

UNITED STATES PATENT OFFICE.

SALMON W. PUTNAM, OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN DEVICES FOR SECURING THE TAIL-STOCKS OF METAL-TURNING LATHES.

Specification forming part of Letters Patent No. **221,862**, dated November 18, 1879; application filed June 20, 1879.

To all whom it may concern:

Be it known that I, SALMON W. PUTNAM, of Fitchburg, State of Massachusetts, have invented a new and useful Improvement in Devices for Securing the Tail-Stocks of Metal-Turning Lathes; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a turning-lathe with my improvements attached. Fig. 2 is a vertical cross-section through line *x x* of Fig. 1. Fig. 3 is a longitudinal section.

My invention relates to that class of lathes designed for turning metal forms; and it consists in the combination of devices hereinafter described and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents the framework or bed-piece of a turning-lathe, and B the tail-stock of the same.

It is well understood among those skilled in the use of the lathe that the tail-stock requires repeated adjustment as to its longitudinal and central position.

The object of my invention is to render this adjustment convenient and rapid, and by means simple and durable, and at a minimum cost.

Below the tail-stock, and reaching across the projections *a a* on the lathe-bed, is a tie-piece, C, provided with an elongated slot, *c*, through which passes the draw-bolt D. Over and around the elongated slot is a corresponding groove to receive the head of the draw-bolt. This groove will allow the draw-bolt to slide along freely when the lathe-center is "set over," but will prevent any turning of the bolt-head.

The upper or cross-sliding part, E, of the tail-stock is made with a rigid projection, *e*, descending into the interior of the tail-stock, said projection being formed with a loop or cross-bar, through which is made a hole to allow the draw-bolt to pass freely. The upper side of this cross-bar supports the cam-plate F, which is also perforated so as to pass

freely over the draw-bolt. The cams on the said plate are made to interlock with those on the nut *f*, which nut may be operated either by a removable wrench or by a lever, B', as shown in the drawings, the said nut being tapped out to receive the upper end of the draw-bolt, which is screw-threaded a proper distance.

The operation of my invention will be clear to those skilled in the art to which it relates.

When the lever is thrown back the cams allow the draw-bolt and tie-piece to drop sufficiently to loosen the tail-stock from the lathe-bed. When the lever is again brought forward the cams act instantaneously in taking up the slack, and nearly the whole sweep of the lever or wrench is left for taking the gripe. This results from my peculiar combination of coarse abrupt cams with the finer threads or cams of the screw, the latter continuing to act on the gripe after the abrupt cams have taken up the slack and ceased action.

Should the parts at any time wear so as to limit the throw or gripe of the lever, compensation therefor is readily obtained by throwing back the lever, and, as the drop of the cams is in excess of the depth of the groove in the tie-piece, the tie-piece can be sufficiently disengaged by raising it to allow the draw-bolt to be turned in the nut *f* sufficiently to take up the wear.

The cams may be of any desirable form.

I am aware that the use of the tie and the draw-bolt with the common nut is old, and such I do not claim as my invention; but the combination with these of the cams, as described, secures what I claim to be a greatly improved result and one of much value.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with a tail-stock and tie-bolt of a metal-turning lathe, the perforated plate F, provided with cams and the lever B', and nut *f*, provided with interlocking cams on its lower surface, substantially as and for the purpose set forth.

SALMON W. PUTNAM.

Witnesses:

J. W. SMITH,
WM. COLT.