(No Model.)

J. JUDSON.

LATHE.

No. 346,164. Patented July 27, 1886.

Fig. 1.

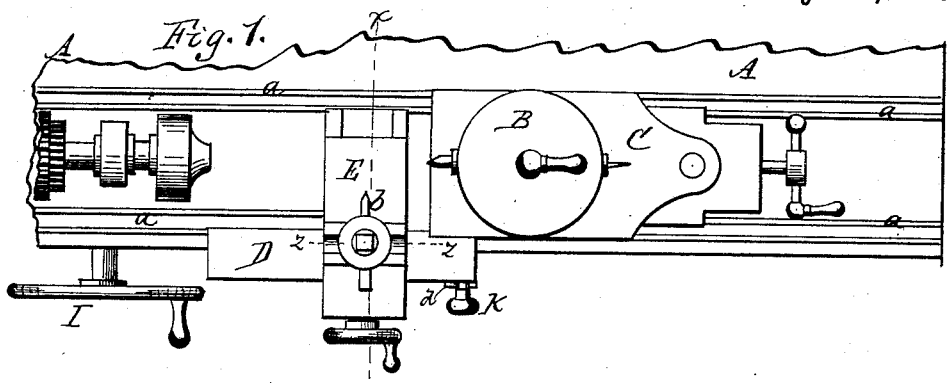


Fig. 2.

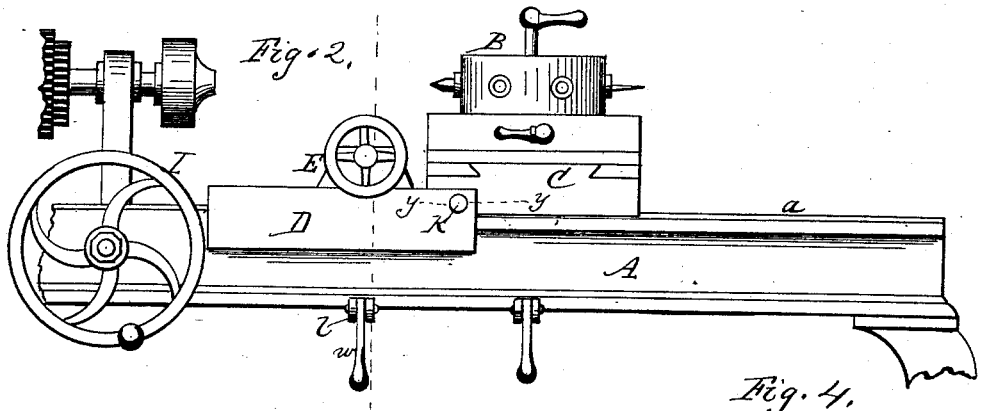


Fig. 3.

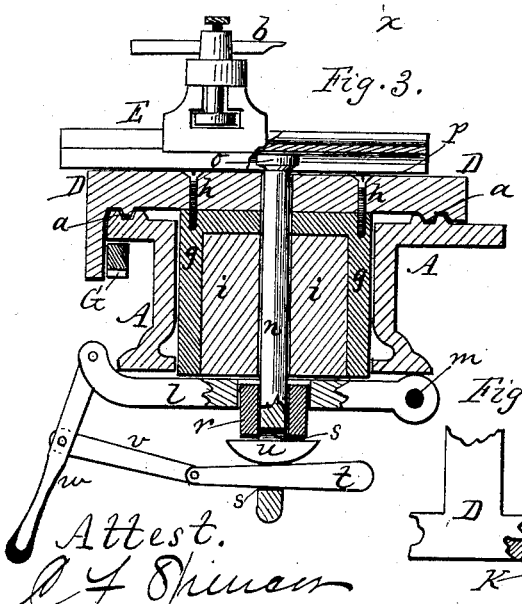


Fig. 4.

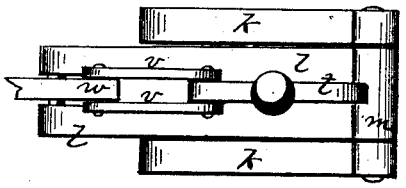


Fig. 7.

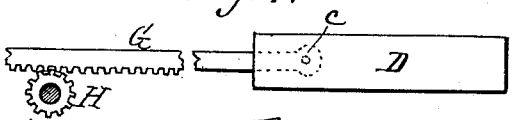


Fig. 5.

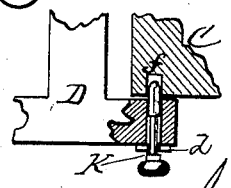
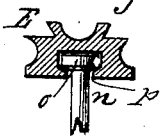


Fig. 6.



Attest.

C. F. Simon

A. S. Smith

Inventor.

James Judson,

by R. F. Osgood, atty.

UNITED STATES PATENT OFFICE.

JUNIUS JUDSON, OF ROCHESTER, NEW YORK.

LATHE.

SPECIFICATION forming part of Letters Patent No. 346,164, dated July 27, 1886.

