

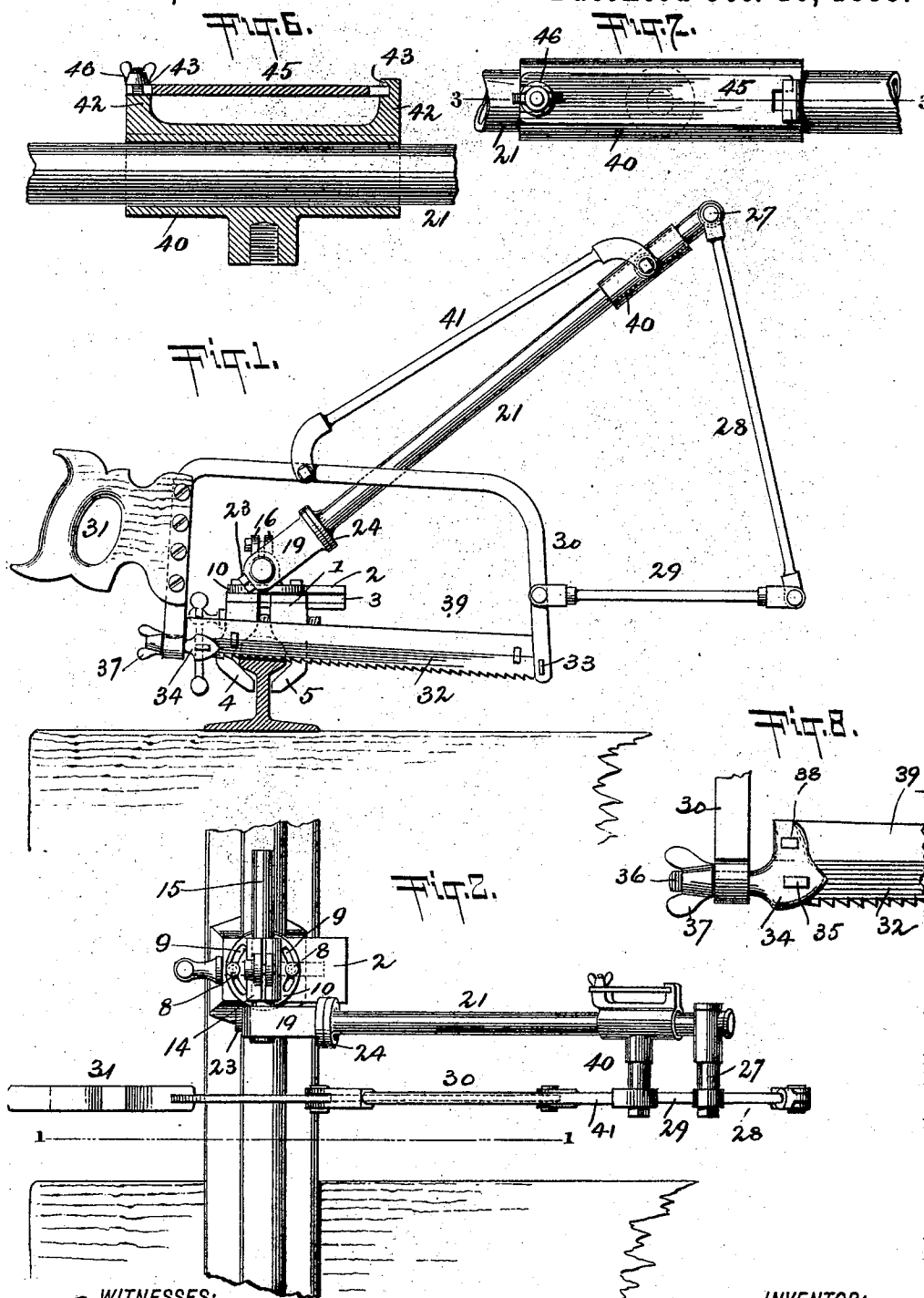
(No Model.)

2 Sheets—Sheet 1.

E. A. SMITH.
DRAG SAW MACHINE.

No. 506,277.

Patented Oct. 10, 1893.



