C. C. CRALEY.

LATHE ATTACHMENT.

APPLICATION FILED JUNE 7, 1920.

1,405,670.

Patented Feb. 7, 1922.

3 SHEETS—SHEET 1.

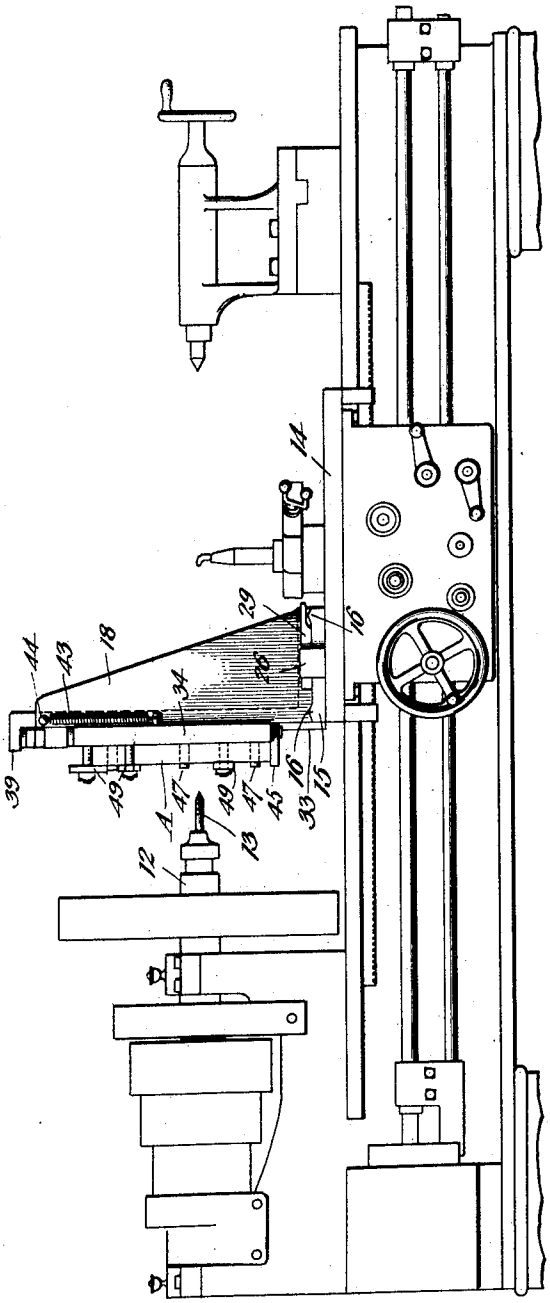


Fig. 1.

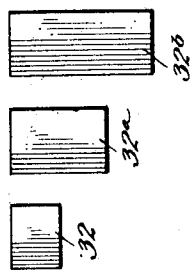


Fig. 11.

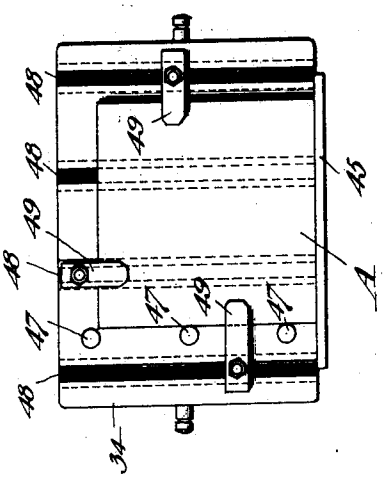


Fig. 7.

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3 SHEETS—SHEET 2.

Fig. 10.

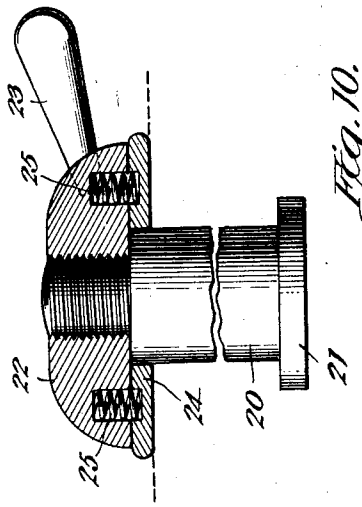


Fig. 4.

