No. 830,635. PATENTED SEPT. 11, 1906.

L. R. BARKER.

LATHE TOOL HOLDER AND STEADY REST.

APPLICATION FILED JAN. 23, 1905.

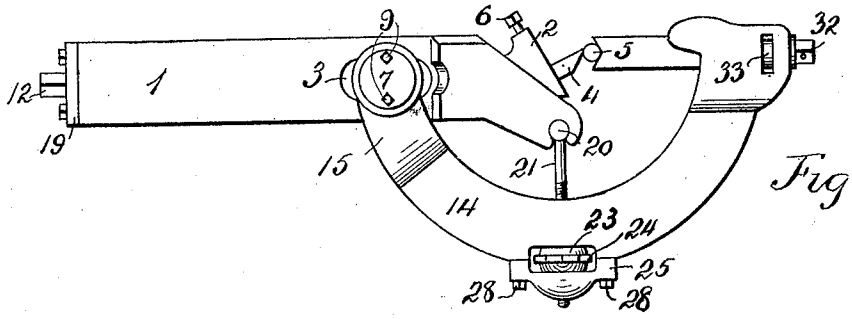


Fig 1

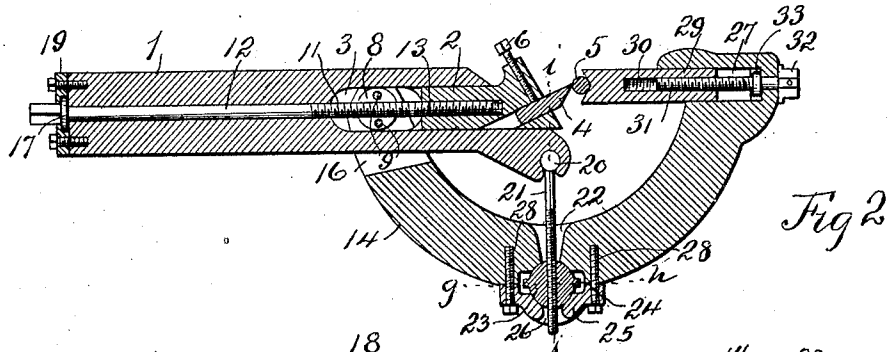


Fig 2

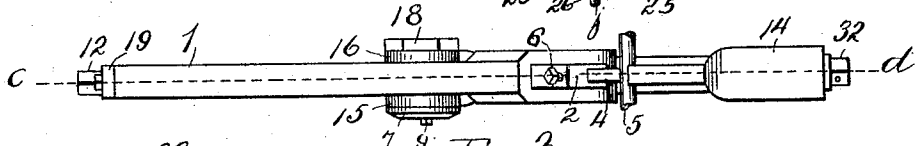


Fig 3

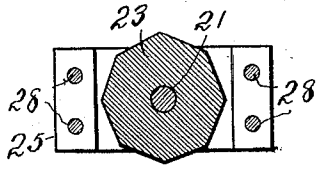


Fig 4

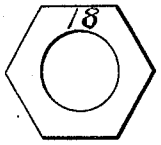


Fig 5

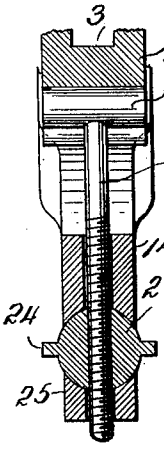


Fig 6

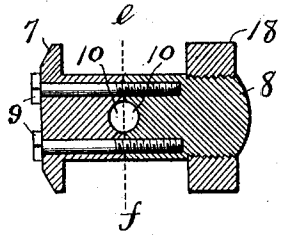


Fig 7

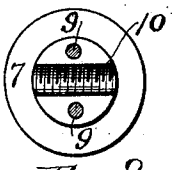


Fig 8

WITNESSES:

R. E. Hamilton.

M. C. Long

INVENTOR,

Lewis R. Barker,

By Warren D. House,

His Attorney.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEWIS R. BARKER, OF PARKVILLE, MISSOURI.

LATHE-TOOL HOLDER AND STEADY-REST.

No. 830,635. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed January 23, 1905. Serial No. 242,416.

To all whom it may concern:

Be it known that I, LEWIS R. BARKER, a citizen of the United States, residing in Parkville, in the county of Platte and State of Missouri, have invented a new and useful Improvement in Lathe-Tool Holders and Steady-Rests, of which the following is a specification, reference being had therein to the accompanying drawings, forming a part thereof.

