(No Model.)

W. HADLEY & A. T. McDONALD.

ROSSING MACHINE.

No. 489,251. Patented Jan. 3, 1893.

Fig. 1.

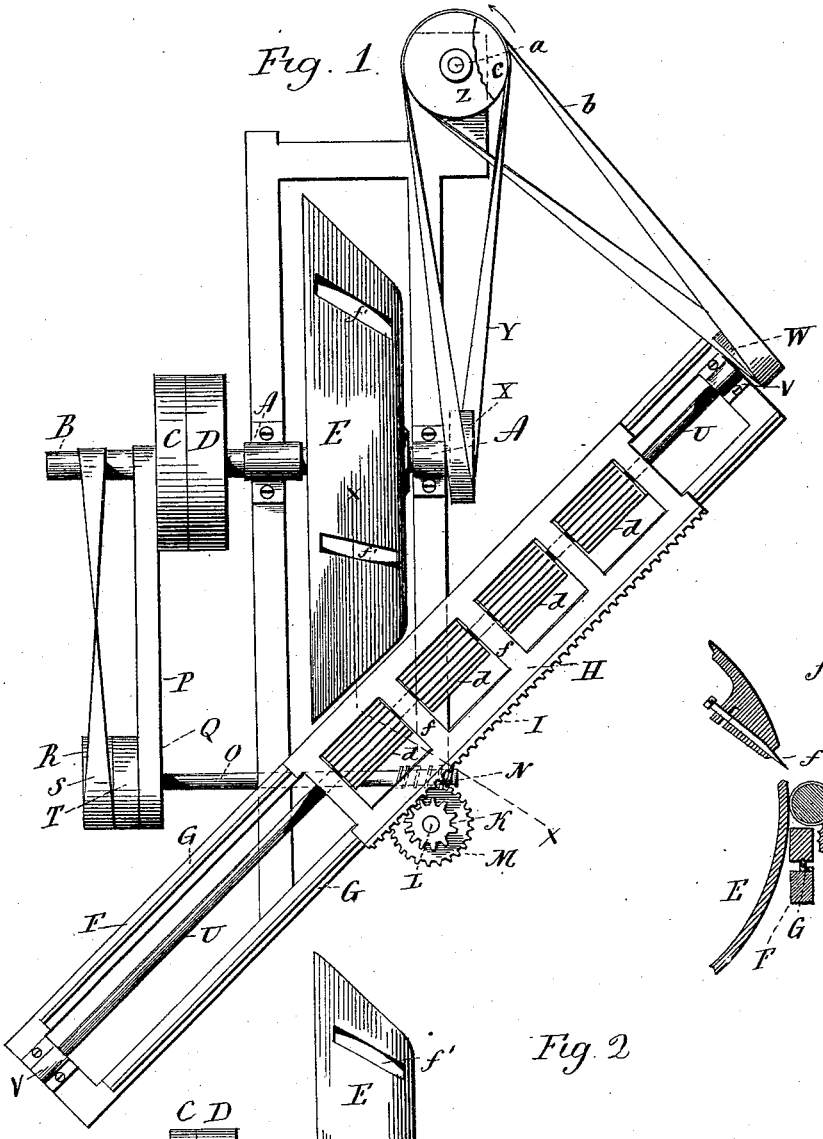


Fig. 3.

