

J. L. HAVEN.  
Machine for Trimming the Ends of Vehicle Axle Boxes.  
No. 233,150. Patented Oct. 12, 1880.

Fig. 1.

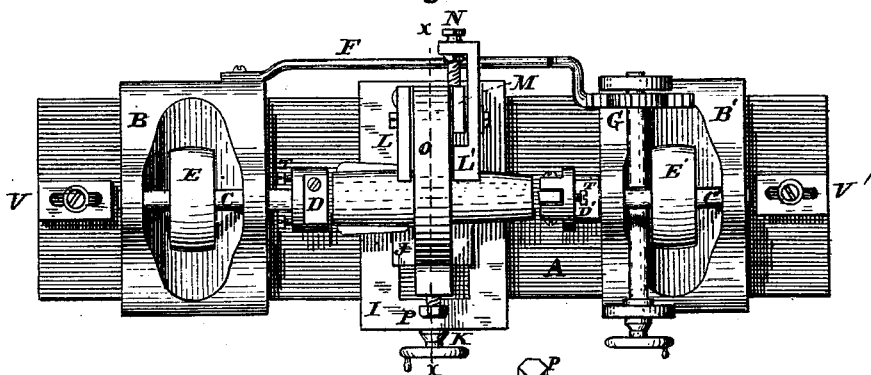


Fig. 2.

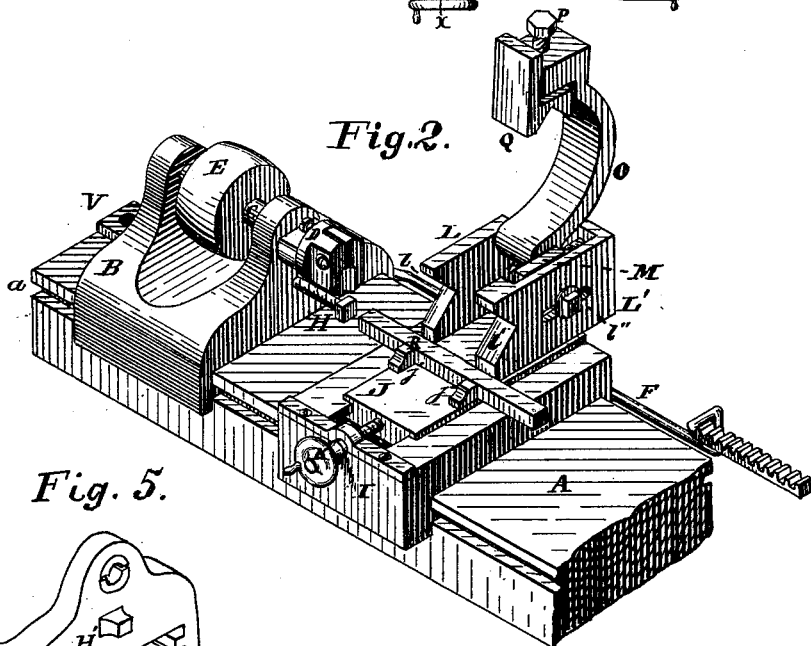


Fig. 5.

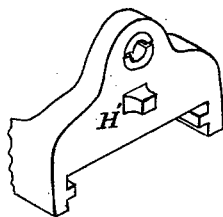
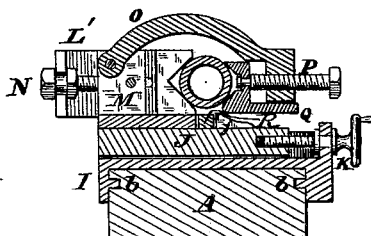


Fig. 3.

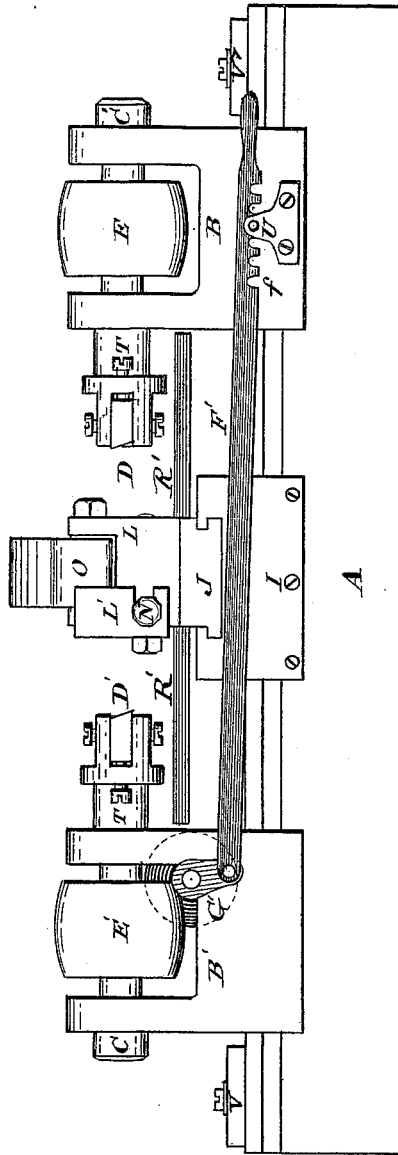


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Fig. 4.



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# UNITED STATES PATENT OFFICE.

JAMES L. HAVEN, OF CINCINNATI, OHIO.

