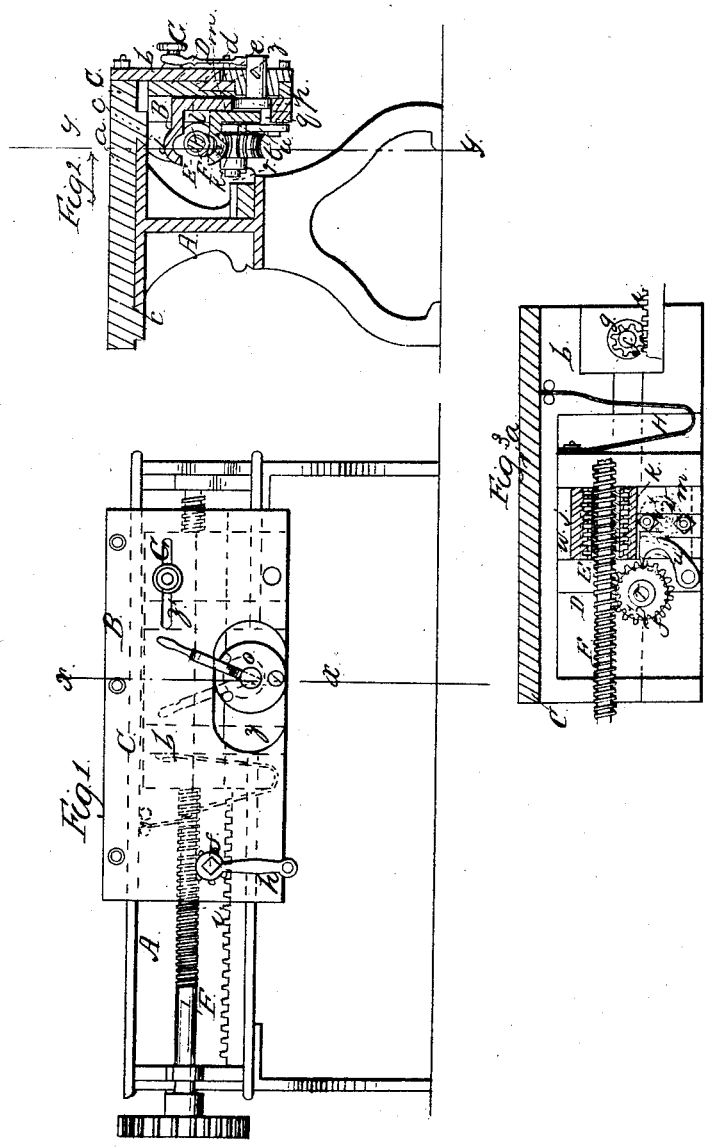
J. T. Bunce.

Turning Lathe.

No. 20,323. Patented May 25, 1858.



UNITED STATES PATENT OFFICE.

J. T. BUNCE, OF EAST HADDAM, CONNECTICUT.

LATHE.

Specification of Letters Patent No. 20,323, dated May 25, 1858.

To all whom it may concern:

Be it known that I, JARED T. BUNCE, of East Haddam, in the county of Middlesex and State of Connecticut, have invented a new and Improved Slide-Rest for Turning-Lathes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an external or face view of my improvement applied to the bed of a turning lathe. Fig. 2, is a transverse section of ditto, taken in the line *x*, *x*, Fig. 1. Fig. 3, is a longitudinal vertical section of ditto, taken in the line *y*, *y*, Fig. 2. and looking in the direction indicated by arrow.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in having the slide rest formed of two parts so connected that one part is allowed a movement independent of the other, and the whole so arranged as hereinafter described that the tool may be readily adjusted to its work, the rest readily thrown in and out of gear with the driving screw and the wear of the nut or any degree of play which it may have compensated for, so as to insure the perfect operation of the device.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents the bed of a lathe, and B, is my improved slide rest attached to it. The slide rest is formed of two parts C, D. The part C, is formed of a horizontal plate *a*, and a vertical plate *b*, permanently attached to each other. The plate *a*, rests on the upper surface of the bed A, said plate being provided with dove-tail grooves *c*, into which the sides of the top plate of the bed A, fit as shown clearly in Fig. 2, the plate *a*, being allowed to slide freely on the bed. The plate *b*, projects down in front of the bed A, and to its inner side the other part D, of the slide rest is attached, said part D, being a plate having a longitudinal dove-tail groove *d*, made in it to receive a corresponding projection *e*, on plate *b*, see Fig. 2. Through the plate *b*, of the part C, of the slide rest a shaft *f*, passes. This shaft has a pinion *g*, on its inner end and a crank *h*, on its outer end. The pinion *g*, gears into a rack *i*, formed longitudinally on the lower part of the bed A.

