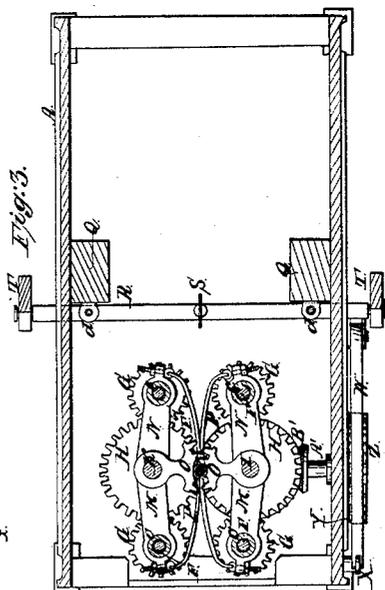
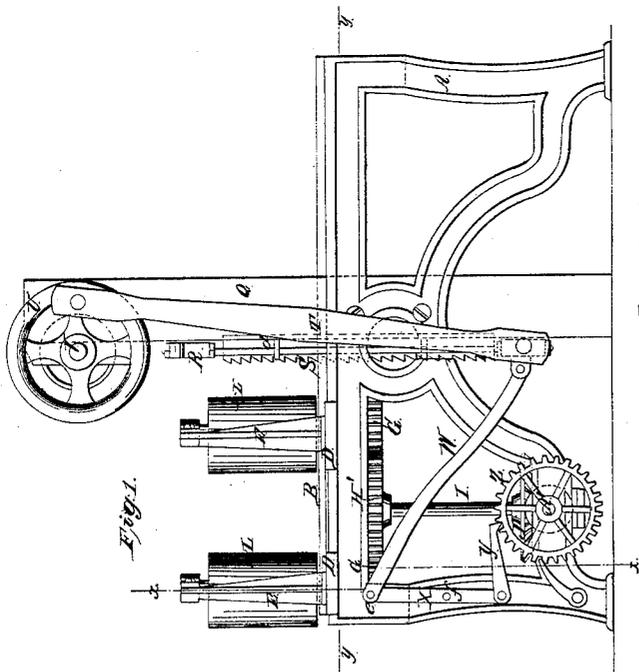
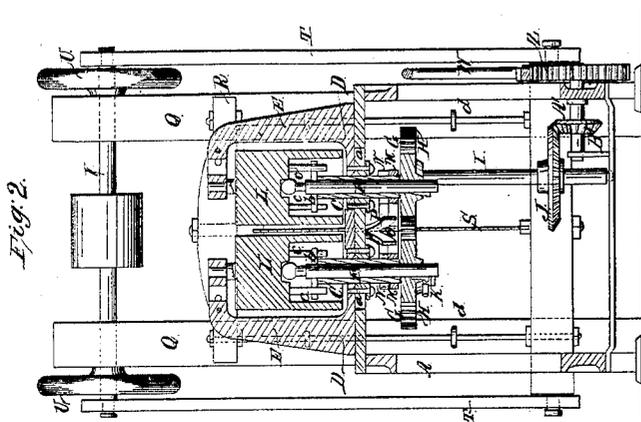


W. H. Doane,

Repairing Machine.

N<sup>o</sup> 34,883.

Patented Apr. 8, 1862.



Witnesses:  
W. Coombs  
R. S. Spurr

Inventor:  
W. H. Doane  
per Messrs  
Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM H. DOANE, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. 34,883, dated April 8, 1862.

### *To all whom it may concern:*

Be it known that I, WILLIAM H. DOANE, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Sawing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is a transverse vertical section of the same, taken in the line  $x x$ , Fig. 1. Fig. 3 is a horizontal section of the same, taken in the line  $y y$ , Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention has for its object the adapting of a certain arrangement of feed-rollers which was patented by William H. Doane and Charles Mason July 27, 1858, to a reciprocating saw, whereby the machine above alluded to may be adapted to certain kinds of work which could not be well performed by the circular saw used in the machine aforesaid.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a frame, which may be constructed in any suitable way to support the working parts of the machine. On the frame A, at one end, there is placed a bed-piece B, which has oblong slots  $a$  made in it, to allow the passage through it of vertical tubular shafts C, which are attached to slides D, placed on the bed-piece. Each slide D is provided with an upright E, the upper parts of which are curved inward toward the center of the bed-piece, as shown clearly in Fig. 2.

Within each hollow shaft C there is placed a spindle F. Through the upper parts of these spindles there pass horizontal arms  $b$ , and on the lower end of each spindle there is fitted a toothed wheel G. There are four slides D, two at each side of the bed-piece, the two at one side being directly opposite and in line with the two at the other side.

The wheels G gear into wheels H H', which are below the bed-piece B. The wheels H H' gear into each other, and the wheel H' is on a vertical shaft I, on the lower part of which there is a bevel-toothed wheel J. The wheel

H is placed loosely on a stationary shaft K, attached to the under side of the bed-piece B.

On the upper part of each spindle F there is fitted a vertical roller L, said rollers having recesses in their lower ends to receive the spindles. Each roller is also provided internally with two pendent rods  $c c$ , between which the arms  $b$  of the spindle fit, thus forming a connection between the spindles and the rollers, as will be fully understood by referring to Fig. 2. The upper journals of the rollers L have their bearings in the upper curved ends of the uprights E E.

On the shafts I K there are placed levers M N, two on each shaft. These levers are allowed to turn freely on the shafts, and each pair M M N N are connected by segment-gears O. The hollow shafts C pass through the outer ends of the levers M N.

P P are springs, the ends of which bear against the ends of the levers M N.

From the above description it will be seen that the rollers L are connected and will move simultaneously in and out from each other, and consequently the stuff that is placed between the rollers will be fed centrally to the saw. This arrangement of rollers was patented by William H. Doane and Charles Mason, July 27, 1858, as previously alluded to.

To the frame A there are attached two uprights Q Q, one at each side of the frame. To each of these uprights Q guides  $d$  are attached, on which a saw-sash R is fitted. The sash is allowed to work freely up and down on its guides  $d d$ , and a saw S of the ordinary reciprocating kind is placed in the sash R. The saw-sash is driven by pitmen T T, which are connected at their upper ends to crank-pulleys U U at the ends of a driving-shaft V at the top of the uprights Q Q, and the lower ends of the pitmen are attached to the lower ends of the saw-sash. To the lower part of the saw-sash, at one side, there is attached an arm W, the outer end of which is connected by a pivot  $e$  to a lever X. This lever is attached by a fulcrum-pin  $f$  to the side of the framing, and the lower end of the lever X has a pawl Y attached, which engages with a ratchet Z on the shaft A' in the lower part of the framing. The shaft A' has a bevel-wheel B' on it, which about gears into the bevel-wheel J on the shaft I.

From the above description it will be seen that as the saw-sash R is operated or worked up and down a feed motion will be communicated to the rollers L through the medium of the pitmen T T, arm W, lever X, and pawl Y, in connection with the gearing B', J, H, H', and G. The rollers L are moved or turned as the saw-sash ascends and are stationary as it descends and cuts, the saw and feed-rollers being operated from one and the same driving-shaft.

I do not claim the arrangement of the feed-rollers L separately, for they have been previously patented. Nor do I claim any of the parts separately; but

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

The combination of the reciprocating saw R S, arm W, lever X, pawl Y, gearing Z A' B' J I, feed-rollers F L, arms M N, springs P, and gearing G H H', all constructed, arranged, and operating in the manner and for the purposes herein shown and explained.

W. H. DOANE.

Witnesses:

C. L. JENKS,

C. D. WOLF.