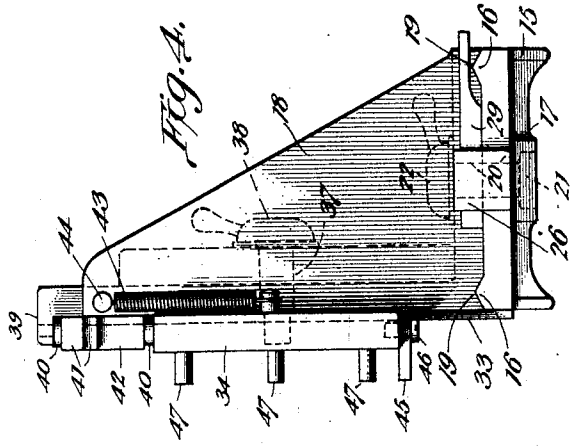


Fig. 2.

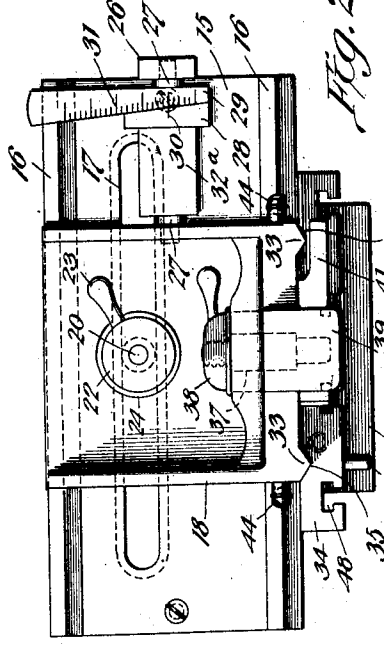
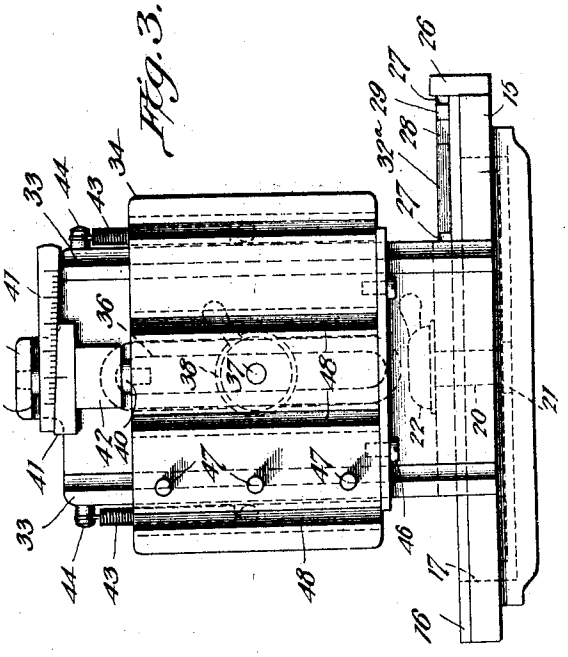


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 9.

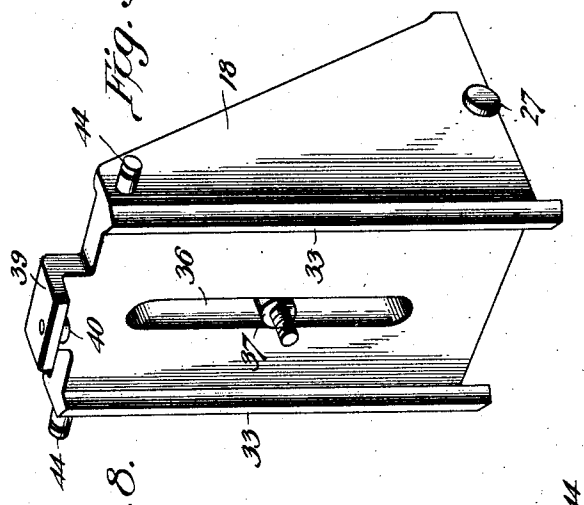


Fig. 8.

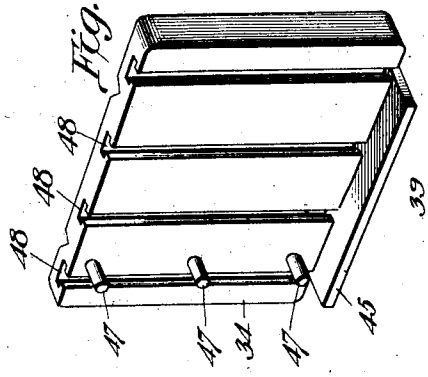


Fig. 6.