E, is a nut, which is formed of two parts *j*, *k*. These parts are attached to plates *l*, *m*, which are fitted in a vertical groove *n*, formed in the inner side of plate D. Through the plate D, a shaft *o*, passes, said shaft having an eccentric *p*, on its inner end, said eccentric having a pin *q*, attached to it. The eccentric *p*, fits in the plate *l*, and the pin *q*, fits in the plate *m*, and by turning the shaft *o*, the two parts of the nut may be drawn together or moved apart as desired.

F, is a screw shaft which is fitted longitudinally to the front side of the bed A, and which the nut E, when its two parts are closed, encompasses. See Fig. 3.

To the inner side of the plate D, a horizontal shaft *r*, is attached, and on this shaft a worm wheel *s*, and pointed toothed pinion *t*, is placed loosely. To the plate D, just below the pinion *t*, a pawl *u*, is attached, and a projection *v*, is attached to the plate *m*, said projection having an inclined or beveled surface *v'*, at the side adjoining the pawl *u*.

The plate *b*, of the part C, of the slide rest has an opening or slot *z*, made in it, see Fig. 1, to allow the shaft to move back and forth, as said shaft projects beyond the front side of plate *b*, and through a boss *a'*, attached to plate D.

G, is a screw which passes through a slot *z'*, in the plate *b*, and into the plate D. This screw has a collar *c'*, placed on it.

H, is a spring, one end of which is attached to the part C, and the other to the part D, as shown clearly in Fig. 3. The wheel *s*, gears into the screw F, as shown clearly in Fig. 3.

The tool stock is attached to the plate *a*, and when the shaft *o*, is so turned as to bring together the two parts *j*, *k*, of the nut and cause them to encompass the shaft F, the whole nut will be moved or fed along by the rotation of the screw F, the part C, being attached to the part D, by the screw G, and if the two parts of the nut are distended so that the slide rest will be free from the screw the rest may be quickly operated by turning the shaft *f*, but when the nut E, encompasses the screw F, the plate *a*, may be moved to a certain extent by relaxing the screw G, and consequently the tool may be readily adjusted to its work. When the two parts *j*, *k*, of the nut are thrown in gear with each other the pawl *u*, will be

thrown in gear with the pinion *t*, and will slightly actuate the pinion *t*, and as the pinion *t*, is attached to the worm wheel *s*, said wheel will press the screw firmly against the threads of the nut, or, in other words, the bearing surfaces of the internal thread of the nut and the screw will always be kept in contact and the objection attending the usual play produced by wear will be avoided. The worm wheel also causes the nut in closing to be presented properly to the screw, so that the two parts of the nut will not come in contact with the edges of the threads. This adjustment is important where flat threaded screws are used.

I do not claim the screw F, and a nut E, nor the pinion *g*, and rack *i*, for moving or feeding the slide rest, for these are well known devices and in common use for such purpose; but,

I claim as new and desire to secure by Letters Patent,

Constructing the slide rest of two parts C, D, arranged as shown, so that the part C, may have a movement independent of the other, in combination with the nut E, formed of two parts *j*, *k*, operated as shown, and used in connection with the worm wheel *s*, which is actuated simultaneously with the parts *j*, *k*, of the nut, substantially as described.

JARED T. BUNCE.

Witnesses:
JAS. S. RAY,
JULIUS ATTWOOD.