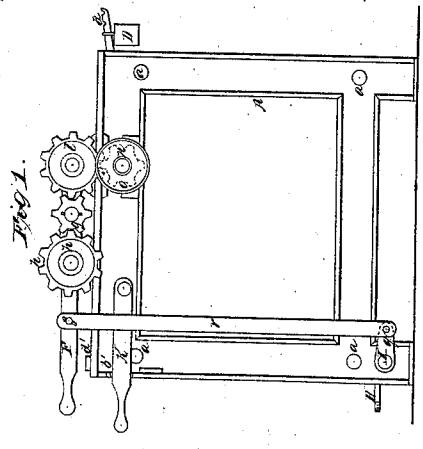


Fig 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN COWIE, OF PORTLAND, MAINE.

IMPROVED MACHINE FOR ROSSING BARK.

Specification forming part of Letters Patent No. **39,888**, dated September 15, 1863.

To all whom it may concern:

Be it known that I, JOHN COWIE, of Portland, in the county of Cumberland and State of Maine, 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, forming a part of this specification, in which—

Figure 1 is a side elevation of my invention; Fig. 2, a vertical section of the same, taken in the line *x x*, Fig. 3; Fig. 3, a plan or top view of the same; Fig. 4, detached views of a roller-tooth.

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

This invention consists in the employment or use of a stationary knife in connection with a feed and discharge roller and bed-plates, all arranged as hereinafter fully set forth, whereby it is believed that several advantages are obtained over the ordinary bark-rossing machines in use.

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

A represents the frame of the machine, of skeleton form, the two sides of which may be cast each in one piece, and connected together by struts or braces *a*, the lower ends of the legs being provided with suitable flanges for bolting the frame securely to the flooring.

B is a bed-plate attached to the upper part of the frame A by pivots or dowels *b*, one being at each side of the bed-plate near its outer end. This bed-plate B is allowed to work freely on these pivots or dowels, and an up-and-down adjusting movement allowed the inner end of said bed-plate, by means of arms attached to a shaft, and which will presently be described for the purpose of graduating or governing the cutting action of the knife in the passage of the tan-bark over it.

C is a second movable bed-plate at the discharge end of the machine, suspended by pivots *c* between the two sides of the frame A in much the same manner as the bed-plate B, with this difference, that the supporting-pivots *c* of C are placed between the center and the inner edge, and the outer edge held down by weights D, supported at different points on graduated arms *d*, attached one to each side of C.

E is a feed-roller, which may be of iron, and is of cylindrical form, and has its periphery provided with teeth *e* for seizing the bark and aiding its progress to the knife. This roller has its journals fitted in bearings *f*, which are in levers F F, said roller receiving its motion from pinions *g*, working in gear-wheels *h h* at each end of the roller E. The up-and-down movement can be communicated to this roller E by the action of the levers F F, to be presently described.

G is a roller similar in form to E, but not susceptible of a vertical movement, as it revolves in permanent bearings attached to the frame A. The object of this roller G is to remove the bark from the knife after the rossing operation is completed. The teeth *e* in these rollers will be sharpened by means of two bevels, *j j*, at opposite ends, and by beveling or inclining the outer ends, *k*, as will be fully understood by referring to Fig. 4. By this mode of sharpening a better hold on the bark will be obtained. At each end of the roller G there is a gear-wheel, *l*, which work into two pinions, *g g*, the latter in turn communicating motion to the wheels *h h* of the roller E. Motion is given to the roller G by means of a wheel, *m*, which is placed on a shaft, *n*, having a driving-pulley, *o*, upon it. The inner ends of the levers F F are fitted between jaws *p p* on the upper part of the frame A, and are secured between said jaws by the axle of the roller G, which passes through them. The outer ends of the levers F are free, and serve as handles for elevating or depressing the roller E, a movement which can also be effected by the operator's foot through the medium of a treadle, H, attached to a shaft, I, which has a short crank, *g*, at each end connected with the levers F by rods *r*. The pinions *g g* have their axes working in bearings *s* in the levers F F, as shown more particularly in Fig. 3.