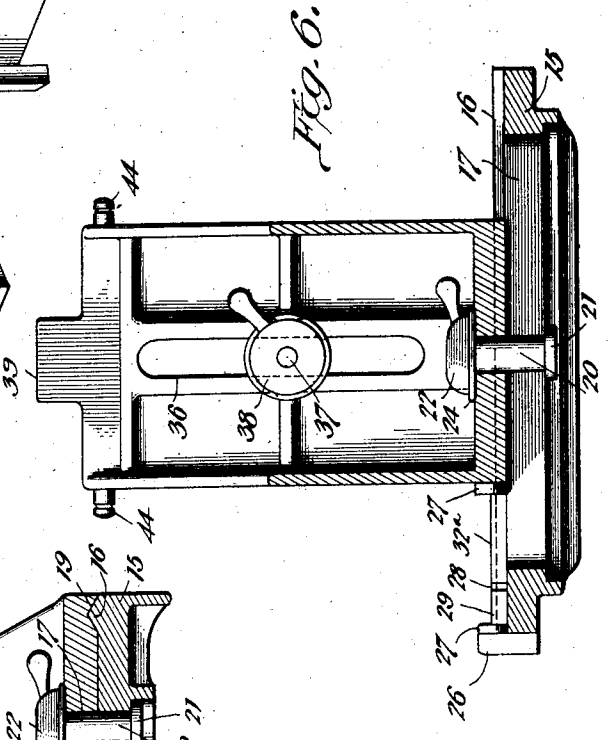
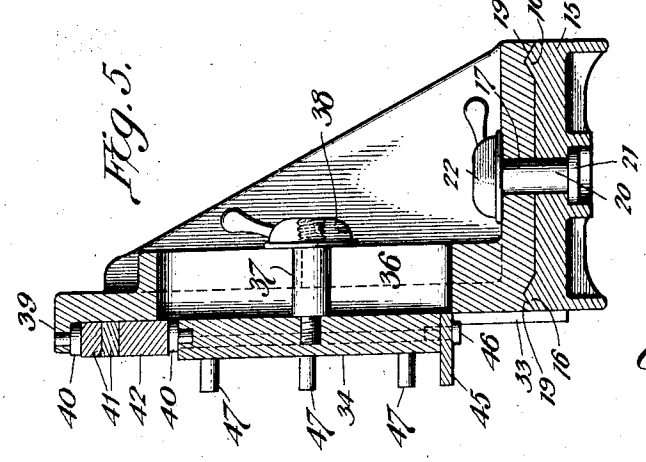


Fig. 5.



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UNITED STATES PATENT OFFICE.

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LATHE ATTACHMENT.

1,405,670. Specification of Letters Patent. Patented Feb. 7, 1922.

Application filed June 7, 1920. Serial No. 387,145.

To all whom it may concern:

Be it known that I, CLARENCE C. CRALEY, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Lathe Attachments, of which the following is a specification.

The present invention relates to apparatus, preferably in the form of an attachment for lathes, whereby jigs, dies, master-plates, templets and the like can be easily positioned with the greatest accuracy for the purpose of boring holes and the like.

In the accompanying drawings:

Figure 1 is a side elevation of a well known type of lathe, with the apparatus in place thereon,

Figure 2 is a plan view of the apparatus per se,

Figure 3 is a front elevation of the same,

Figure 4 is a side elevation,

Figure 5 is a vertical sectional view,

Figure 6 is a vertical sectional view at right angles to Figure 5,

Figure 7 is a front elevation of the work holder with a piece of work in place thereon,

Figure 8 is a perspective view of the work holder,

Figure 9 is a perspective view of the support,

Figure 10 is a detail view on an enlarged scale of the clamp between the base and support,

Figure 11 is a view in elevation showing a set of spacing blocks.

The lathe illustrated in Figure 1 is of well known type, and includes a rotary spindle 12 in which may be placed a drill or boring tool 13 of any desired character. The lathe carries a carriage 14 that is movable toward and from the spindle in a manner well understood by those skilled in the art.

