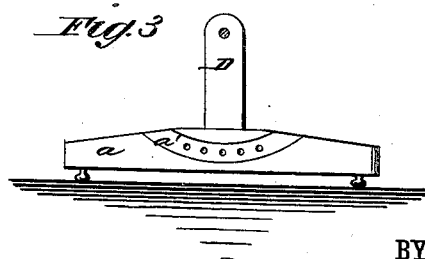
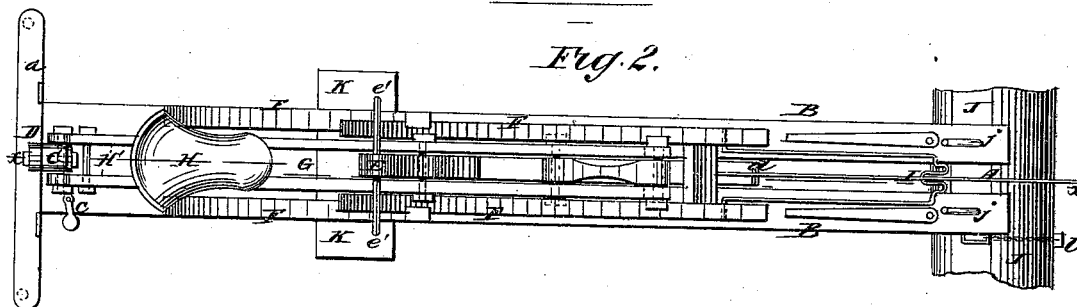
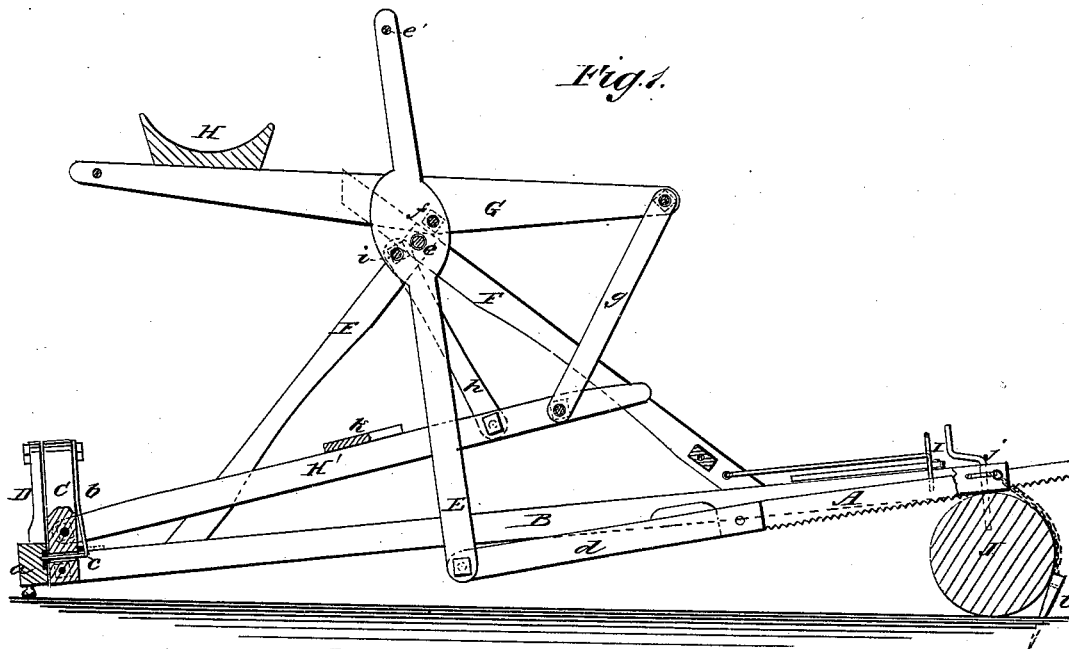


J. K. ALTERS.  
 Drag-Sawing Machine.

No. 215,858

Patented May 27, 1879.



WITNESSES:  
*F. M. Ardle.*  
*C. Sedgwick*

INVENTOR:  
*J. K. Alters*  
 BY *Munn & Co.*  
 ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOSEPH K. ALTERS, OF MAIDEN ROCK, WISCONSIN, ASSIGNOR TO HIMSELF  
AND JOHN H. BRASINGTON, OF SAME PLACE.

## IMPROVEMENT IN DRAG-SAWING MACHINES.

Specification forming part of Letters Patent No. **215,858**, dated May 27, 1879; application filed  
April 1, 1879.

