A. C. BOOTH.

VERTICALLY ADJUSTABLE ENGINE LATHE.

APPLICATION FILED MAY 13, 1918.

1,327,604. Patented Jan. 6, 1920.

Fig. 1.

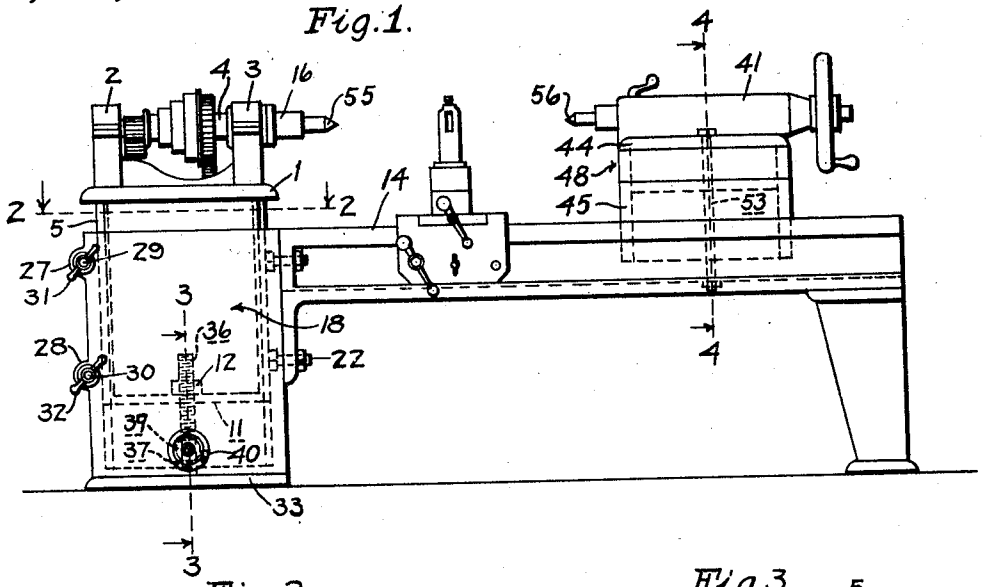


Fig. 2.

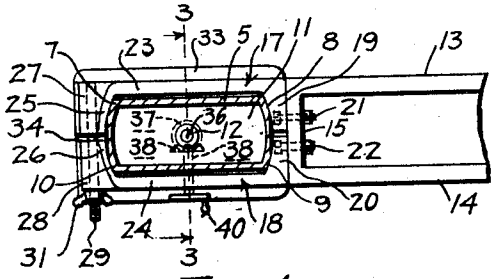


Fig. 3.

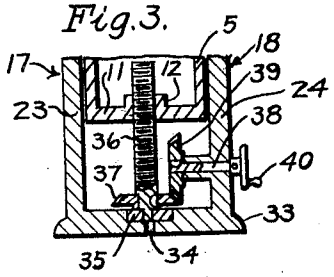


Fig. 4.

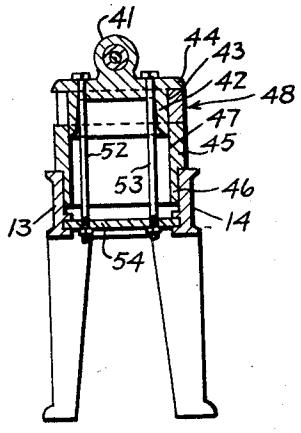
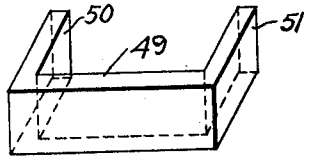


Fig. 5.



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VERTICALLY-ADJUSTABLE ENGINE-LATHE.

1,327,604. Specification of Letters Patent. **Patented Jan. 6, 1920.**

Application filed May 13, 1918. Serial No. 234,281.

To all whom it may concern:

Be it known that I, AUGUSTUS C. BOOTH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Vertically-Adjustable Engine-Lathes, of which the following is a specification.

My object is to make a vertically adjustable engine lathe, and my invention consists in the novel features herein shown, described and claimed.

Figure 1 is a side elevation of an engine lathe embodying the principles of my invention.

Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

Fig. 3 is a vertical cross section on the lines 3—3 of Figs. 1 and 2.

Fig. 4 is a vertical cross section on the line 4—4 of Fig. 1.

Fig. 5 is a perspective of the removable and insertible tail stock block.

The spindle head 1 has bearings 2 and 3 extending upwardly and the spindle 4 is mounted in the bearings 2 and 3. The sliding base 5 extends downwardly from the head 1, said base being straight up and down, rectangular in horizontal cross section and hollow. The end faces 7, 8, 9 and 10 of the base 5 are finished and curved. A rigid bottom 11 is formed at the bottom of the base 5 and has a central vertical screw threaded bearing 12.