The invention, as disclosed, includes a base 15 adapted to be mounted on and secured to the carriage 14 of the lathe as illustrated in Figure 1. This base is provided with a transverse horizontal guideway in the form of two upstanding parallel ribs 16 constituting tracks. The base is provided between the said ribs or tracks with a longitudinal slot 17. Slidably mounted on the guideway, is a support in the form of a bracket 18 having grooves in its lower side, as shown at 19 to receive the said ribs or tracks 16, and having a clamp, by means of which the said support can be secured against movement on the base and in different positions. This clamp consists of a bolt 20 that passes through the slot 17 and has a head 21 at its lower end that is adapted to bear against the under side of the base. Threaded on the upper end of the said bolt, is a clamping nut 22 preferably provided with an actuating handle 23. Interposed between this nut and the adjacent portion of the support is a binding washer 24, and coiled springs 25, seated in sockets in the nut, bear against the said washer 24. The washer produces a friction clamp when the nut is loosened, so as to hold the support against too free movement on the base.

The base at one end is provided with an upstanding lug 26, and the lug and adjacent side of the support are provided with opposing bearing elements 27. Gage mechanism is adapted to be interposed between said bearing elements 27 as shown more particularly in Figure 2. Oppositely disposed relatively sliding wedges 28 and 29 are employed, the wedge 28 having an indicating mark 30 thereon and the wedge 29 having a suitable scale 31 that cooperates with the indicator 30. These wedges are adapted to abut against one of the bearing elements 27, and interposed between the wedge 28 and the other bearing element can be placed interchangeable spacing blocks, as 32, 32^a and 32^b, illustrated in Figure 11, depending upon the distance apart the bearing elements 27 happen to be by reason of the position of the work being operated on. In other words, the blocks 32, 32^a, 32^b, etc., are of predetermined length.

The support 18 is provided with an upright guideway having vertical ribs or tracks 33. A work holder 34 is vertically slidable on these tracks, being provided in its rear side with grooves 35 to receive the same. Between the tracks the vertical portion of the support is provided with a vertical slot 36, through which passes a stud 37 carried by the work holder, and having a clamping nut 38 threaded on its rear end, and adapted to act against the rear side of the support to fix the work holder in different vertical positions. The upper end of the support is provided with a projection 39 that overhangs the work holder, and said projection and the upper end of the work holder are provided with hardened bearing elements 40. Be-

tween these elements is placed an adjustable gage comprising coacting scaled wedges 41 and interchangeable spacing blocks, one of which is illustrated at 42. In order to normally support the work holder coiled springs 43 are connected at their lower ends to opposite portions of the same, and have their upper ends engaged with lugs 44 on the support. These springs serve to maintain the work holder against the gage as will be evident. The work holder is provided at its lower end with an outstanding work supporting ledge 45, which may be in the form of a plate secured, as shown at 46 to the lower edge of the work holder, and said work holder is also provided with positioning or stop pins 47 preferably arranged in a vertical row. The outer side of the work holder is furthermore preferably provided with undercut grooves 48 adapted to receive the usual work clamps, shown at 49 in Figure 7.

It will be evident that if a piece of work as A in Figure 7 is mounted on the work holder and is properly positioned thereon by the supporting ledge 45 and the stop pins 47, this work can be readily shifted both horizontally and vertically and its position with respect to a tool placed in the chuck spindle accurately determined.

Therefore any desired arrangement of holes can be predetermined and bored with the utmost accuracy and with ease and expedition.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In apparatus of the character set forth, the combination with an upright support, of an upright work holder vertically movble thereon and having an upright front face, means for securing work to said face, means for securing the work holder in different positions on the support, yielding means for supoprting the work holder, and means for adjustably mounting the support on a lathe in position to operate on the work secured to said work holder.

2. In apparatus of the character set forth, the combination with a base having means for attachment to the carriage of a lathe, of a support mounted on the base and having an upright slideway, a vertically movable work holder mounted on the slideway, and having an outer upright face provided with work positioning means, and a clamp for securing the work holder against movement in different positions on the support.

3. In apparatus of the character set forth, the combination with a base having means for attachment to the carriage of a lathe, of a support mounted on the base and having an upright slideway, a vertically movable work holder mounted on the slideway and having an outer upright face provided with a lower work supporting ledge and a side-stop, and a clamp for securing the work holder against movement in different positions on the support.

4. In apparatus of the character set forth, the combination with a base having means for attachment to the carriage of a lathe, of a support mounted on the base and having an upright slideway, a vertically movable work holder mounted on the slideway and having an outer upright face provided with work positioning means, springs engaged with the support and work holder for assisting in the support of the latter, and a clamp for securing the work holder against movement in different positions on the support.