*To all whom it may concern:*

Be it known that I, JOSEPH K. ALTERS, of Maiden Rock, in the county of Pierce and State of Wisconsin, have invented a new and useful Improvement in Cross-Cut Saws, of which the following is a specification.

This invention relates to improvements in mechanism for operating the saws, the object whereof is to enable one man to do the sawing in a simple and easy manner.

It consists in suspending the saw in a frame and connecting it with a system of levers, whereby the weight of the operator, the pressure of his feet, and the power exerted through his hands are all utilized to give a reciprocating motion to the saw.

In the accompanying drawings, Figure 1 is a longitudinal section of the improvement on line *xx* of Fig. 2. Fig. 2 is a top plan or view of the same, and Fig. 3 represents the rear support of the frame.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the saw running between two parallel timbers B B, which are connected together at the rear end by an upright, C. This upright is pivoted to a standard, D, rising from the cross-piece *a*, in which is set a perforated curved plate, *a'*.

A flat spring, *b*, is attached by its upper end to the upright C, and, extending down between the timbers B, is turned at a right angle and passed through the upright, its point being in line with the perforations in plate *a'*, so as to engage the same. A small lever, *c*, between the flat spring and the upright is used to throw the point out of the perforations.

By this arrangement the saw-frame is leveled when used on uneven ground. The cross-piece sitting on an incline, the saw-frame is adjusted to a vertical position, and secured by entering the point of the spring in a proper perforation.

The saw-head *d* is pivoted at its rear end to the lower end of the lever E, which reaches upward and is fulcrumed at *e* in the uprights F F, rising from the timbers B, and, extending upward, is provided with a T-handle, *e'*. For-

ward of the fulcrum *e*, at *f*, in lever E, is fulcrumed a rock-lever, G, composed of two parallel bars united together at the ends. The power end of this rock-lever is provided with a saddle, H, for the operator, while at the opposite or working end it is connected by a connecting-bar, *g*, with a treadle-lever, H', composed of two parallel bars fulcrumed at the opposite end in the upright C. This treadle-lever is also connected by a connecting-bar, *h*, with lever E, by a pivot, *i*, back of the fulcrum *e*.

A guide, I, for the saw lies between the timbers B B at the forward end, and has arms extending back and pivoted to the forward uprights F; and through the ends of timbers B are passed spurs *j j*, for entering into the log and holding the machine in place.

The operation of the device is as follows: The operator sits astride of the saddle H, with his feet on the foot-rest *k* on treadle-lever H', back of lever E, and his hands grasping the T-handle *e'* at the top of lever E. The machine is leveled in the manner heretofore described, and the forward end mounted on the log J, and secured by the spurs *j*, while the saw is held in the proper position on the log by the guide I. The weight of the operator being disposed forward of the fulcrum *e* tends to throw the lever E back, as does also the power exerted by the hands pushing forward on the handle *e'*, while the pressure of the feet of the operator on treadle-lever H' being expended on lever E, through connecting-bar *h* on the pivot *i*, back of the fulcrum *e*, and the power exerted in drawing the lever back by the hands, throws the saw forward. Thus by the weight of the operator, the pressure of the feet on the treadle-lever H', and the power exerted through the handle *e'* of lever E, a reciprocating motion is communicated to the saw A, by which it is rapidly and easily operated.

When the saw has cut well down into the log, the scarf can be kept open by a metal wedge, *l*, connected to the frame by a chain.

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

1. As an improvement in cross-cut saws, the

lever E, having handle *e'*, pivoted to saw-head *d*, and fulcrumed in the uprights F of the frame at *e*, in combination with the rock-lever G, fulcrumed in lever E at *f*, forward of fulcrum *e*, and the treadle-lever H', fulcrumed in the upright C, and connected with the lever E by connecting-bar *h* back of fulcrum *e*, and with the forward end of the rock-lever by the connecting-bar *g*, whereby a reciprocating motion can be given to the saw through the weight of the operator, the pressure of his feet on the treadle-lever H', and the power he exerts through his hands on the handle *e'* of lever E, substantially as hereinbefore described and set forth.

2. The upright C, at the rear end of the frame B, connecting them together, and provided with a spring-latch, *b*, in combination with the standard D, to which it is pivoted, and the cross-piece *a*, provided with perforated plate *a'*, whereby the saw-frame can be adjusted to a vertical position on uneven ground, substantially as described.

JOSEPH KESSLER ALTERS.

Witnesses:

GEO. T. HESLIN,  
JACOB BUTCHER.