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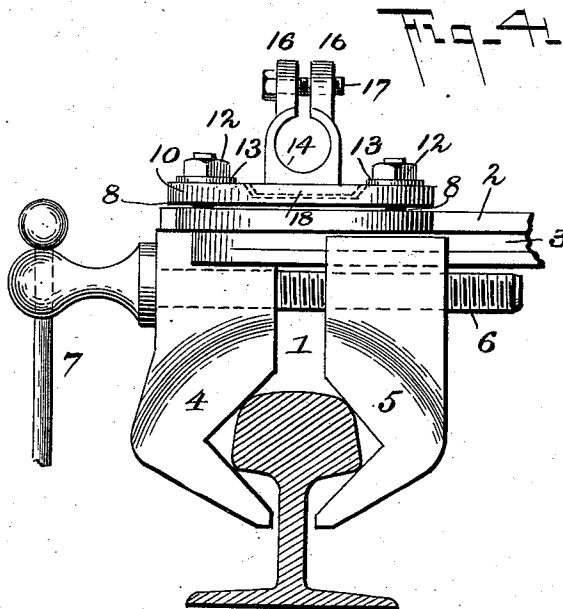
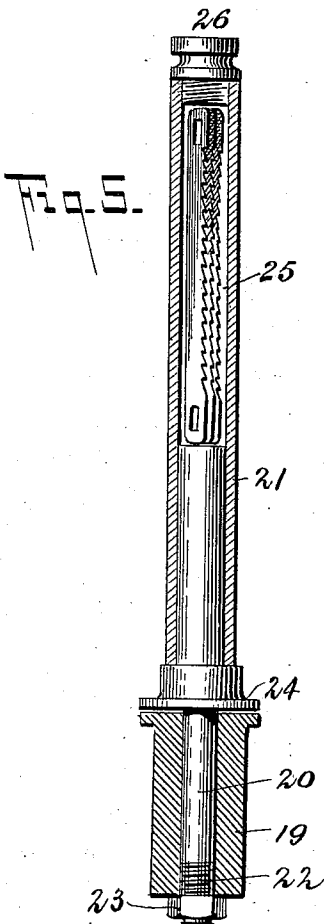
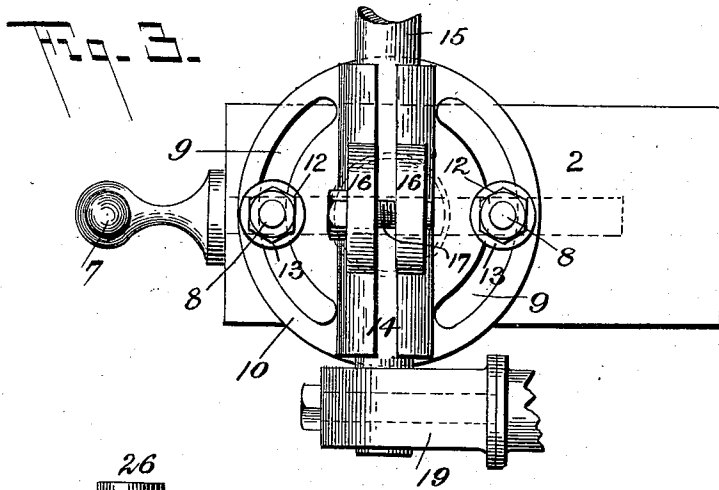
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2 Sheets—Sheet 2.

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DRAG SAW MACHINE.

No. 506,277.

Patented Oct. 10, 1893.



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UNITED STATES PATENT OFFICE.

EDWARD A. SMITH, OF NEW YORK, N. Y., ASSIGNOR TO THE BOSTON TOOL COMPANY, OF BOSTON, MASSACHUSETTS.

DRAG-SAW MACHINE.

SPECIFICATION forming part of Letters Patent No. 506,277, dated October 10, 1893.

Application filed February 4, 1893. Serial No. 460,931. (No. model.)

To all whom it may concern:

Be it known that I, EDWARD A. SMITH, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Drag-Saw Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to tools for cutting railway bars, in or out of the track, either straight across or at any angle up to forty-five degrees; or for cutting steel or iron bars, chain or wire cable, piping, and the like.

The object of the present invention is to simplify the construction and to render the tool more efficient in operation.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings: Figure 1 is a side elevation of a tool constructed in accordance with my invention, showing the same in the act of cutting a railroad rail. Fig. 2 is a plan view of the same. Fig. 3 is a plan view on an enlarged scale of the turn-table and split-sleeve. Fig. 4 is an end view of the vise, the turn-table and the split-sleeve. Fig. 5 is a detail sectional view of the hollow arm. Fig. 6 is a sectional view of the slidable sleeve carried by the rotatable post. Fig. 7 is a side view of the same. Fig. 8 is a detail view of the movable bracket to which the saw blade and guide bar are secured.

In the said drawings the reference numeral 1 designates a vise, comprising the head 2, formed on each side with a groove 3, the stationary jaw 4 and the movable jaw 5, formed with flanges which engage with the grooves in the head.

The numeral 6 designates a screw for moving the movable jaw to and from the stationary jaw, as in the ordinary parallel vises, and is provided with a headed operating rod 7, passing through one end thereof. The upper side of the head 2 is provided with two screw

bolts or studs 8, which pass through segmental slots 9, in a circular turn-table 10 which is supported upon said head. These screw rods are provided with binding nuts 12, and washers 13. Formed with this turn-table is a split-sleeve 14, having a circular bore in which is located a rotatable and horizontally movable rod 15. This sleeve upon its upper side is formed with lugs 16, having screw threaded apertures through which passes a headed clamping screw 17. The turn-table upon its under side is provided with a circular hub 18, shown in dotted lines in Figs. 2 and 4 which fits in a corresponding recess in the upper face of the head 2.

