

(No Model.)

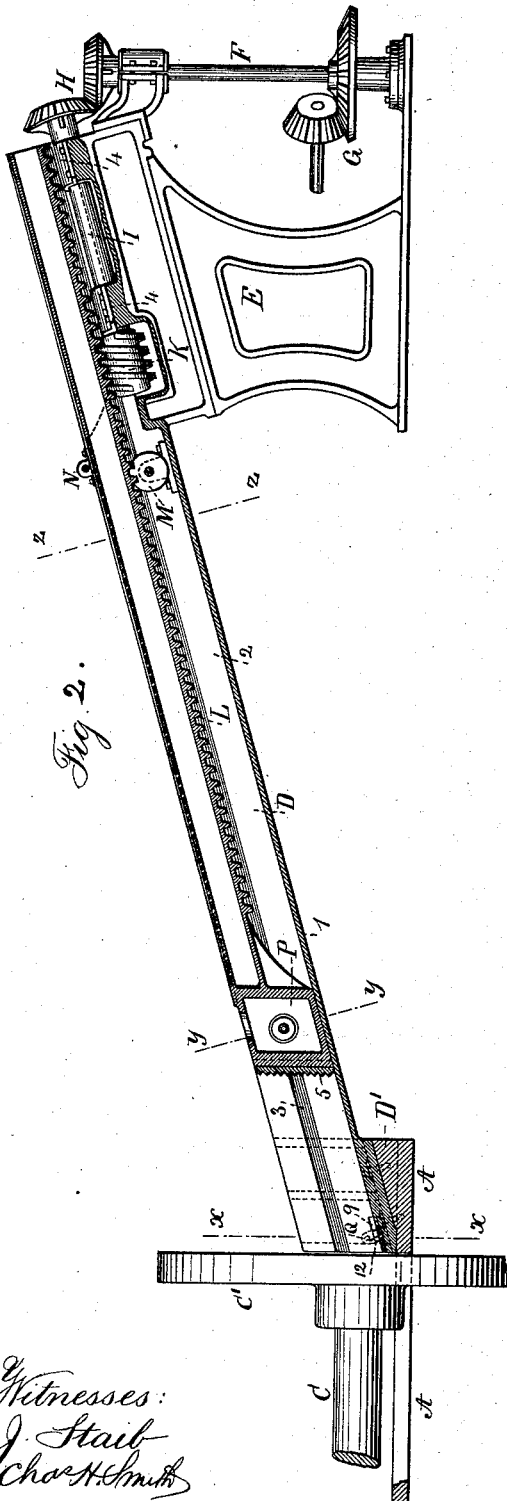
2 Sheets—Sheet 1.

J. J. HAYES.

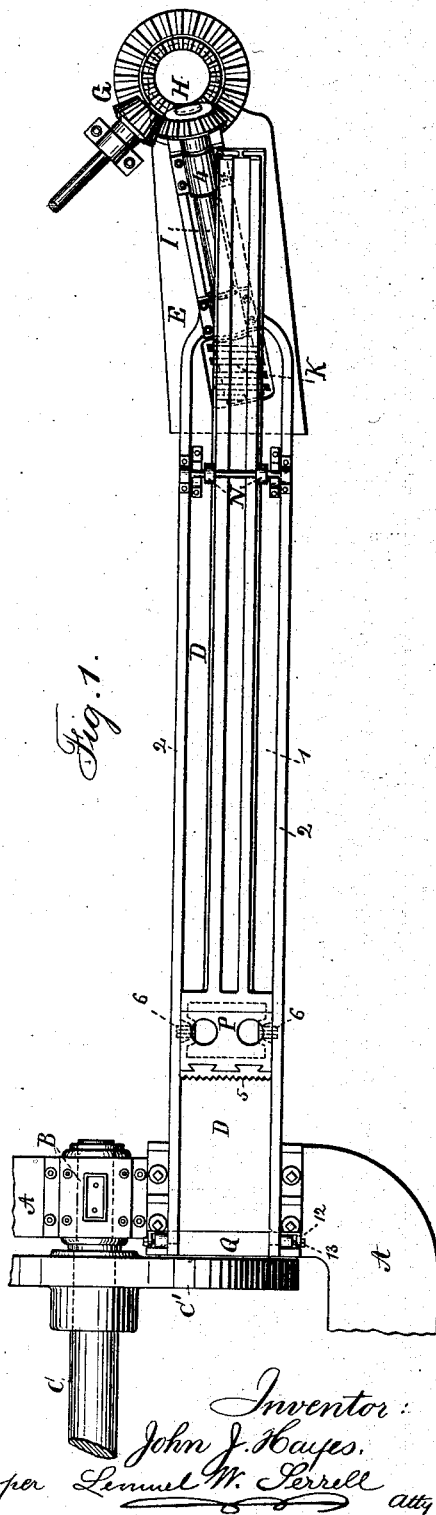
## MACHINERY FOR CUTTING LOGS.