The side bars 13 and 14 of the lathe bed are rigidly connected by cross bar 15 at a point substantially in line with the chuck nipple 16. Channel shaped clamping bars 17 and 18 are substantially mates and comprise the portions 19 and 20 secured to the cross bar by bolts 21 and 22, the inner faces of the portions 19 and 20 fitting the curved ends 8 and 9 of the base 5, the portions 23 and 24 extending loosely along the sides of the base 5, the portions 25 and 26 fitting the curved ends 7 and 10 of the sliding base 5, and the pairs of ears 27 and 28 extending from portions 23 and 24. The clamping bolts 29 and 30 are inserted through the pairs of ears 27 and 28 and wing nuts 31 and 32 are placed upon the ends of the bolts so that by manipulating the wing nuts 31 and 32, the sliding base 5 is released to be raised or lowered and so that by tightening the nuts 31 and 32, the portions 19, 20 and 25 and 29 will grip the beveled ends 7, 8, 9 and 10 of the sliding base 5 and hold it rigidly in its adjusted position. The clamping bars 17 and 18 extend to the rigid base 33 and the rigid base 33 rests upon the floor. The rigid base 33 is longitudinally slotted to form the clearance 34 so that the jaws 17 and 18 may spring to and from each other. A thrust bearing plate 35 is recessed into the rigid base 33 from its upper face and expands the clearance 34. An adjusting screw 36 has a reduced end to fit the bearing in the plate 35 and the screw extends upwardly through the screw threaded bearing 12 in the bottom of the sliding base 5. A beveled gear 37 is fixed upon the lower end of the screw 36. A crank shaft 38 is mounted through the clamping bar 18 and carries a beveled gear 39 upon its inner end in mesh with the beveled gear 37 and a hand crank 40 upon its outer end so that when the nuts 31 and 32 are loosened, the hand crank 40 may be operated to operate the screw 36 and raise or lower the sliding base 5, and then when the spindle 4, carried by the sliding base has been properly located, the nuts 31 and 32 are tightened.

The tail stock 41 has a rectangular base 42 provided with straight side and end faces 43 and a flange 44 overhanging the face 43. A rectangular hollow block 45 fits upon the side bars 13 and 14 and has a flange 46 extending between the side bars, and the inner face 47 of the block is finished to receive the rectangular base 42, so that the flange 44 will rest upon the upper edge of the block 45 when the tail stock 41 is lowered. An insertible block 48 has a central portion 49 and end portions 50 and 51, the inner faces of the central portion 49 being finished to fit the face 43 and to fit between the flange 44 and the upper edge of the block 45, and the end portions 50 and 51 fit the ends of the rectangular base 42 so as to hold the tail stock 41 elevated.

Bolts 52 and 53 are inserted downwardly through the tail stock and through a clamping bar 54 to clamp the tail stock to the side bars 13 and 14. The clamping bar 54 and the block 45 are adapted to slide along the side bars 13 and 14 when the bolts 52

and 53 are loosened, and when the block 48 is removed, a pair of shorter bolts may be inserted or the threads may be run up on the long bolts.

In this way, I make a single engine lathe construction which will serve for two distinct sizes of lathes. When the tail stock 41 is blocked up, then the spindle 4 is adjusted to bring the center points 55 and 56 into line, and when the block is removed from the tail stock, the base 1 is locked to rest upon the upper face of the clamping bars 17 and 18. Of course, by making two or more sizes of the filling blocks 48, other adjustments may be made, but usually the two adjustments shown and described are sufficient.

Of course, the lathe may be made in any size, and provision may be made for as many adjustments as are desired.

The clamping bars 17 and 18 form a vertical slide-way and the spindle head base 5 fits in this vertical slide-way. The screw 36 raises and lowers the base in the slide-way and the bolts 29 and 30 hold the base in its adjusted position in the slide-way.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

A lathe bed comprising side bars rigidly connected at one end by a crossbar; means forming a vertical slideway comprising channel-shaped clamping bars having portions secured to the crossbar by bolts, the inner faces of the portions being curved, second portions extending from the outer parts of the first portions, third portions extending inwardly from the outer ends of the second portions and having curved inner faces, ears extending from the third portions, and clamping bolts inserted through the ears; and a sliding base fitting in the vertical slideway and having curved end faces fitting the curved inner faces of the first and third portions, so that the base may be moved up or down to a desired position and rigidly held in its adjusted position by tightening the clamping bolts.

In testimony whereof I have signed my name to this specification.

AUGUSTUS C. BOOTH.