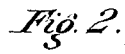
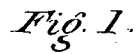


Patented Apr. 10, 1866.



Henry Fryatt
 & H. Edmunds
 by J. Fraser & Co., Attys.

UNITED STATES PATENT OFFICE.

HENRY FRYATT AND E. C. EDMONDS, OF BUFFALO, NEW YORK.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. 53,804, dated April 10, 1866.

To all whom it may concern:

Be it known that we, HENRY FRYATT and E. C. EDMONDS, both of the city of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Machine for Sawing Wood by Hand or other Power; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a view showing a side elevation of the machine, with a cross vertical section of the gate in which the saw slides; Fig. 2, a plan of our improved machine.

Like letters of reference indicate corresponding parts in both figures.

The invention consists in the combination and arrangement of a sawing-machine composed, essentially, of a grooved wheel so constructed as to produce two reciprocations of the saw to one revolution of the wheel, a gate in which the saw operates, together with a device for regulating the pressure of the latter, and the necessary device for securing the wood while being sawed, substantially as follows.

As represented in the drawings, A A is a rectangular frame of wood, having two posts or standards, B, for supporting the machine at the rear and three in front, between two of which, in grooves *a* cut therein, moves vertically the gate C. (Shown in Fig. 1.) This gate is composed of two upright pieces, *b b*, which slide in the grooves *a* of the standards, connected at or near the upper and lower ends thereof by cross-pieces *c c*, and having secured at the center and on the inner side of each horizontal grooved pieces *d*, which form ways in which the saw D reciprocates. This saw is preferably, though not necessarily, constructed of nearly the form of an ordinary buck-saw, the central cross-piece, *f*, being provided with flanges or tongues *g*, which fit and slide in the grooves of the ways *d*. The saw receives its motion from and is connected by the pitman E to the wheel F, (of the peculiar construction hereinafter described,) mounted on one end of a horizontal axis, G, which has its bearings in the standards B, or in bearings attached thereto, and which has mounted on the other end a fly or driving wheel, H, provided with a handle,

h, by which motion is imparted to the machine. The wheel F, which may be made of wood or metal, or both combined, is constructed with two dovetailed grooves, *i i*, in its outer face, (shown in Fig. 2,) and which cross each other at right angles, as represented in Fig. 1. In these grooves are fitted so as to slide therein two dovetail pieces, *m m*, made of any suitable material, and of a length equal to or a little more than one-third of the diameter of the wheel, which are secured to the pitman E by means of bolts *p p*, which may either move in bearings in the pitman (which is preferable) or in bearings in the slide-pieces *m m*. By revolving the wheel F by the means above described, or its equivalent, these pieces *m m* will slide backward and forward in the grooves *i i*, producing thereby two reciprocations of the saw to one revolution of the wheel.

To the upper cross-piece *c* of the gate is attached a cord, *r*, which, at the upper end, is secured to the short arm of a lever, I, having its fulcrum in the end of a short standard, J, secured to the upper portion of the frame. The long arm of the lever is provided with a weight, K, and notches *s s*, for adjusting the position of the former. The office of this lever and weight is to balance the gate and thereby relieve the saw from the undue pressure which would otherwise rest upon it and impede its action, the weight and notches enabling the operator to regulate the pressure at pleasure, as the nature of the wood being sawed may require.

The wood is placed in rests or hooks *t* and secured while being cut by means of a spring, *u*, attached at its lower end to the frame, which is pressed against the stick of wood, firmly holding it to the frame, the upper end of the spring being bent under a pin in the center standard, Fig. 1. Any other equivalent device for securing and holding the wood may be employed.

The machine is designed to be operated by hand-power; but other power may be applied if desired, in which case it will only be necessary to make the parts of greater strength to correspond with the increase of power.

The operation of the machine thus constructed is obvious. The saw reciprocates between the ways *d*, the gate, and with it the saw, moving

downward as the stick is being sawed, while the pressure of the saw is regulated by the lever and weight, as above described.

The advantages of this improvement are, first, its simplicity and economy and ease of construction, being made almost entirely of wood; second, that with but a slight modification any ordinary buck-saw may be used with our machine; third, obtaining the necessary velocity of motion by means of the grooved wheel F, and thereby avoiding the use of gearing and the consequent loss of power caused by the correspondingly increased friction; and, fourth, the perfect and easy manner in which the pressure of the saw is regulated by means of the lever and weight.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The arrangement and combination of the vertically-sliding gate C and the horizontal

ways *d d* thereon for the tongues *g g* of the saw to slide on, substantially as and for the purpose herein specified.

2. The combination and arrangement of the sliding gate C and the graduated balance-lever I, with its weight K, substantially as and for the purpose herein set forth.

3. A sawing-machine containing the combinations above specified, in connection with a grooved wheel, F, for operating the saw, substantially as herein specified.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

HENRY FRYATT.
E. C. EDMONDS.

Witnesses:

JAY HYATT,
GEO. WING.