No. 384,763.

Patented June 19, 1888.



Witnesses:  
J. Staib  
Chas H. Smith



Inventor:  
John J. Hayes.  
per Lemuel W. Ferrell atty

(No Model.)

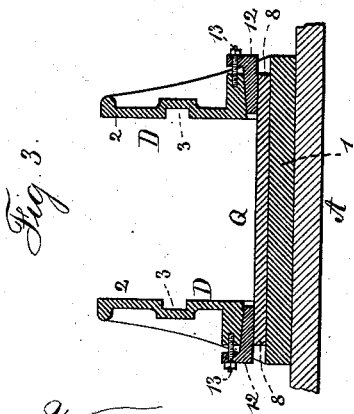
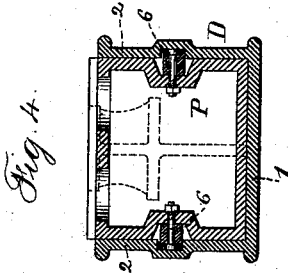
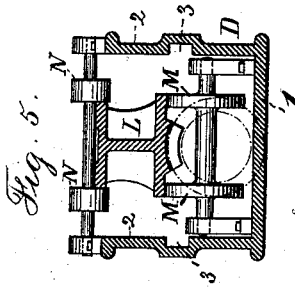
2 Sheets—Sheet 2.

J. J. HAYES.

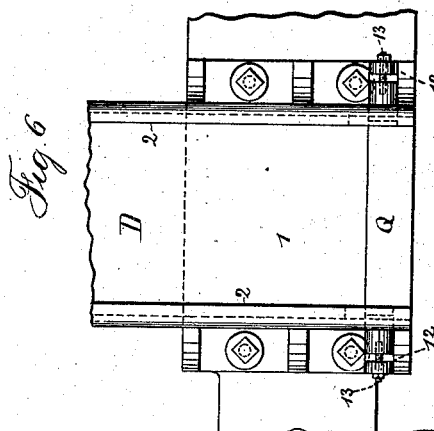
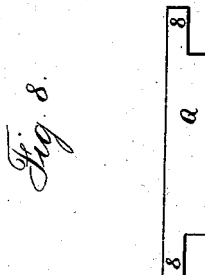
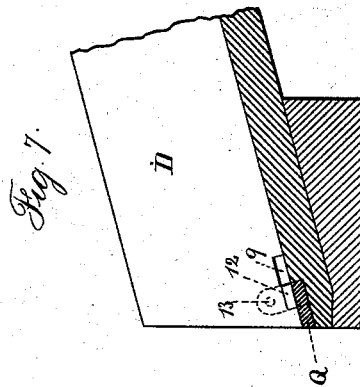
MACHINERY FOR CUTTING LOGS.

No. 384,763.

Patented June 19, 1888.



Witnesses:  
J. Stail.  
Chas. A. Smith.



Inventor:  
John J. Hayes.  
per Lemuel W. Perrell  
Att'y

# UNITED STATES PATENT OFFICE.

JOHN J. HAYES, OF GREEN POINT, NEW YORK.

## MACHINERY FOR CUTTING LOGS.

SPECIFICATION forming part of Letters Patent No. 381,763, dated June 19, 1888.

Application filed April 14, 1887. Serial No. 234,755. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. HAYES, of Green Point, in the county of Kings and State of New York, have invented an Improvement in Machinery for Cutting Logs, of which the following is a specification.

In machinery for cutting wood transversely of the grain, such as is used in cutting up log-wood, difficulty has heretofore arisen in feeding the wood with the required uniformity and steadiness, so as to prevent the parts quivering and springing and causing one cut to be much heavier than another.

My invention is intended for rendering the feed very steady and reliable, and for replacing the lower end of the feeding-trough next the cutter, when the same becomes worn, without changing or disturbing any of the other parts, so that the wood cut will be of uniform thickness and character.

In the drawings, Figure 1 is a plan view of the machine. Fig. 2 is a vertical section longitudinally of the feeding-trough. Fig. 3 is a cross-section at the line  $x x$ , Fig. 2. Fig. 4 is a cross-section at the line  $y y$ , Fig. 2; and Fig. 5 is a cross-section at the line  $z z$ , Fig. 2. Fig. 6 is a plan view at the lower end of the feeding-trough. Fig. 7 is a section longitudinally of the trough at the lower end. Fig. 8 is a detached view of the nose-piece. Figs. 3 to 8, inclusive, are in larger size than Figs. 1 and 2.

The main frame A receives the journal-boxes for the horizontal shaft C, one of which boxes is shown at B; and upon the shaft C is a head, C', having knives or cutters placed therein at an inclination, so as to cut transverse shavings from the logwood or other log placed within the inclined trough D as the head C' and knives are revolved. The frames, journal-boxes, shaft-head, and knives are of any desired character, and are well known in this class of machinery.