My invention relates to improvements in lathe-tool holders and steady-rests.

The object of my invention is to provide a mechanism adapted to be used with an ordinary engine-lathe by means of which the work may be firmly held against the cutting-tool, means being provided by which as the tool cuts the work away a work-supporting device may be simultaneously fed toward the work, so as to firmly support the same.

My invention provides further means by which the steady-rest may be readily adjusted to work of different diameters.

Other novel features are hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the tool-holder and steady-rest. Fig. 2 is a longitudinal sectional view taken on the dotted line *c d* of Fig. 3. Fig. 3 is a top view. Fig. 4 is a horizontal sectional view taken on the dotted line *g h* of Fig. 2. Fig. 5 is an elevation view of the nut 18. Fig. 6 is a vertical sectional view taken on the dotted line *i j* of Fig. 2. Fig. 7 is a vertical longitudinal sectional view of the parts employed to pivot the pivoted member 14 to the main support. Fig. 8 is a section taken on the dotted line *e f* of Fig. 7.

Similar characters of reference denote similar parts.

1 denotes a support adapted to be mounted horizontally in the tool-post of an ordinary engine-lathe.

2 denotes a tool-holder slidably mounted in the end of a slot 3 provided in the support 1.

4 denotes the lathe cutting-tool, and 5 the work, such as a small rod held in the lathe-chuck. (Not shown.)

6 denotes a clamping-screw mounted in the tool-holder 2 and adapted to bear upon the lathe-tool 4.

Slidably mounted in the slot 3 is a transverse nut comprising two cylindrical members 7 and 8, rigidly held together by means of two screws 9 and provided at their abutting ends with two oppositely-disposed semicircular recesses 10, which are internally screw-threaded and adapted to fit a screw-threaded portion 11 on a rod 12, disposed longitudinally and rotatively mounted in a hole extending through the support 1. The forward end of the rod 12 is provided with a portion 13, threaded oppositely to the portion 11 and fitted to a screw-threaded hole in the rear end of the tool-holder 2. A curved member 14, concave upon its upper side, is provided at its rear end with two upwardly-extending arms 15 and 16, provided with transverse holes, in which are rotatively mounted, respectively, the members 7 and 8. A nut 18 is mounted upon the screw-threaded outer end of the member 8. The outer end of the rod 12 is provided with a flange 17, which bears against the rear end of the support 1. A plate 19, having a central hole through which extends the rod 12, bears against the outer side of the flange 17 and prevents rearward movement of the rod 12, the said plate being secured in any desirable manner to the support 1. The lower side of the forward end of the support 1 is provided with a transverse circular recess, in which is pivotally mounted the horizontal cylindrical head 20 of a vertical screw 21, which extends through a vertical hole 22, provided in the middle of the member 14. The screw-threaded lower end of the screw 21 has mounted rotatively thereupon a nut 23, preferably of a generally spherical form and provided with a horizontal peripheral central flange 24, preferably polygonal in form. The upper side of the nut 23 is seated in a curved recess provided in the lower side of the member 14. A plate 25, provided with a central vertical hole 26, through which extends the screw 21, is secured, by means of screws 28, to the lower side of the member 14. The upper side of the plate 25 is provided with a curved recess fitted to the lower side of the nut 23. The forward end of the member 14 is provided with a horizontal recess 27 on its inner side, in which is slidably mounted a work-supporting member 29, the forward end of which is preferably provided with a groove of V-shaped form adapted to embrace the work 5 upon the side opposite that engaged by the lathe-tool 4. The opposite side of the work-supporting device 29 is provided with a screw-threaded hole 30, in which is fitted one end of a screw 31, the other end of which extends through the member 14 and has supported thereon upon the outside of said member 14 a collar 32, which prevents

movement toward the work of screw 31. Movement lengthwise of the screw 31 in the opposite direction is prevented by means of a flange 33, provided on the screw 31 and disposed in the recess 27.