## MACHINE FOR TRIMMING THE ENDS OF VEHICLE-AXLE BOXES.

SPECIFICATION forming part of Letters Patent No. 233,150, dated October 12, 1880.

Application filed June 9, 1879.

*To all whom it may concern:*

Be it known that I, JAMES L. HAVEN, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Machine for Trimming the Ends of Vehicle-Axle Boxes, of which the following is a specification.

My invention relates to a device for enabling the rapid and accurate dressing or trimming of axle-boxes of vehicles to a square and uniform end finish and to a definite length.

My device comprises a clamp, adjustable to different diameters and tapers of boxes, which enables each box in succession to be accurately centered and gripped for the simultaneous action of two similar revolving cutters, which are for this purpose caused to mutually approach one another during the act of cutting.

My device further comprises means for securing definite and uniform action of the cutters, so as to insure precise conformity of the work in hand to any desired length standard.

In the accompanying drawings, Figure 1 is a top view of a machine embodying my invention. Fig. 2 is a perspective view of a portion of the same. Fig. 3 is a section at the line  $x$  of Fig. 1. Fig. 4 is a rear view, to a somewhat larger scale, illustrating modifications of my gaging and feeding devices. Fig. 5 represents a modification of my stop.

A may represent a bed or base similar to a lathe-bed. This bed supports and guides two sliding head-stocks. In these head-stocks are journaled the shafts or spindles  $C$   $C'$  of rotary cutters  $D$   $D'$ . Pulleys  $E$   $E'$  upon said shafts receive belts whereby said cutters are rotated, their rotation being preferably in opposite directions. A rack-bar,  $F$ , extending from one head-stock and receiving a pinion,  $G$ , journaled in the other head-stock, enables the attendant to cause the said head-stocks with their contained cutters to be simultaneously moved toward or from the work.

In the preferred form of my device each head-stock is provided with a screw-threaded projection or stop,  $H$ , that coacts with a gage (to be presently described) to arrest the mutual approach of the head-stocks at any predetermined distance corresponding to the desired length of the boxes which are, for the time being, undergoing operation.

Resting upon the bed  $A$ , at or near its mid-

length, is my slide-rest for holding the work. This slide-rest consists of the following members:  $I$  is a foot, slotted transversely to hold and guide a block,  $J$ , in which is tapped a screw,  $K$ , whereby the said block may be shifted transversely of the bed, so as to center the work accurately for the dressing-cutter. Rising from the block  $J$  are cheeks, of which one cheek,  $L$ , has on its front edge an angular indentation,  $l$ , whose apex or re-entrant angle is level with the axis of the dressing-cutters. The other cheek,  $M$ , has bolted to it a slidable jaw,  $L'$ , having an angular indentation,  $l'$ . The bolt-orifice  $l''$  in the said jaw, being of slot form, permits the said jaw to be adjusted forward or backward by means of a screw,  $N$ , Figs. 1 and 4, in order to enable the attendant to adapt the jaw to the precise taper of the work. Hinged or pivoted to the cheeks  $L$   $M$  is a curved arm,  $O$ , whose outer extremity contains a screw,  $P$ , that carries another notched or indented jaw,  $Q$ .

The mutual approach (or "feed") of the cutters onto the work and their recession when the work is performed are regulated by suitable stops or gages, as follows: Resting on the block  $J$ , and held against lateral displacement by guides  $j$ , is a rod or bar,  $R$ , constituting the gage proper. The location of this bar is such as to place it in line with and between the stops  $H$ . If the stops have the same projection from the head-stocks that the cutters have, then a gage is employed whose length is precisely that of the axle-boxes when finished; but it is evident that a gage may be used of less or greater length, providing the adjustable stops  $H$  are correspondingly advanced or retracted.

The advancement of the cutter-bits by the set-screws  $T$  affords an additional means of adjustment.

Adjustable stops  $V$   $V'$  enable the attendant to accurately limit the retraction of the head-stocks.

The above-described preferred form of my invention may be varied in non-essential particulars. For example, separable gages, such as shown at  $R'$ , Fig. 4, may have such length as to impinge directly against the faces of the head-stocks, and thus dispense with the adjustable stops  $H$ .

A crank,  $G'$ , and bar  $F'$ , Fig. 4, may be substituted for the pinion  $G$  and rack  $F$ , respect-

ively, and said bar F' may have notches *f*, to be engaged at discretion over a pin, U, upon the other head-stock, so as to enable the machine to be adapted for operation on widely-

5 diverse lengths of boxes.  
A permanent projection from each or either head-stock, such as illustrated at H', Fig. 5, may be substituted for one or both of the adjustable stops H.

10 I claim as new and of my invention—

1. In combination with a pair of revoluble cutters mounted on head-stocks capable of movement toward and from one another, as described, the intermediate vise or clamp, consisting of the notched and adjustable jaws L

15 L' and the jaw Q, the latter mounted on a hinged arm, O, and the whole secured to a block, J,

adjustable transversely of the machine, substantially as set forth.

2. The combination of the clamping device, 20 consisting of slotted foot I, block J, having cheeks L M, slidable jaw L', screws K, N, and P, curved arm O, and notched jaw Q, the simultaneously-advanced cutters D D', the gage-bar R, and the adjustable projections H 25 from the head-stocks B B, substantially as set forth.

In testimony of which invention I hereunto set my hand.

JAMES L. HAVEN.

Attest:

GEO. H. KNIGHT,

L. H. BOND.