The trough D is made with a bottom, 1, and sides 2, and in the inner faces of the sides 2 are longitudinal grooves 3. The lower end of this trough D rests upon a wedge-shaped bearing, D', and is bolted to the main frame A, and the said trough D is at a proper inclination, and beneath the upper end is a suitable supporting-frame, E.

The vertical shaft F is driven by suitable

gearing, G, and the bevel-wheels H connect the same to the screw shaft I, supported in bearings 4 upon the frame E, and at the lower end of this shaft I is a screw-pinion, K, above which is a rack-bar, L, having teeth upon its under surface, with which the screw-pinion K gears, and at the lower end of the rack-bar L there is a head, P, having upon its face hold-fast projections 5, which by penetrating the rear end of the log prevent such end of the log slipping upon the face of the head P. At each side of this head P are rollers 6, that travel within the longitudinal grooves 3 in the sides 2 of the trough, and these rollers 6 hold down the head P and prevent the same from vibrating or quivering when the rotary cutters are acting upon one end of the log and the head is moving and holding the other end of the log, and these rollers 6 also support the weight of the head and lessen friction.

The head P and rack-bar L are made in one or permanently connected together, and there are rollers or wheels M, the shafts of which are supported in bearing-blocks within the trough D, which wheels support the rack-bar near the screw-pinion K, to lessen the friction caused by the weight of the rack-bar, and the rollers N above the rack-bar serve to hold down such rack-bar and prevent any injury or separation between the rack and the screw-pinion. The shafts of the rollers N are in bearings on the upper edges of the trough.

The screw-shaft I is inclined to a vertical plane passing longitudinally through the trough D, so that the worm or threads of the screw-pinion K may be nearly or quite at a right angle to the rack-bar L. Hence such screw-pinion will act directly upon the teeth of the rack-bar, and nearly at right angles to its length, so that the bevel-gears H will not be in the way of the longitudinal movement of the rack-bar, and this screw-pinion exerts a powerful force in moving the rack-bar and head longitudinally of the trough D, and there is no risk of the parts vibrating or trembling during the motion. Hence the cut across the end of the wood is very uniform, and there is no risk of injuring any portions of the machine.

The lower end of the trough adjacent to the cutters in machines of this kind is liable to wear rounding, and the wood breaks away at the lower edges of the log instead of being cut

off with uniformity. To overcome this difficulty, I form a channel across the bottom 1 of the trough at its extreme lower end and adjacent to the cutter-head, and into this transverse channel I insert a removable nose-piece, 5 Q, having projecting ends 8, as seen in Fig. 8, and in the sides 2 of the trough, near the bottom ends, are mortises 9, that are large enough to allow the nose-piece Q to be slipped endwise 10 through said mortises and then to be brought forward and dropped down into the transverse channel across the trough at the lower end of the bottom 1, and I insert into the mortises 9, above each projecting end 8 of the nose-piece 15 Q, wedges 12, having L-shaped ends, as seen in Figs. 3 and 6, and the screws or bolts 13 passing through eyes in the L-shaped ends of the wedges serve to press said wedges into place above the ends 8 of the nose-piece Q, so 20 as to hold the same down firmly upon the bottom of the trough. By the removal of these screws 13 and wedges 12 the nose-piece Q can be lifted and removed whenever the edge thereof has become worn or rounding and another nose-piece introduced in its place. 25

I claim as my invention—

1. A revolving cutter-head and the frame for the same and an inclined trough for the reception of the log to be acted upon and having 30 a channel across the lower end of the bottom of the trough and mortises in the sides of the trough, in combination with the removable

nose-piece filling the channel and passing through the mortises, and screws for holding down the removable nose-piece, substantially 35 as set forth.

2. The combination, in a machine for cutting logs transversely, of a revolving head with knives, a frame and journal-boxes for supporting the same, an inclined trough for receiving 40 the log to be cut, a head and bar within the trough, and teeth on the under side of the bar, and a screw-pinion below such bar for acting directly upon the teeth, a shaft for revolving the screw-pinion, and rollers above such rack-bar 45 for holding the same down, substantially as set forth.

3. The rack-bar having teeth on its under surface and the screw-pinion for moving the rack-bar endwise, in combination with the 50 trough having longitudinal grooves in its inner faces, the supporting-wheels M below the rack and the rollers N above such rack to hold the same down, the head P, connected to the rack and having holdfast projections 5 upon 55 its front surface, and the guide-rollers 6 upon the sides of the head and within the longitudinal grooves in the inner faces of the trough, substantially as set forth.

Signed by me this 11th day of April, 1887. 60

JOHN J. HAYES.

Witnesses:

E. F. AUTENRIETH,  
FREDRIC KNOCHE.