(No Model.)

E. C. HARGRAVE.

MACHINE FOR ROSSING LOGS.

No. 540,980. Patented June 11, 1895.

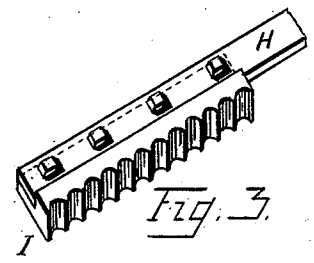

Fig. 3.

Fig. 1.

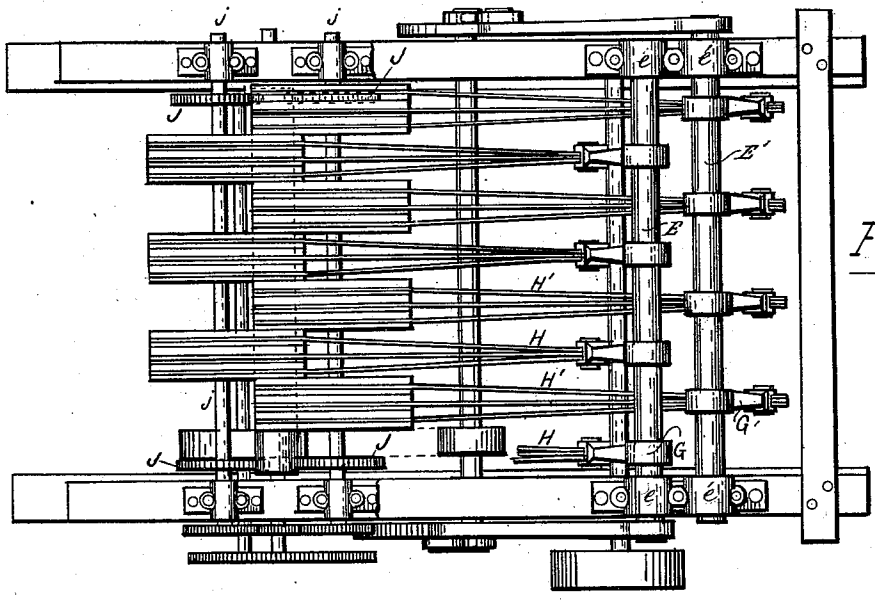

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD C. HARGRAVE, OF BAY CITY, MICHIGAN.

MACHINE FOR ROSSING LOGS.

SPECIFICATION forming part of Letters Patent No. 540,980, dated June 11, 1895.

Application filed April 11, 1893. Serial No. 469,974. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. HARGRAVE, of Bay City, in the county of Bay and State of Michigan, have invented a new and useful Improvement in Machines for Rossing Logs, of which the following is a specification.

My invention relates to machines or apparatus for rossing or removing the bark from logs, and it has for its object to provide an efficient apparatus of novel and simple construction by means of which the bark is rapidly removed by the rubbing, breaking or grinding action of an instrument moving in contact therewith and provided with blunt as contradistinguished from saw or cutting teeth.

To this end my invention consists in the novel apparatus herein described and then pointed out in claims, reference being made to the accompanying drawings, in which—

Figure 1 is an end elevation of my improved machine; Fig. 2, a top plan view thereof, and Fig. 3 a detached perspective of one of the blunt-toothed instruments.

In the said drawings the letter A designates the base of the machine and B top timbers supported upon uprights C.

The letter *c* represents a driving pulley carrying a pinion *e* which meshes with the large gear wheel D secured to a crank shaft *d*, upon which are arranged two cranks, said shaft being journaled in the frame of the machine and being made of any length required for the work to be done.

E and E′ represent two rock shafts journaled in boxes *e e′* on the cross timbers B of the upper frame of the machine.

F represents a pitman which is at one end connected with one of the cranks on the shaft *d*, and at its opposite end is pivoted to one end of an arm *f*, the other end of which is secured to the rock shaft E.

F′ represents a similar pitman which at one end is connected to the second crank on the shaft *d* and at its opposite end is pivoted to an arm *f′*, shown in dotted lines in Fig. 1, and which in turn is secured to the rock shaft E′.

I prefer to set the cranks on the shaft *d* opposite each other or at an angle of one hundred and eighty degrees from each other so as to give reverse motions to the rock shafts E and E′.

