(No Model.)

W. W. TREVOR.

MACHINE FOR SPLITTING WOOD.

No. 451,228. Patented Apr. 28, 1891.

Fig. 1.

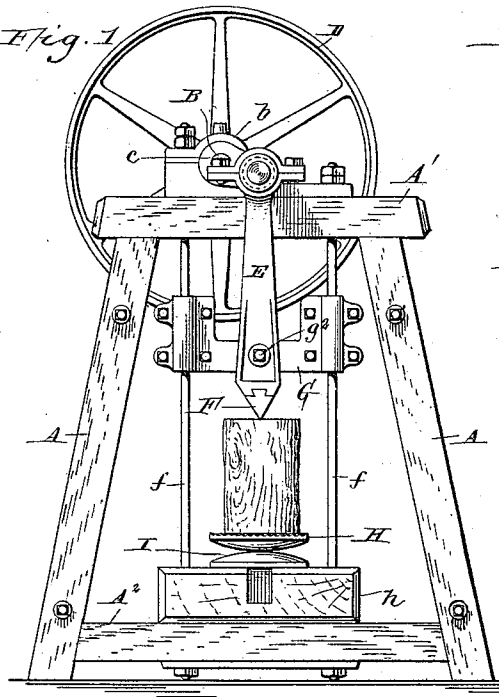


Fig. 2.

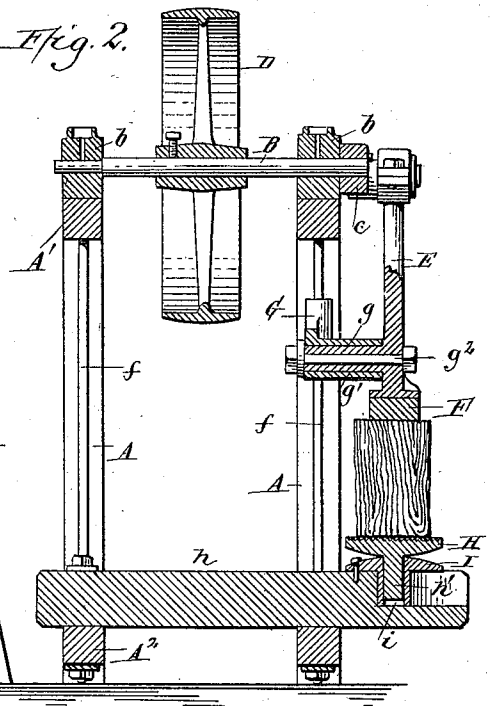


Fig. 3.

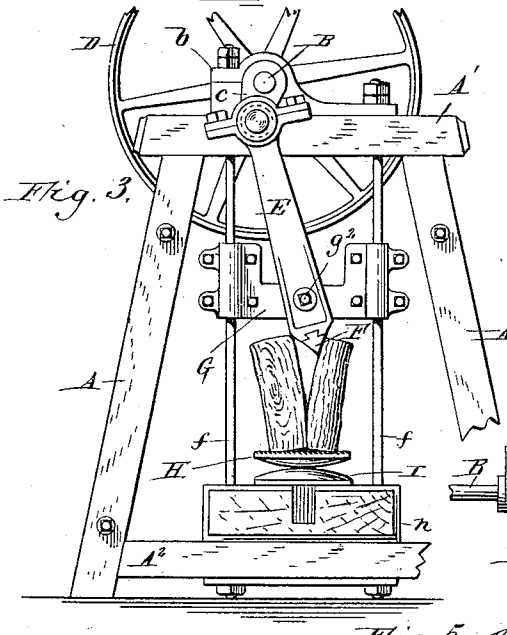


Fig. 4.

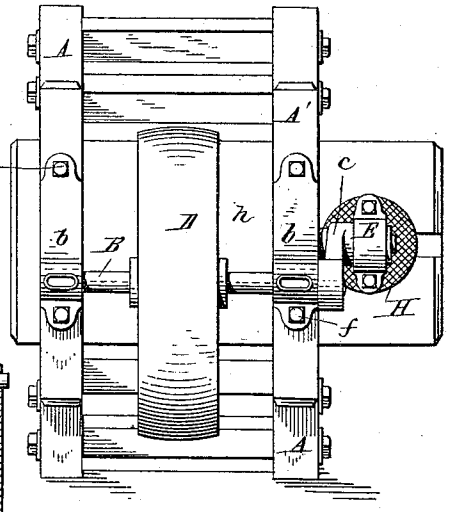
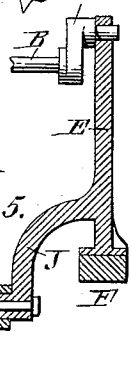


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR SPLITTING WOOD.

SPECIFICATION forming part of Letters Patent No. 451,228, dated April 28, 1891.