In operating my invention the support 1 is rigidly mounted in the tool-post of the lathe and the lathe-tool 4 inserted in the tool-holder 2. The member 14 is then swung by rotating the nut 23 so as to bring the work-supporting device in the horizontal plane of the work 5. The screw 31 is then rotated in a direction such that the work-supporting device 29 will bear against the work 5. If now the work 5 be caused to rotate by running the lathe in the ordinary manner and the rod 12 be rotated in the proper direction, the tool-holder 2 will be forced forward so that the lathe-tool 4 will perform its work upon the material 5. At the same time the member 14 will be moved in a direction opposite to the direction in which the tool-holder moves. The threaded portions 11 and 13 of the rod 12, having threads with the the same number to the inch, will when the rod 12 is rotated cause the tool-holder 2 and the member 14 to move simultaneously in opposite directions at the same rate of speed, thus always retaining the work-supporting device 29 in contact with the work 5, which is thus held firmly against and prevented from being sprung away from the tool 4.

My invention is adapted particularly for use in turning tubes or rods of small diameter.

Various modifications of my invention may be resorted to without departing from its spirit.

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

1. The combination with the support provided with means for holding the lathe-tool and adapted to be secured in the tool-post of a lathe, of a member pivoted thereto, a rod pivoted to and connecting the support with the tool-holding member, means connected with the said rod by which the pivoted member may be swung upon its pivotal support, means connected with the pivoted member for supporting the work against the pressure of the lathe-tool, and means for simultaneously moving the tool-holder and pivoted member in opposite directions.

2. The combination with the support provided with means for holding the lathe-tool and adapted to be secured in the tool-post of a lathe, of a member pivoted thereto, a rod pivoted at one end to the support and provided at its other end with a screw-threaded portion, a nut rotatable upon said screw-threaded portion of the said rod, means by which when the said nut is rotated upon the rod the pivoted member is swung upon its support, means connected with the pivoted member for supporting the work against the pressure of the lathe-tool, and means for simultaneously moving the tool-holder and pivoted member in opposite directions.

3. The combination with a support adapted to be secured in the tool-post of a lathe, of a tool-holder movable thereon, a member pivoted to and slidable upon said support relative to the tool-holder, a work-supporting device carried by the pivoted member, adjusting means for swinging said pivoted member relative to the tool-holder, and means for simultaneously moving the pivoted member and tool-holder in opposite directions.

4. The combination with a support adapted to be secured in the tool-post of a lathe, of a tool-holder slidably mounted thereon, a member pivoted to said support and slidable thereon, a work-supporting device carried by the pivoted member, adjusting means for swinging the said pivoted member relative to the tool-holder, and means for simultaneously sliding the pivoted member and tool-holder in opposite directions.

5. The combination with a support adapted to be secured in the tool-post of a lathe, of a member slidably mounted upon and pivoted to said support, a tool-holder slidably mounted upon said support, a work-supporting device carried by said pivoted member, an adjusting-screw having a universal joint connecting it with the pivoted member and having a pivotal joint connecting it with said support, and means for simultaneously sliding the tool-holder and pivoted member in opposite directions.

6. The combination with a support adapted to be secured in the tool-post of a lathe, of a tool-holder slidably mounted thereon, a member pivoted to and slidable upon said support, a work-supporting device carried by said member, a rod pivotally connected to the said support and having a screw-threaded portion, a nut mounted on said screw-threaded portion and having a universal joint supporting said pivoted member, and means for simultaneously moving the pivoted member and tool-holder in opposite directions.

7. The combination with a support adapted to be secured in the tool-post of a lathe, of a tool-holder slidably mounted thereon, a member pivoted to and slidable upon said support, a work-supporting device carried by said member, a screw pivoted to said support, a nut mounted on the screw and having a universal joint supporting said pivoted member, and means for simultaneously sliding the tool-holder and said member in opposite directions.

8. The combination with a support adapted to be secured in the tool-post of a lathe, of a tool-holder slidably mounted thereon, a member pivoted to and slidable on the sup-

port, a work-supporting device carried by said pivotal member, means for adjusting said work-supporting device toward and from the tool-holder upon said member, a screw pivotally connected to said support, a nut mounted on said screw and supporting the pivoted member so as to permit swinging thereof, and means for simultaneously sliding the tool-holder and said member in opposite directions.

9. The combination with a support provided with a longitudinal slot and adapted to be secured in the tool-post of a lathe, of a tool-holder slidable in said slot, a nut slidable in said slot, a member pivoted to said nut, a work-supporting device carried by said member, adjusting means for swinging said member and which permits sliding of the tool-holder and nut, and a rod rotatively mounted in said support and having oppositely-threaded portions engaging respectively said nut and said tool-holder.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

LEWIS R. BARKER.

Witnesses:

WALTER H. CLARK,

S. F. WILSON.