(No Model.)

A. DODDS.

TAIL STOCK FOR LATHES.

No. 310,260. Patented Jan. 6, 1885.

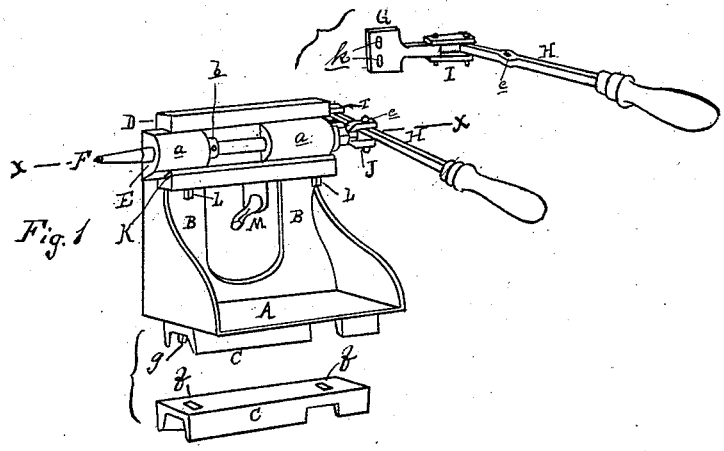

Fig. 1

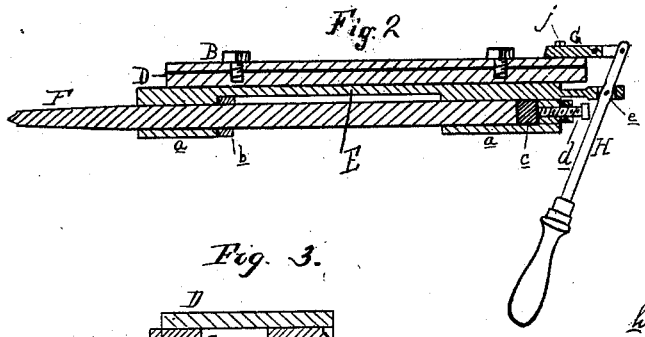

Fig. 2

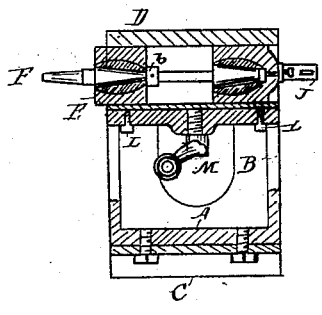

Fig. 3.

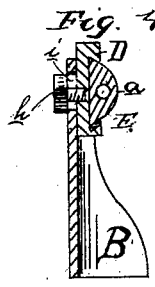

Fig. 4.

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UNITED STATES PATENT OFFICE.

ALEXANDER DODDS, OF GRAND RAPIDS, MICHIGAN.

TAIL-STOCK FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 310,260, dated January 6, 1885.

Application filed December 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER DODDS, of Grand Rapids, in the county of Kent and State of Michigan, have invented new and useful Improvements in Tail-Stocks for Lathes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction of tail-stocks for lathes; and the invention consists in the peculiar construction and arrangements of the parts, by means of which the tail-spindle is permitted to revolve with the work being turned, and it is easily adjusted and kept in alignment.

Figure 1 is a perspective view. Fig. 2 is a section on the line X X through the axis of the spindle. Fig. 3 is a vertical longitudinal section, with portion of the handle removed, showing the spindle provided with taper-bearings. Fig. 4 is a vertical cross-section.

In the accompanying drawings, which form a part of this specification, A represents a base provided with the standards B, which carry the operating parts of the device. This base is adjustably secured upon a flanged casting, C, by means of screws *g*, passing through slots *f* in said casting, which in turn is placed between the shears of the lathe, and serves to keep the tail-stock in alignment, the base being capable of lateral adjustment upon the casting.

D is a dovetail guide-block adjustably secured to the upper ends of the standards B by means of screws *h*, passing through slots *i* in said standards in such a manner that it can be vertically adjusted so as to bring the tail-spindle in vertical alignment with the head-spindle. This guide-block receives the cross-head E, which is provided with suitable boxes, *a*, within which the tail-spindle F is journaled, there being a set-collar, *b*, secured to the spindle at the rear of the front bearing, to prevent the spindle from being drawn from its boxes while being retracted from the work. In the heel of the rear bearing I place a step, *c*, of any suitable material, against which the rear end of the spindle has a bearing, and through the end of this rear bearing there is tapped an adjusting-screw, *d*.

G is an arm or bracket adjustably secured to the rear standard, B, by screws *j*, passing through slots *k* in said bracket, and to this bracket the end of the lever H is connected by a toggle, I. This lever is pivotally secured at *e* to a yoke, J, which is rigidly secured to the rear end of the cross-head E, the parts being so connected together that the lever has a radial movement parallel with the alignment of the spindle, and by means of which the cross-head E can readily be moved horizontally for advancing and retracting the spindle. Between the lower edge of the cross-head E and the guide I place a "gib," K, its frictional contact with the cross-head being regulated by the screws L.

M represents a hand-screw, tapped through the guide-block D, by means of which the gib may be pressed against the cross-head, so as to hold the spindle at any desired point. In this construction it will be observed that the tail-spindle revolves with the work being turned by reason of frictional contact with the work which is revolved by the live-spindle, and that simple means are provided for adjusting the spindle to lateral and vertical alignment with the head-spindle.

If desired, a tail-screw may be employed for operating the cross-head, instead of the lever described, without departing from the spirit of my invention, and in a heavy lathe such construction would be preferable.

In the accompanying drawings, I show in Fig. 2 a spindle having cylindrical bearings, and in Fig. 3 I show the spindle as provided with two taper or conical bearings which are journaled in "Babbitt" metal in chambered boxes upon the cross-head; but I do not desire to be confined to either of these constructions; hence I have not specifically described the same.

What I claim as my invention is—

1. A tail-stock for lathes, provided with a cross-head having bearings and arranged to move parallel with the bed of the lathe, a spindle revolving in said bearings, and the means, substantially as described, for sliding such cross-head and bearings lengthwise of the spindle in the tail-stock, as and for the purposes set forth.

2. In a tail-stock for lathes, and in combination with the base A thereof, constructed to

rest on the lathe-shears, the flanged casting C, adapted to pass between the shears, and the means, substantially as described, for adjusting said base thereon transverse to the axis of the tail-stock spindle, as set forth.

3. In combination with the standard B, the guide-block D, vertically adjustable upon such standard, and carrying the spindle F and its bearings *a*, substantially as and for the purposes set forth.

4. In a tail-stock for lathes, and in combination with guide-block D and cross-head E, the spindle F, collar *b*, stop *c*, and adjusting-screw *d*, substantially as and for the purposes specified.

5. In a tail-stock for lathes, the combination of the base A, standard B, guide-block D, flanged casting C, cross-head E, spindle F, bracket G, toggle I, lever H, and yoke J, all constructed, arranged, and operating substantially in the manner and for the purposes set forth.

ALEXANDER DODDS.

Witnesses:
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WM. WISNER TAYLER.