G. Westinghouse,

Drag Saw.

No. 48,857. Patented July 18, 1865.

Fig: 1

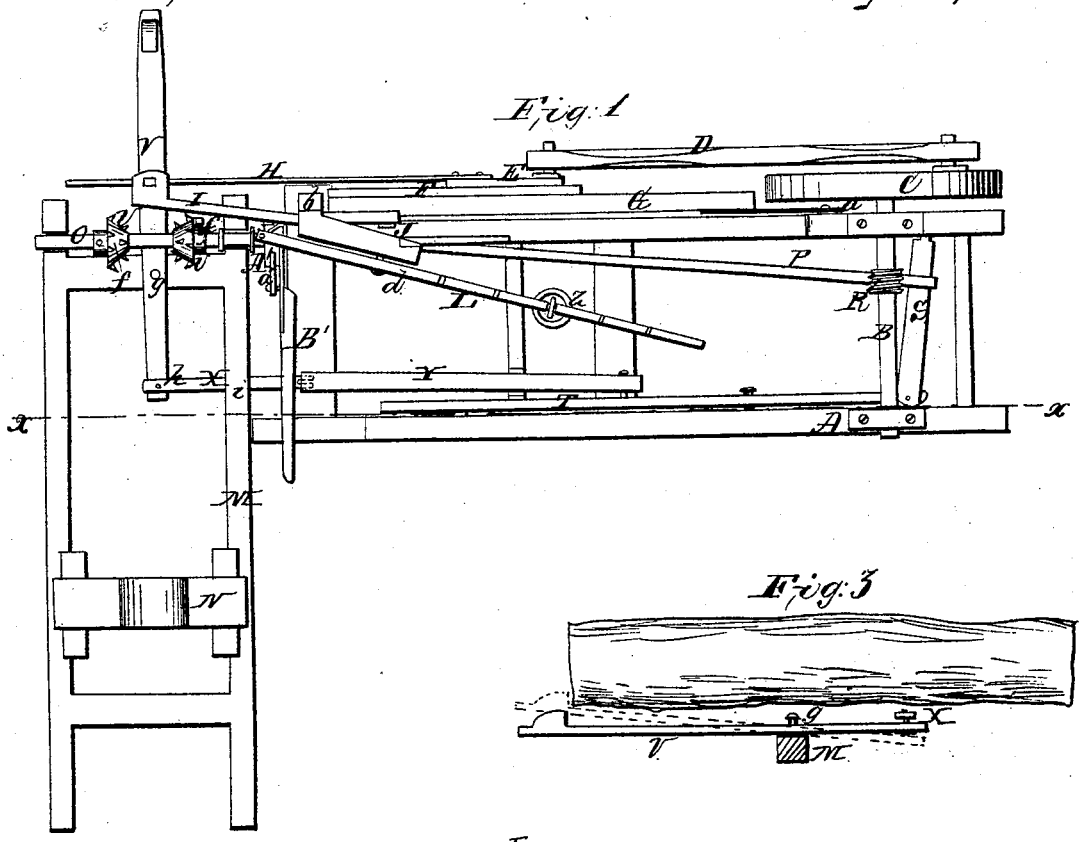
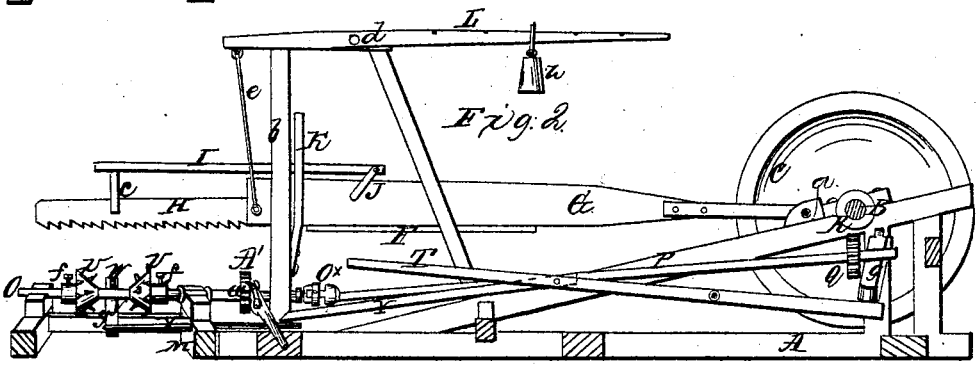


Fig: 3

Fig: 2.



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UNITED STATES PATENT OFFICE.

G. WESTINGHOUSE, OF SCHENECTADY, NEW YORK.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. **48,857**, dated July 18, 1865.

To all whom it may concern:

Be it known that I, G. WESTINGHOUSE, of Schenectady, in the county of Schenectady and State of New York, have invented a new and Improved Drag or Cross-Cut Sawing Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan or top view of my improved machine; Fig. 2, a side sectional view of the same, taken in the line *x x*, Fig. 1; Fig. 3, a detached view of the principal portion of the gage mechanism by which the operating of the feed movement of the log is governed and the latter sawed into pieces of uniform length.

Similar letters of reference indicate like parts.

This invention relates to a new and improved sawing-machine of that class designed for sawing logs transversely with the grain, and intended chiefly for sawing fire or cord wood.

The object of the invention is to obtain a device for the purpose specified which may be attended or manipulated with the greatest facility and admit of having the log fed to the saw at equal distances after each cut, to insure the log being sawed into pieces of equal lengths.