5. In apparatus of the character set forth, the combination with a base having means for attachment to the carriage of a lathe, of a support mounted on the base and having an upright slideway, a vertically movable work holder mounted on the slideway and having an outer upright face provided with work positioning means, coiled supporting springs connected to opposite portions of the work holder and the support, a work supporting ledge on the lower portion of the work holder, stop projections on the work holder, work clamping means engaging the work holder, and a clamp for securing the work holder against movement and in different positions on the support.

6. In apparatus of the character set forth, the combination with a base and a support thereon having an upright guideway, a work holder slidable on the guideway, a clamp for securing the work holder against movement on the support, bearing elements on the support and work holder, and adjusting means interposed between the bearing elements and including a sliding wedge.

7. In apparatus of the character set forth, the combination with a base and a support thereon having an upright guideway, a work holder slidable on the guideway, a clamp for securing the work holder against movement on the support, bearing elements on the support and work holder, and adjusting means interposed between the bearing elements and including a transverse movable wedge and a detachable device that may be interposed between the wedge and one of the bearing elements.

8. In apparatus of the character set forth, the combination with a base and a support

thereon having an upright guideway, a work holder slidable on the guideway, a clamp for securing the work holder against movement on the support, bearing elements on the support and work holder, a spring for yieldingly supporting the work holder on the support, and adjusting means acting against the spring and interposed between the bearing elements.

9. In apparatus of the character set forth, the combination with a base and a support thereon having an upright guideway, a work holder slidable on the guideway, a clamp for securing the work holder against movement on the support, bearing elements on the support and work holder, coiled springs at opposite sides of the work holder for yieldingly supporting the same, a spacing block adapted to be interposed between the bearing elements, and a gage adapted to operate between the block and one of the bearing elements.

10. In apparatus of the character set forth, the combination with a base, having a guideway thereon, of a support slidable on the guideway, means for clamping the support against its sliding movement, opposed bearing elements carried respectively by the base and support, a spacing block adapted to be interposed between the spacing elements, and adjustable gage adapted to be placed between the block and one of the bearing elements, and a work carrier mounted on the support.

11. In apparatus of the character set forth, the combination with a base having a guideway thereon, of a support slidable on the guideway, means for clamping the support against its sliding movement, opposed bearing elements carried respectively by the base and support, a spacing block adapted to be interposed between the spacing elements, a transversely movable gage wedge adapted to be placed between the block and one of the bearing elements, and a work carrier mounted on the support.

12. In apparatus of the character set forth, the combination with a base having a guideway thereon, of a support slidable on the guideway, means for clamping the support against its sliding movement, opposed bearing elements carried respectively by the base and support, gauge means interposed between the bearing elements, said support including an upright guideway, a work holder vertically slidable on the upright guideway, means for clamping the work holder against movement, springs supporting the work holder, said holder and support having opposed bearing elements, adjustable gauge means between the latter bearing elements, and means for securing work to the outer face of the work holder.

13. In apparatus of the character set forth, the combination with a supporting member, of a work holder movably mounted on the supporting member, a wedge element operating against the supporting member and work holder for moving the latter on the former, means for indicating the amount of such movement, and means for clamping the work holder against movement and in different positions on the supporting member.

14. In apparatus of the character set forth, the combination with a supporting member, of a work holder movably mounted on the supporting member, scaled oppositely inclined wedge elements bearing against each other and against the supporting member and work holder respectively for moving the latter on the former, means for indicating the amount of such movement, and means for clamping the work holder against movement and in different positions on the supporting member.

15. In apparatus of the character set forth, the combination with a mounting, of means for securing the same on a lathe, a work holder adjustably supported on the mounting, means for effecting the adjustment of the work holder with respect to the mounting, including a movable wedge element, means for indicating the amount of such movement, and means for securing the work holder against movement and in different positions on the mounting.

16. In apparatus of the character set forth, the combination with a mounting, of means for securing the same on a lathe, a work holder adjustably supported on the mounting, means for effecting the adjustment of the work holder with respect to the mounting including a movable wedge element, means for indicating the amount of such movement, including indicating means on the wedge element, and means for securing the work holder against movement and in different positions on the mounting.

In testimony whereof, I affix my signature in the presence of two witnesses.

CLARENCE C. CRALEY.

Witnesses:
ELMER ZIMMERMAN,
RALPH HOMAN.