Application filed November 10, 1890. Serial No. 370,911. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. TREVOR, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented a new and useful Improvement in Machines for Splitting Wood, of which the following is a specification.

This invention relates to a wood-splitting machine, which is especially desirable for cutting blocks of wood into small pieces of the proper size to be fed to a grinding-mill for making wood pulp or other purposes.

My invention has for its object to produce a simple and powerful machine whereby blocks of wood may be easily and rapidly split, and which can be operated with a comparatively small expenditure of power.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine, showing the ax or cutter in a vertical position about to enter the block. Fig. 2 is a vertical section thereof at right angles to Fig. 1. Fig. 3 is a front elevation of the machine, showing the ax or cutter in the inclined or tilted position, in which it exerts a prying action upon the block. Fig. 4 is a top plan view of the machine. Fig. 5 is a fragmentary sectional view showing a modified construction of my invention.

Like letters of reference refer to like parts in the several figures.

A represents the upright timbers of the stationary frame of the machine, and A′ A^2 the upper and lower horizontal connecting-timbers.

B represents the horizontal driving-shaft, turning in bearings *b*, secured to the upper timbers A′, and provided at its front end with a crank *c*.

D is a large driving-pulley mounted upon the shaft B, and serving also as a balance-wheel.

E represents a pitman pivoted at its upper end to the wrist-pin of the crank *c*, and carrying at its lower end an ax or cutter F.

G is a cross-head, and *f* are vertical rods upon which the cross-head slides. These rods serve not only as guides for the cross-head, but also hold the upper front bearing *b* in place, and pass through the lower cross-piece A^2 of the frame upon which the table is supported and receive the thrust of the ax as it strikes the wood. The pitman is pivoted to the cross-head by a hollow pivot *g*, extending rearwardly from the pivot and seated in a socket *g′* formed on the front side of the cross-head, and the pitman and cross-head are connected together by a bolt g^2, which passes through the pivot of the cross-head.

H is a table or platform resting upon a cross-beam *h* of the main frame and upon which the blocks to be split are placed. This table consists, preferably, of a disk, provided in its under side with a central stem or projection *h′*, which fits into a socket *i*, formed in a plate I, secured to the cross-beam *h*. The table H may be raised or lowered within certain limits, in accordance with the length of the blocks, by interposing a greater or less number of washers between the table and the socketed plate, the washers surrounding the stem of the table.

The crank-shaft is arranged in the machine out of center and on that side of the machine toward which the wrist-pin of the crank moves in traversing the lower arc of its course, so that as the cutter descends into the block of wood upon the table the pitman and the cutter move in a nearly vertical direction, as represented in Fig. 1, until the cutter has nearly reached the limit of its downward stroke. As the wrist-pin passes through the lower arc of its movement it moves the upper end of the pitman laterally, whereby the cutter is swung on its pivot and inclined or moved laterally in an opposite direction, as shown in Fig. 3. This causes the cutter to exert a prying action in the block, which tends to force the pieces asunder. By this combined splitting and prying action the blocks are severed more easily and more effectually than by a splitting action alone. The machine therefore requires less power for its operation and the strain upon the parts is materially reduced. The prying action of the cutter effectually separates the pieces and allows the cutter to readily recede from the split block, thus dispensing with strippers or other devices for preventing the block from adhering to the cutter after being split.

The cutter preferably forms part of the pitman, as shown, but it may be connected therewith in any other suitable manner, whereby it is compelled to take part both in the vertical and lateral movements of the pitman, so as to have a combined splitting and prying action upon the blocks of wood.

I prefer to arrange the cutter below the pivotal connection with the cross-head, as represented in Figs. 1 to 4; but, if desired, it may be arranged above the pivotal connection, as represented in Fig. 5, in which construction the pitman is provided on its rear side with an arm J, which extends below the ax and carries the pivot at its lower end.

I claim as my invention—

1. The combination, with the stationary frame and the crank-shaft, of a guide or cross-head, a pitman operated by the crank-shaft and pivotally connected to the cross-head, and an ax or cutter attached to the pitman and receiving a vertical and lateral movement therefrom, substantially as set forth.

2. The combination, with the stationary frame and the crank-shaft, of a guide or cross-head, a pitman operated by the crank-shaft and pivotally connected at its lower portion to the cross-head, and an ax or cutter rigidly connected to the pitman, substantially as set forth.

3. The combination, with the stationary frame of the machine and the cross-head guided upon said frame, of a pitman pivoted at its lower portion to said cross-head and carrying a cutter, and a crank-shaft operating said pitman and arranged out of center, whereby the cutter receives a nearly vertical movement in entering and a lateral or prying movement in finishing the cut and beginning the upstroke, substantially as set forth.

Witness my hand this 5th day of November, 1890.

WILLIAM W. TREVOR.

Witnesses:
J. R. COMPTON,
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