The invention has, further, for its object the obtaining of a simple and efficient log-feeding mechanism and a means for regulating the downward pressure of the saw on the log, as hereinafter fully shown and described.

A represents the framing of the machine, which may be constructed in any proper manner to support the working parts; and B is a driving-shaft, placed horizontally on the framing A at one end, and having a crank-pulley, C, upon it, to which a pitman, D, is connected, said pitman operating a slide, E, which is fitted between metal guides F, attached to one side of a bar, G, one end of which is secured by a pivot-bolt, *a*, to the framing A, near the shaft B, as shown in Fig. 1. The outer or disengaged end of the bar G is fitted between upright guides *b b*, attached to the framing A, and to the slide E, which is of metal, the saw H is firmly secured.

I is a bar which has a fork, *c*, at its outer end, to fit over the back or upper part of the saw and serve as a guide therefor. The inner end of bar I is secured by a link, J, to the bar G, as shown clearly in Fig. 2.

K is a spring-catch attached to one of the upright guides *b*, and in such a relative position with the bar G as to pass under the same and hold it when elevated or raised. This bar is raised by means of a lever, L, having its fulcrum at *d*, and connected at one end to the bar G by a rod, *e*.

From the above description it will be seen that when the shaft B is rotated a reciprocating motion will be imparted to the saw H through the medium of the crank-pulley C and pitman D, and that the saw may be raised up free from the log at any time by actuating the lever L, the catch K retaining the saw in an elevated position.

M represents a horizontal framing, which is at right angles with the framing A, and upon which a log-carriage, N, is placed and allowed to slide freely on rollers or otherwise; and on the framing M there is placed a shaft, O, which is connected by a universal joint, $O^{\times}$, with a shaft, P, the latter having a worm-wheel, Q, at its outer end, which, when the log-feeding mechanism is in operation, gears into a screw, R, on shaft B. The outer bearing of the shaft P is on a bar, S, which is adjustable, one end being allowed to work in a mortise in the framing A, and the other end connected to a lever, T, by operating which the worm-wheel Q may be raised and lowered, and consequently thrown in and out of gear with the screw R. The universal joint $O^{\times}$ admits of this adjustment of the shaft P and worm-wheel Q without affecting the connection of the shaft P with shaft O.

On the shaft O the log-carrier or log-feeder is placed, the same being composed of two conical heads, U U, toothed at their beveled surfaces, which surfaces are placed opposite each other, as shown in Figs. 1 and 2. These heads U U are not connected or cast with each other, but are separate or distinct, and secured on the shaft O by set-screws *f*, or otherwise, so that they may be adjusted at a greater or less distance apart, as may be desired, to suit the size of the log resting upon them. These carriers

or feeders, it will be seen, feed the log along under the saw when the latter is elevated and the shaft P thrown in gear with the shaft B, the log being moved or fed along in a direction at right angles with the same.

V is a bar, which is fitted on a pivot, *g*, on the framing M, and projects beyond the shaft O a considerable distance in a direction parallel with the sides of M. This bar V has a ledge or projection, W, at its outer end, and its inner end is connected by a pivot, *h*, to one end of a bar, X, which works on a pivot, *i*, in the framing M, and is connected at its opposite end to a lever, Y, connected to the lever T, for operating the bar S and throwing the shaft P in and out of gear with shaft B, as previously described. When the lever T is pressed down by the foot of the attendant, in order to keep the worm-wheel Q in gear with the screw R, said lever, in consequence of being connected with the lever Y, as described, will also keep the outer end of bar V, which has the projection W upon it, elevated, so that the log, when moved along by the feed mechanism, will come in contact with said ledge or projection, at which time the operator relieves the lever T, and the worm-wheel Q drops out of gear with screw R, and the outer end of bar V drops simultaneously therewith. The feed mechanism by this means being stopped, the operator lowers the saw down upon the log and the cut is made, the same being raised at the termination of the cut, and the shaft P then connected with shaft B and the outer end of the bar V elevated and the log fed along underneath the saw, as before, until its end reaches the projection W, when the feed mechanism is again stopped and the saw let down to its work to make a succeeding cut.

By this arrangement a very simple and efficient log-feeding mechanism is obtained, and by having the log-carrier composed of two separate heads, U U, as described, a free space is allowed between them, so that the log will not be kept in contact with parts which would cause unnecessary friction, and which is the case with the ordinary log-carriers composed of one piece.

In some cases the saw is allowed to feed itself to its work by its entire gravity, in connection with that of the parts connected with it; but where this would cause too great a downward pressure I counterbalance the saw by means of a weight, *h*, placed on the lever L, a greater or less pressure being given the saw by adjusting the weight *h* on the lever nearer to or farther from its outer end. This will be fully understood by referring to Fig. 2.

I would remark that I apply a ratchet, A′, to the shaft O, and also a bar, B′, with a pawl, *a′*, attached, in order that the log-carrier or log-feeder may be turned at any time by hand when required. It is sometimes necessary or convenient to do this.

I claim as new and desire to secure by Letters Patent—

1. The combination of the lever L and adjustable weight Z with the beam G, for raising, lowering, and counterbalancing the saw, as set forth.

2. The pivoted bar V, provided with the projection W, and connected by means of the bar X and lever Y to the lever T, substantially as and for the purpose specified.

3. The log-carrier or log-feeder composed of two heads, U U, made separate or detached from each other and placed on the shaft O permanently, or so that either or both may be adjusted thereon, for the purpose specified.

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