Application filed December 23, 1885. Serial No. 186,502. (No model.)

To all whom it may concern:

Be it known that I, JUNIUS JUDSON, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Lathes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My improvement relates to that class of lathes in which a turret is used capable of adjustment forward and back, and a slide-rest for holding the turning-tool is also employed. Heretofore, so far as I am aware, these have been adjusted forward and back on the frame independently of each other, and the turret and its tail-block being very heavy, it is difficult to move it.

My invention consists, substantially, in combining with these parts an engaging and disengaging pin, whereby either can be moved separately or both together, as hereinafter described.

It further consists in the special construction of the slide-rest and its bed, as will be more fully explained.

In the drawings, Figure 1 is a plan view of a portion of a lathe, showing my improvements applied thereto. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged cross-section of the slide-rest and its attachments in line *x x* of Figs. 1 and 2. Fig. 4 is a bottom view of Fig. 3. Fig. 5 is a horizontal section in line *y y* of Fig. 2. Fig. 6 is a cross-section in line *z z* of Fig. 1. Fig. 7 is a diagram showing an elevation of the slide-rest and the rack and pinion for operating the same.

A indicates a portion of the bed and frame of a lathe, which is provided with longitudinal ribs *a a*, forming ways for the running of the parts in the usual way.

B is the turret, and C its tail-block, which slide forward and back on the ways *a a*, the same being of usual construction and well known in lathes of this class.

D is the slide, and E the rest, constituting the attachments for holding the turning-tool *b*, said slide also moving forward and back on the ways *a a*.

Heretofore, so far as I am aware, the turret and the slide-rest have been disconnected and moved forward and back separately.

The turret and its tail-block are heavy and difficult to move, sometimes requiring nearly the strength of a man to operate them. I connect the two parts together, and my improvement is as follows: G is a rack-bar, pivoted at *c*, Fig. 7, to the slide D, and extending longitudinally of the frame, H is a pinion engaging with the rack and operating the same to move the slide forward or back. The pinion is on the shaft of a hand-wheel, I, located outside, so as to be easily turned by hand. K is a sliding pin, which rests loosely in a socket of the slide D and has a head or thumb-pin, by which it can be drawn out or pushed in to the requisite degree. It is held from drawing fully out by a slotted plate, *d*, or by other suitable means. *f* is a corresponding socket in the side of the tail-block C, into which the pin passes when pushed in. When the pin is pushed in, as above described, the slide D and the turret tail-block C are connected, so that when the pinion is turned, giving motion to the rack, the two slides will move together. When the pin is drawn out, disconnecting the parts, each slide can be operated independently in the usual way. This is a very great convenience, especially in heavy lathes.

The slide D and its rest E are connected together as follows: *g* is a square clevis or strap secured on the under side of the slide by screws *h h* or other means, and resting in an opening in the bed of the lathe. *i* is a solid block that fills the space between the sides of the clevis. The bottom of the block projects a little distance below the bottom of the lathe-bed, as shown in Fig. 3, to allow the clamping action to take place, as will presently be described. *k k*, Fig. 4, are two side lugs to the block, and *l* is an intermediate free arm between the lugs, pivoted at the rear at *m*, so as to turn up and down. *n* is a clamping-pin passing loosely up through the block, the clevis, and the slide, and provided at its top with an enlarged head, *o*, that rests in a dovetailed groove, *p*, of the rest E. By loosening the pin the rest can be adjusted forward or back on the slide, and by tightening it again the rest can be securely held at any adjustment. *r* is a block fitted in a slot in the arm *l*, through which the pin passes. *s* is a slot formed in the pin. Through this slot passes a wedge-shaped sliding key, *t*, and between it

and the block *r* is fitted a gib or bearing-block, *u*. *v v* are links connecting the end of key *t* with a handle, *w*, which is pivoted at the upper end to the arm *l*. By drawing the handle *w* outward it will be seen that the key *t* will be drawn along in the slot *s*, thereby drawing the pin *n* downward, and causing its head to bind in the groove of the rest E and clamp it in position. This action causes the arm *l* to bind up against the bottom of block *i*, thus securing the parts together, but without binding on the bed of the lathe, which stands a little higher, as before described. Therefore the slide and its rest can be moved along freely on the bed of the lathe.

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

1. In a lathe, the combination, with the slide D and tail-block C, of a rack, G, pivoted to the slide and operated by a pinion, H, and a pin, K, passing through the slide and engaging with the tail-block, whereby the slide and tail-block can be engaged together to be operated by the rack and pinion, or disengaged to move separately, as set forth.

2. In a lathe, the combination, with the slide D and its rest E, of the pin *n*, engaging with the rest, the block *i*, the hinged arm *l*, the block *r*, gib *n*, and wedge-shaped key *t*, operated by links *v* and handle *w*, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JUNIUS JUDSON.

Witnesses:
R. F. OSGOOD,
P. A. COSTICH.