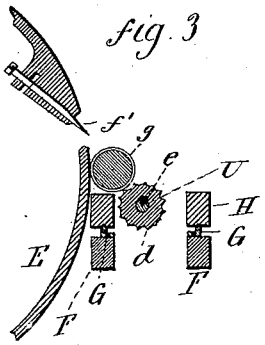
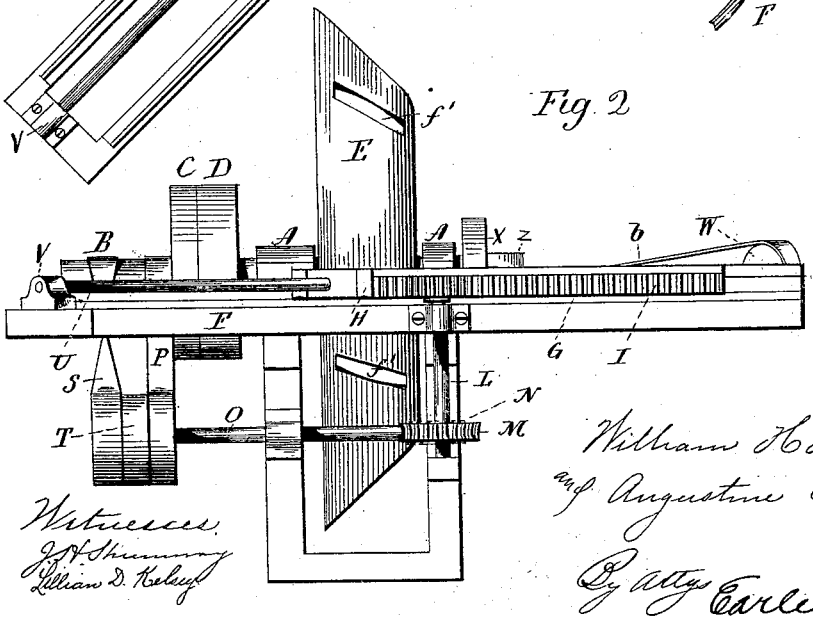


Fig. 2.



Witnesses,
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UNITED STATES PATENT OFFICE.

WILLIAM HADLEY AND AUGUSTINE T. McDONALD, OF SHELTON, CONNECTICUT, ASSIGNORS OF ONE-THIRD TO WILLIAM WILKINSON, OF SAME PLACE.

ROSSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 489,251, dated January 3, 1893.

Application filed July 11, 1892. Serial No. 439,584. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM HADLEY and AUGUSTINE T. McDONALD, of Shelton, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Rossing-Machines; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top or plan view. Fig. 2, a front view. Fig. 3, section cutting on line *x*—*x* of Fig. 1.

This invention relates to an improvement in machines for removing the bark from logs or sticks of wood preparatory to the reduction of the wood itself to pulp for the manufacture of paper, or other purposes, the object of the invention being the construction of a machine which will receive a stick or log, irrespective of any particular length or diameter, and automatically feed and present the stick or log to the tool for the removal of the bark, and the invention consists in the construction of the machine as hereinafter described, and particularly recited in the claims.

Upon a suitable frame, and in bearings A A, the driving-shaft B, is arranged, power being applied thereto to impart revolution to the shaft, by pulleys or otherwise, the shaft in this illustration represented as provided with a tight pulley C, and loose pulley D, to which a band may be applied, as usual for the communication of power. On the driving-shaft the cutter-head E, is arranged, and so that a suitable rapid revolution may be imparted to the cutter-head, the cutter-head is of conical shape, as shown. On the frame of the machine a supporting-frame F, is arranged, carrying tracks G G, the plane of the track being parallel with the plane of the shaft, but the line of the track at an angle to the axis of the shaft preferably about forty-five degrees, as shown in the drawings. On the track G, a carriage H, is arranged, so as to slide longitudinally on the said track. The longitudinal movement is imparted to the carriage H, by any suitable mechanism, here represented as by a toothed rack I, on one side of the carriage, into which a pinion K, on a vertical shaft L, works, the shaft L, carrying a worm-gear M, at its lower end, and into which worm gear a corresponding worm N, on a shaft O, works, the said shaft O, being parallel with the driving-shaft, and caused to revolve slowly by any suitable means, here represented as by a band P, running from the driving-shaft onto a pulley Q, on the shaft O, this will communicate a longitudinal movement to the carriage in one direction. On the shaft O, is a second pulley R, upon which a second band S, runs from the driving-shaft, but crossed so as to produce a reverse revolution of the pulley R, both the pulleys Q and R are fast upon the shaft O, and between the two pulleys Q and R, is a third pulley T, which is loose upon the shaft, and so that one of the bands will run upon the pulley T, while the other band runs upon the pulley Q or R, as the case may be, and a corresponding forward or backward movement will be imparted to the carriage.

