

(No Model.)

V. F. PRENTICE.
ENGINE LATHE.

No. 553,594.

Patented Jan. 28, 1896.

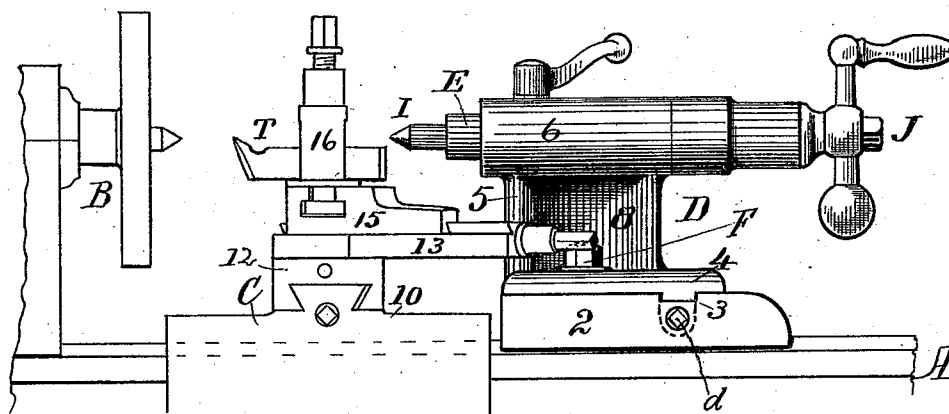


FIG. 1.

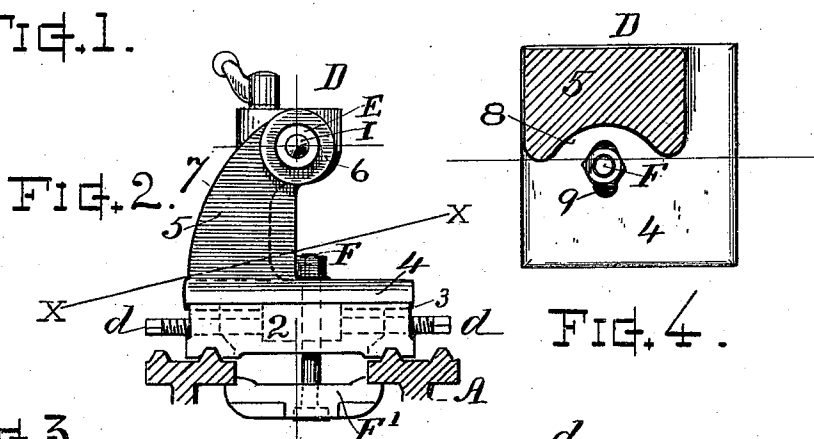


FIG. 2.

FIG. 4.

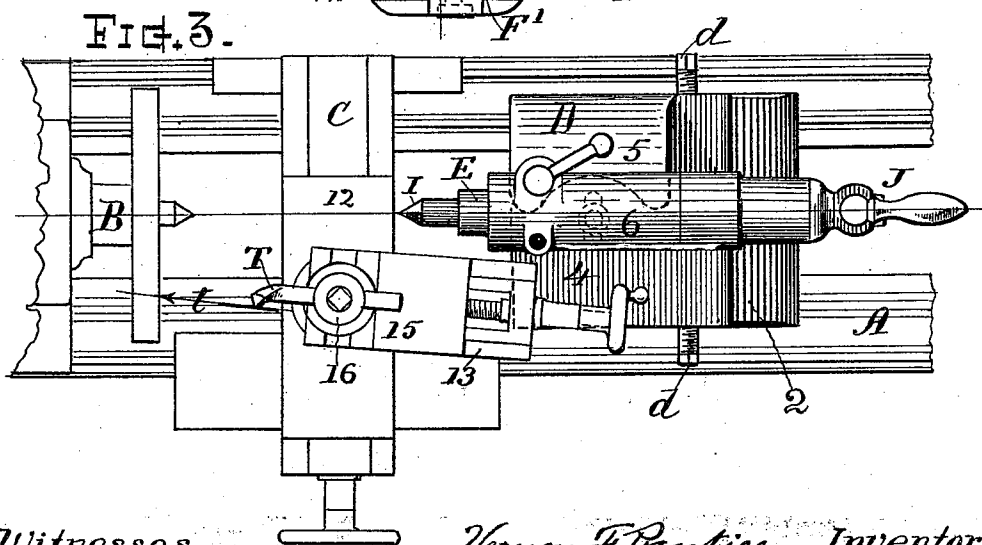


FIG. 3.

Witnesses.

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VERNON F. PRENTICE, OF WORCESTER, MASSACHUSETTS.

ENGINE-LATHE.

SPECIFICATION forming part of Letters Patent No. 553,594, dated January 28, 1896.

Application filed February 4, 1895. Serial No. 537,234. (No model.)

To all whom it may concern:

Be it known that I, VERNON F. PRENTICE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Engine-Lathes, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

My invention relates to the construction of the tail-stock, whereby it is more especially adapted for use in combination with the compound tool-rest and for rendering the mechanism practicably operative under conditions and for certain classes of work for which the usually constructed engine-lathe and its ordinary tail-stock is not adapted, the object being to provide a tail-stock which is constructed in the peculiar manner set forth, with the body or standard erected on its base in rear of the vertical plane passing through the center of the base or foot and the tail-spindle axis, thus to afford facility for carrying or adjusting the swing-plate of the tool-rest over the base of the tail-stock when the parts are at closely adjacent working positions. These objects I attain by the construction of the mechanism as shown in the drawings, wherein—

Figure 1 is a front view of such parts of an engine-lathe as will illustrate the nature of my invention. Fig. 2 is an end view of the tail-stock and section of the bed and supporting way. Fig. 3 is a plan view of the parts shown in Fig. 2, and Fig. 4 is a horizontal section of the tail-stock at line X X on Fig. 2.