J is a knife which rosses the bark. It has a straight edge, and extends the entire length of the rollers, being bolted to a strong iron bed-piece, *t*, nearly on a level with the bed-plates when they are in a horizontal position.

The knife J is secured to the bed-piece by means of four or more headed screws, *u*, which pass through beveled slots *v* in the knife, as shown in Figs. 2 and 3. By this mode of fastening the knife, as it wears by use, can be

moved or adjusted forward and used until it is completely worn out.

The knife can be sharpened without removing it from the bed-piece *t* by disconnecting the levers F from the rods *r*, and turning said levers F and feed-roller E over upon the bed-plate C, when ready access can be had to the edge of the knife J; or, if necessary, the knife can be then removed by slacking the screws *u*. The position of the knife is nearly midway between the feed-roller E and discharge-roller G.

K is a hand-lever for turning or moving the shaft L, to which arms *a'* are attached, which support the inner end of the bed-plate B. By turning this shaft L the inner end of the bed-plate B may be adjusted relatively with the knife J to suit the thickness of the bark to be operated upon. This lever K is held in place at different points by a rack, *b'*, provided for that purpose at one side of the machine.

M is a friction-roller placed immediately behind the knife, resting on and revolving in journals at the inner ends of the arms *d* of the bed-plate C. This roller M will consequently rise or fall with the bed-plate C, and facilitate the onward movement of the bark. The upper edge of the roller M is slightly above the level of the bed plate C, and the weights D serve to keep said roller against the bark and the latter pressed against roller G. Stops *c'* are attached to the frame A for the outer ends of the arms *d* to bear or rest upon, and the stops *c'* may be padded at their upper ends or have india-rubber attached to them to prevent jars and concussions. For the same purpose india-rubber strips or pads *d'* may be attached to the top of the frame A for the levers F to strike against.

The machine most generally used for rossing bark is composed of two convex rollers attached to four movable hand-levers, thus giving a vertical movement to each roller. In my machine two of these levers are dispensed with, the rollers are perfectly cylindrical, and only one of them capable of an up-and-down adjustable movement, and a uniform movement is communicated to this roller by means of the treadle, thus allowing the operator to have free use of his hands at all times, a point of great importance when much work is to be performed. In the ordinary machine also a number of short knives with cutting-edges are bolted to various sides of a rapidly-revolving cylinder, which, in consequence of its speed in contact with the dry bark, breaks up the latter and causes it to roll around the knives, thereby causing a great waste of bark, which falls down with the rustings in consequence of the large space the knives occupy, and which injures the machine to a great extent, all of which difficulties are obviated by my improvement. In my machine but one stationary knife is used, and therefore a great saving is effected in the first cost and in the power for driving the machine, and the invention when viewed as a whole is far simpler in construction, possesses less parts, and is not so liable to get out of repair as those hitherto used.

In using my invention the bed-plate B is first adjusted so that its inner edge will have a proper relative position with the knife J to cause the ross to be stripped from the bark, said bed-plate being retained in proper position by the lever K and rack *b'*. The bark is placed ross side downward under the feed-roller E, which carries it onward to the knife, and in its passage over the same the sharp edge removes the ross similar to an ordinary plane. In the event of the teeth of the feed-roller E not taking sufficient hold of the bark to complete the operation, a gentle pressure of the operator's foot on the treadle will give an additional force to the feed-roller, and thus move the bark onward to the discharging-roller, which in its turn can have its power increased by the weights D, suspended on the arms *d*.

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

1. The stationary knife J, in combination with an adjustable toothed feed-roller E, arranged with the levers F F and treadle H, to operate as and for the purpose herein set forth.

2. The adjustable bed-plate B C, arranged as shown, in combination with the friction-roller M, discharge-roller G, feed-roller E, and knife J, all arranged for joint operation, as and for the purpose specified.

JOHN COWIE.

Witnesses:
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