A pair of depending arms G are carried by the rock shaft E and secured to the rock shaft E′ are a pair of similar depending arms G′, said arms G and G′ alternating throughout the length of the machine, as clearly shown in Fig. 2. Each arm G and G′ is pivoted at its lower end to one end of a bar H or H′, the other end of which carries one or a series of toothed rubbing, grinding or breaking instruments I, said toothed instruments being so constructed that they are not saw or cutting blades, properly speaking, that is to say, they have not what are recognized as saw teeth, but are properly rubbing, breaking or grinding teeth. In this arrangement, by reason of the reverse motions imparted to the rock shafts E and E′ through the pitmen F F′ the arms G of one set or series move in one direction while those G′ of the alternate set or series move in the opposite direction, thus creating a rubbing, breaking or grinding action of the instrument I, and by reason of the pivotal attachment of the rear ends of the bars H H′ to the depending arms G G′ the rubbing, breaking or grinding instruments I are capable of yielding to closely follow the contour or irregularities of the log being operated upon.

I prefer to construct the bars H and H′ of two or three members each member being separate and provided with independent instruments I, so that each may play up and down independently of its neighbors and thus increase the capability of the instruments I to closely follow the inequalities or irregularities in a log, as shown in Fig. 2.

J J represent two toothed wheels or cylinders carried on shafts *j* running through the machine, these wheels being preferably duplicated at the two ends of the machine as shown in Fig. 2, and each of these shafts *j* is provided at one end with a gear-wheel K, both of which mesh with a single pinion *k* so as to turn in the same direction, whereby a log L lying between said two wheels will be rotated. The pinion *k* is driven by means of a gear wheel *l* on the same shaft which derives motion from the pinion *m*, on another shaft on which is arranged a belt pulley M driven by a belt N from the pulley on the shaft *d*.

The operation of my invention is as follows: A log being in place upon the two wheels J and the machine set in motion, said log is ro-

tated by said wheels, preferably at a low rate of speed, the driving pulley M being shown larger than its driving pulley, though of course this is not necessary, and at the same time the pitmen F F′ rock the shafts E and E′ in reverse directions thereby causing the alternate sets of arms G and G′ to reciprocate the bars H and H′, and the rubbing, breaking or grinding instruments, in opposite directions, and as the outer ends of the bars H and H′, carrying the instruments I, lie upon the log, said instruments act to rub, break or grind the bark very rapidly from the log, yielding as occasion requires to follow closely the irregularities or inequalities of the log and without in any manner injuring the wood as would be done in prior rossing machines.

I have found by actual use that with this machine I can ross logs very rapidly and without injuring or wasting the wood.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a rossing machine the combination with mechanism for supporting a log, of a reciprocatory blunt toothed rubbing, breaking or grinding instrument and mechanism for reciprocating the same in contact with a log whereby the bark of the log is rubbed, broken or ground off, substantially as described.

2. In a rossing machine the combination with mechanism for supporting a log, of two reciprocatory, toothed rubbing, breaking or grinding instruments, and means for reciprocating said instruments across the log simultaneously in opposite directions, substantially as shown and described.

3. In a rossing machine the combination with mechanism for supporting a log, of two toothed rubbing, breaking or grinding instruments, and means for moving said instruments across the log simultaneously in opposite directions, substantially as shown and described.

4. In a rossing machine the combination with mechanism for supporting a log of a reciprocatory and yieldingly supported blunt-toothed rubbing, breaking or grinding instrument and mechanism for reciprocating the same in contact with a log whereby the instrument is capable of yielding to follow the inequalities or irregularities of the log and the bark of the log is rubbed, broken or ground off.

5. In a rossing machine the combination with mechanism for supporting a log, of a plurality of sets of blunt, toothed rubbing, breaking or grinding instruments, each set comprising a plurality of such instruments and means for reciprocating said sets of instruments in opposite directions in contact with a log, substantially as described.

6. In a rossing machine the combination with mechanism for supporting a log of a plurality of sets of yieldingly supported blunt toothed rubbing, breaking or grinding instruments, each set comprising a plurality of such instruments and means for reciprocating said sets of instruments in opposite directions in contact with the log, substantially as described.

7. In a rossing machine the combination with mechanism for supporting and rotating a log, of rubbing, breaking or grinding instruments I connected alternately with rock shafts E and E′ and means for rocking said shafts substantially as described.

8. In a rossing machine for rossing logs the combination with mechanism for supporting a log of bars H and H′ each of which is composed of a plurality of members, each member carrying a rubbing, breaking or grinding instrument independently capable of rising and falling and means for reciprocating said bars, substantially as described.

9. In a rossing machine, the combination with mechanism for supporting a log of a blunt-toothed, rubbing, breaking or grinding instrument pivotally supported so as to be capable of yielding to inequalities or irregularities in the log, and means for reciprocating said instrument in contact with a log so that the bark of the log is rubbed, broken or ground off.

10. In a rossing machine the combination with mechanism for supporting a log of a blunt-toothed, rubbing, breaking or grinding instrument pivotally supported so as to be capable of yielding to inequalities or irregularities in the log, and means for moving said instrument in contact with a log so that the bark of the log is rubbed, broken or ground off.

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Witnesses:
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