Referring to parts, A denotes the bed-frame having the guideways thereon. B indicates the rotatable spindle and face-plate mounted in the head-stock, and C the carriage. These parts are of well-known construction and are operated by mechanism such as heretofore employed in engine-lathes, which mechanism is not herein illustrated.

D indicates the tail-stock of peculiar construction, which is a feature of my invention. The bottom part or cricket-block 2 that is seated on the guideways is formed of low vertical dimension with a seating-top surface,

having the transverse guide 3 therein, as indicated. The part of the tail-stock above the cricket is formed with a base or seat-plate 4, which extends across and rests upon the top of the cricket, giving ample supporting-surface both at front and rear of the central axis, said base carrying a rearwardly-offset body or standard portion 5, with a forwardly-overhanging top or guide portion 6, all integral and formed substantially as shown. The body 5 rises from the base 4, upon which it is erected integrally, with its solid mass substantially disposed thereon in rear of the vertical central plane through the base 4 and tail-bearing axis, thereby giving clear space in front of said plane, the forward part of the base being flat and unobstructed. The front of the body is made substantially perpendicular, and its rear side is curved upward and forward, as at 7, to the cylindrical exterior of the guide or bearing 6, through which the tail-spindle E slides. The body 5 joins the bearing portion at its rear lower part, back of the central plane, and the front of the bearing-cylinder 6 overhangs the base 4 at the front of the body-standard, as illustrated. The front of the body is hollowed or inwardly curved laterally, as at 8, and a central opening 9 is formed through the base 4 for the clamping-bolt F, which connects with the shoe F', which latter is arranged underneath the bed or frame in usual manner.

The tail-spindle E for carrying the center I, the spindle-working screw and its operating handle or crank J are of well-known construction. The base 4 is adjustable on the cricket and guide 3 by means of the set-over screws *d d*.

The compound tool-rest C, which comprises the saddle 10, the cross-slide 12, the swing-plate 13 mounted on said slide and carrying the tool-holder slide 15 and tool-post 16, together with their respective operating screws and handles, are arranged substantially in well-known manner. This compound tool-rest, in its detail of construction, is not my present invention, this invention embracing such compound tool-rest only as an element in combination with a tail-stock of such peculiar structure or character as will coactively therewith enable the mechanism to

perform its operation in an engine-lathe, as herein explained, under conditions for which the ordinary structure is inadapted.

By constructing the tail-stock as above described a very desirable mechanism is produced, as the space in front of the center, above the base of the tail-stock, is unoccupied. Thus when the tail-stock is used in combination with the compound tool-rest, the swing-plate of the compound tool-rest can be swung around over the base 4 and conveniently operated in position for feeding the tool into internal bevels when, as on short work, the tail-stock is brought closely adjacent to the tool-rest, (see Fig. 2)—as, for instance, when feeding the tool in a direction such as indicated by line *t*—this being a highly useful and convenient capability in the engine-lathe. It also gives space for the clamp-bolt nut with convenient access thereto above the base for its operation when shifting the tail-stock and employing but a single clamp-bolt, which bolt is given a position near the central vertical plane, thereby affording facility for more extended lateral set-over for the tail-stock backward or forward from the central line when turning taper forms.

I claim and desire to secure by Letters Patent—

1. The tail-stock for engine-lathes, having the horizontal base or seat-plate 4, the body or standard 5 integrally disposed upon said base wholly in rear of its central line, with the integral forwardly over-hanging tail-spindle-bearing 6 at the top of said body, the upright front of the body backwardly recessed, as at 8, below said bearing; and the hole 9 for the clamp-bolt formed through said base at or nearly adjacent to the central plane, in combination with the cricket-block, and the lathe-bed having the front and rear horizontal supporting guide-ways, the centrally

disposed clamp-bolt with its adjusting nut above the foot and beneath the spindle bearing, all substantially as shown and described. 45

2. In an engine-lathe having horizontal guide-ways, the combination, substantially as described, of the compound tool-rest having the laterally adjustable swing-plate carrying tool-holding parts, the tail-stock comprising the horizontal cricket-block, and the upper portion adjustably supported on said cricket-block, and consisting of the base or seat-plate, the rearwardly offset body erected upon said base in rear of its vertical center plane, and having the forwardly overhanging tail-spindle-bearing integrally formed and disposed thereon, as shown, and the tail-spindle arranged in said bearing, all substantially as and for the purpose set forth. 50 55 60

3. The combination of the low cricket-block having the top seating surface with transverse guide, the tail-spindle support composed of the base or seating-plate adjustably mounted on said cricket-block, the body standard integral with said base and standing thereon substantially in rear of the central vertical plane, the back of said body forwardly arched and carrying the integral forwardly overhanging bearing at the top thereof, the tail-spindle mounted in said bearing, the clamp-bolt arranged through an opening in said base approximately adjacent to the center plane, with its operating nut disposed above the top of the base and beneath the bearings, the binding-shoe on said bolt, and the set-over-adjusting-screw in said cricket, all substantially as shown and described. 65 70 75

Witness my hand this 1st day of February, 1895.

VERNON F. PRENTICE.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.