Formed with or secured to the rod 15 is a block 19, having a circular bore to receive the reduced end 20 of a rotatable post 21, which end is formed with screw threads 22 to receive a binding nut 23. The post is also provided with a collar 24 which abuts against the block 19. The upper end of the post 21 is made hollow or formed with a recess 25 to receive extra saw blades and is provided with a screw cap 26. Pivoted to a stud 27 on this post is a downwardly extending rod 28, to the lower end of which is pivoted a horizontal rod 29 which in turn is articulated or pivoted to a saw frame 30, provided with a handle 31 and a blade 32, the latter being provided with any suitable means of regulating its tension. In the present instance the outer end of the blade is secured to one end of the frame 30 by means of a key 33, while its inner end is secured to a movable bracket 34, by means of a key 35. This bracket is formed with a screw-threaded shank 36, which passes through an aperture in the frame 30, provided with a thumb-nut 37. Also secured to the outer end of the frame 30 and the extension 38 of bracket 34, is a guide-bar 39 which follows in the cut made by the saw and tends to guide the latter in its work.

The numeral 40 designates a sleeve carried by and slidable upon the post 21, to which is pivoted a guide-rod 41, the opposite end of which is pivoted to the horizontal portion of the said frame. This sleeve upon one side is provided with lugs 42, having recesses 43 at their outer ends to receive the ends of a

wrench 45, a set screw 46 holding the latter in place.

The operation will be readily understood: The vise jaws are clamped to a rail or other object to be cut and the saw reciprocated back and forth which will quickly sever the same, the guide-rod 41, the connecting rods 28 and 29, and the post 21 serving to hold and steady one end of the saw and guide it in its work. To vary the angle of the cut the binding nuts 12 are loosened and the turn-table can then be rotated to give the saw the proper inclination with respect to the horizontal axis of the article or object being cut, and by loosening the nut 23, the angle of the same can be varied vertically with respect to the object. By loosening the clamping screw 17, the rod 15, may be adjusted so as to bring the same nearer to or farther from the vise.

From the above it will be seen that the tool is much simplified in construction and rendered more efficient in operation.

Instead of securing the guide bar to the extension 28 of bracket 34 and to the frame 30, it may be clamped to the saw at each end, as seen in Fig. 1.

Having thus described my invention, what I claim is—

1. In a drag sawing tool or machine, the combination with the vise comprising a head, a stationary jaw, a movable jaw and operating screw, the screw bolts secured to said head and the binding nuts, of the rotatable turn-table having segmental slots, through which said bolts or studs pass, the sleeve formed with or secured to said turn-table, the rod carried by said sleeve, the post connected with said rod, the rod pivoted to said post and pivotally connected with a rod adapted to be articulated to a saw frame, substantially as described.

2. In a drag sawing tool or machine, the combination with a vise comprising the head, provided with upwardly projecting screw threaded bolts or studs, the stationary jaw, the movable jaw, and the operating screw, of the turn-table having segmental slots through which said bolts or studs pass, the split-sleeve provided with lugs and a clamping screw, the rotatable and horizontally movable rod located in said sleeve, the block connected with said rod, the post, the rod pivoted thereto, and pivoted to a rod adapted to be articulated to a saw frame, substantially as described.

3. In a drag sawing tool or machine, the combination with the vise comprising the head having a circular recess and upwardly

projecting screw bolts or studs, of the turn-table having a circular hub seated in said recess and formed with segmental slots through which said bolts or studs pass, the split-sleeve and its clamping screw, the rotatable and horizontally movable rod carried by said sleeve, the block connected with said rod, the rotatable hollow post having a screw cap and a screw threaded reduced end passing through a circular bore in said block, the binding nut, the rod pivoted to said post and the connecting rod pivoted to said rod, adapted to be articulated to a saw frame, substantially as described.

4. In a drag sawing machine, the combination with the vise, and the rotatable post of the slidable sleeve carried thereby, the guide-rod pivoted thereto, and adapted to be pivotally connected with a saw frame, the rod pivoted to said post and pivotally connected with a rod adapted to be pivotally connected with the saw-frame, substantially as described.

5. The combination with a saw frame, adapted for use in connection with a machine of the character described, of the saw blade secured to said frame, and the guide bar located above said saw blade and connected therewith, with its lower edge abutting against the upper edge of the blade, substantially as specified.

6. The combination with a saw frame, of the saw blade secured thereto, and the guide bar located above and connected with said blade, substantially as specified.

7. In a drag sawing machine, the combination with the vise, the rotatable post, the slidable sleeve carried thereby, the guide rod pivoted thereto and the rod pivoted to said post and to a connecting rod, of the saw frame to which said guide and connecting rods are pivoted, the saw blade and guide bar secured to said frame and the movable bracket connected with said frame to which the other ends of said rod and bar are secured, substantially as described.

8. The slidable sleeve having recessed lugs adapted to receive the ends of a wrench and a set-screw for holding the latter in place, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

EDWARD A. SMITH.

Witnesses:

GEORGE W. BENTLEY,
RICHARD ALEXANDER.