In the diagonal frame F, and parallel with the path of the carriage, a shaft U, is arranged; it is supported in suitable bearings V at each end of the frame, and at one end the shaft is provided with a pulley W, or other means for communicating revolution to the shaft. As here represented, the revolution of the shaft U, is produced from a pulley X on the driving-shaft B, from which a band Y, runs to a pulley Z, on a counter-shaft *a*, and a band *b*, runs from a second pulley *c*, on the shaft *a*, to the pulley W, on the shaft U, and so that the shaft U, receives its communication from the driving-shaft, as does the shaft O, thus imparting revolution to all the shafts from a single application of power. On the shaft U, several rollers *d*, are arranged, these rollers being serrated, toothed, or otherwise roughened; they are arranged longitudinally loose upon the shaft U, but engaged therewith so as to partake of the revolution of the shaft U. This may be done by splines *e*, or any of the known devices by which the rollers may receive rotation from the shaft, but be loose longitudinally thereon. The rollers *d* stand between cross-bars *f*, in the car-

riage, and project above the plane of the carriage, as seen in Fig. 3.

The cutter-head E, is made of conical shape, it is tapered corresponding to the angle at which the carriage is set with relation to the shaft which carries the cutter-head, and as clearly seen in Fig. 1. The cutter-head is provided with several cutters f', more or less in number, and which project through the face of the cutter to an extent to produce the requisite cutting or operation, as hereinafter described. The position of the cutter-head with relation to the rollers d, is such, as seen in Fig. 3, that the stick or log to be rossed may be placed upon the carriage, and rest upon the rollers d on one side, and against the cutter on the opposite side, as seen in Fig. 3, g, representing the log. The machine being in operation, and the carriage standing at one end of its track, the log is placed thereon, and so that its surface may bear upon the roughened rollers d. Longitudinal movement is then imparted to the carriage which carries the log, until it reaches the cutter-head, and as its movement continues under the advancing movement of the carriage, the rollers impart to the log a rotative movement so as to present its entire surface to the cutter during its passage, the support of the log at the time of operation being substantially between the rollers and the face of the cutter. Because of the support of the log upon the rollers and between the rollers and the cutter, the diameter of the stick or log to be operated upon is immaterial, so long as it is of a diameter to bear both upon the rollers and against the face of the cutter, so that the requisite rotation is imparted to the stick or log, while it is advanced by the longitudinal movement of the carriage. The cutting edge of the cutters should be rounded, as shown, to produce the best results, but the shape or arrangement of the cutters is immaterial to the invention.

From the foregoing it will be understood that while preferring to connect the parts of the machine so as to be all driven from the single driving or principal shaft of the machine, each part may receive its power from an independent shaft, as is frequently done in machines of similar character, and it will also be understood from the foregoing that the invention is not to be understood as limited to the particular mechanism for imparting movement or revolution to the respective parts, any of the known mechanisms for accomplishing the same result may be substituted therefor.

Belt or power shifting devices, not shown, but common and well known, will be employed to cause the power to operate to move the carriage backward and forward, and the work may continue upon the log both in the backward and forward movements as many movements as are necessary for the removal of the bark, or so much of it as may be necessary.

We claim—

1. In a rossing-machine, the combination of a revolving cutter-head, a carriage arranged upon a track in substantially the plane of the driving-shaft, but diagonally thereto, mechanism substantially such as described for imparting a backward and forward movement to said carriage, rollers arranged to travel with the said carriage, the axis of the rollers being parallel with the path of movement of the carriage, mechanism substantially such as described for imparting revolution to said rollers while so moving with the carriage, and substantially as specified, whereby the stick to be rossed may be placed upon said carriage and receive a rotative movement as the said carriage advances the stick with surface contact with said revolving cutter-head.

2. The combination of a driving-shaft, a cutter arranged thereon and so as to revolve therewith, a track arranged in a plane substantially parallel with the plane of said shaft, a carriage on said track, a longitudinal shaft parallel with said carriage, rollers on said shaft, arranged to partake of the revolution of said shaft, but also adapted to move longitudinally with the carriage, the surface of the said rollers roughened and projecting above the upper surface of the carriage, with mechanism substantially such as described to impart longitudinal backward and forward movement to said carriage and rotative movement to said roller-shaft and rollers, the said carriage and rollers being arranged in such relation to the revolving cutter-head that the stick placed upon the carriage will rest upon said rollers and receive a longitudinal movement from the carriage and rotative movement from said rollers, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WILLIAM HADLEY.
AUGUSTINE T. McDONALD.

Witnesses:
FRED C. EARLE,
LILLIAN D. KELSEY.