No. 751,054. PATENTED FEB. 2, 1904.

J. CARR.

LATHE TOOL HOLDER.

APPLICATION FILED FEB. 9, 1903.

NO MODEL.

Fig. 1.

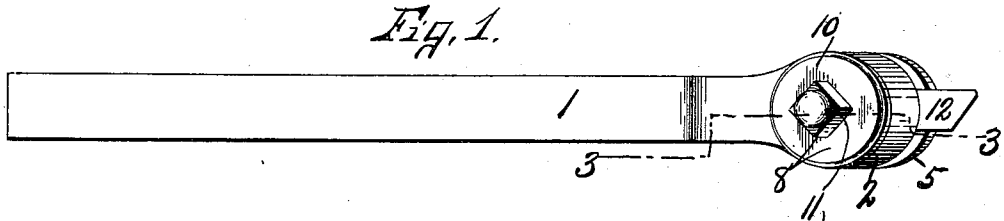


Fig. 2.

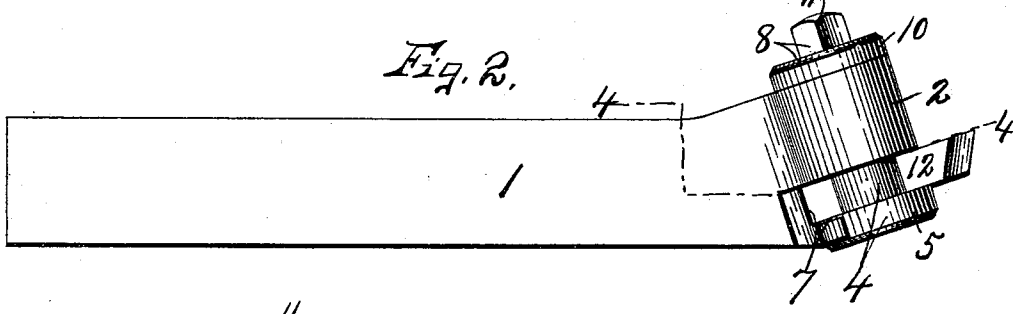


Fig. 3.

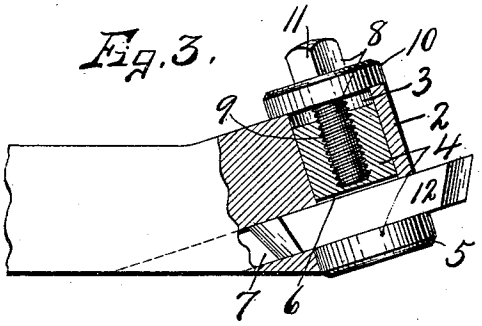


Fig. 4.

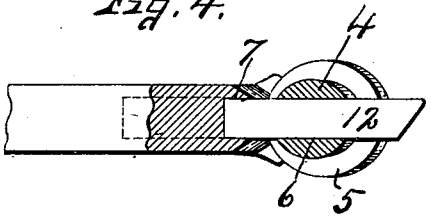


Fig. 5.

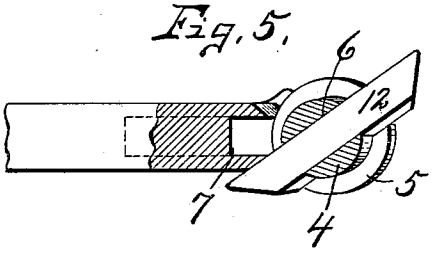


Fig. 6.

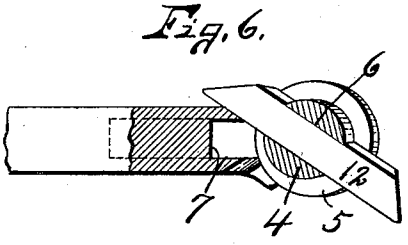


Fig. 7.

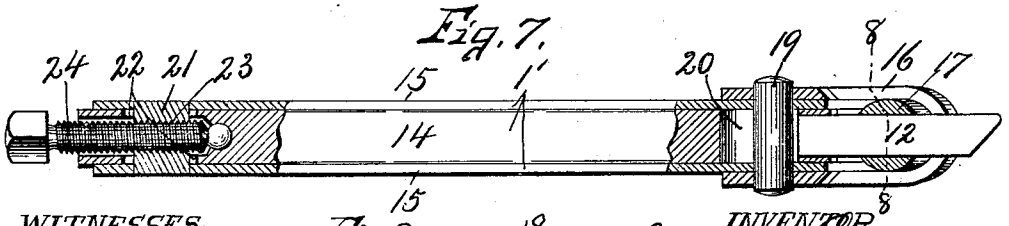
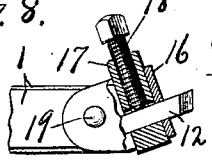


Fig. 8.



WITNESSES:

W. T. Brewer.

H. E. Chase

INVENTOR

James Carr

BY Howard P. Denison

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 751,054. Patented February 2, 1904.

UNITED STATES PATENT OFFICE.

JAMES CARR, OF SYRACUSE, NEW YORK, ASSIGNOR TO CARR BROTHERS, OF SYRACUSE, NEW YORK, A COPARTNERSHIP.

LATHE TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 751,054, dated February 2, 1904.

Application filed February 9, 1903. Serial No. 142,488. (No model.)

To all whom it may concern:

Be it known that I, JAMES CARR, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Lathe Tool-Holders, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in tool-holders, and relates more particularly to that class which is adapted to be inserted in the ordinary tool-post of a lathe.

The object of my present invention is to provide a straight bar or shank with a revoluble tool-holder which is disposed at an angle other than a right angle with the bar or shank, whereby the cutting-tool, which is adapted to be inserted into the holder, is held at an angle other than a right angle with the bar with its cutting edge uppermost, so as to afford a shearing cut upon the article being milled.

Another object is to permit the tool-holder to be rotated with the tool therein, so that the horizontal angle of the tool may be changed for right or left hand work and still maintain the tool in a vertically-inclined position with its cutting edge uppermost.

Further objects of this invention will appear in the subsequent description.

Referring to the drawings, Figure 1 and 2 are respectively top plan and side elevation of my improved tool-holder. Fig. 3 is a sectional view taken on line 3 3, Fig. 1. Fig. 4 is a sectional view taken on line 4 4, Fig. 2. Figs. 5 and 6 are sectional views similar to Fig. 4, showing the tool in different positions, one for left-hand work and the other for right-hand work. Fig. 7 is a sectional view similar to Fig. 3 of a slightly-modified form of shank and tool-holder. Fig. 8 is a sectional view taken on line 8 8, Fig. 7.

Similar reference characters indicate corresponding parts in all the views.

In carrying out the object of my invention I provide an upwardly-deflected shank or bar 1 with a head 2, said head being provided with a circular opening or bore 3, extending therethrough from the top to bottom and disposed at an angle other than a right angle with the shank 1, the upper and lower faces of the head being disposed at right angles with the bore, and therefore at an angle with the body of the bar. Journaled in this bore or opening is a revoluble tool-holder 4, which is provided with an enlarged lower end or head 5 and a central transverse slot 6, this slot 6 being movable into and out of registration with a lengthwise slot 7 in the shank 1 and head 2, and both slots are disposed at substantially right angles with the axes of the revoluble tool-holder 4. The tool-holder 4 is inserted in the lower end of the opening 3 of the head 2 and is of slightly less length than the head—that is, the upper end terminates beneath the upper end of the opening when the tool is clamped in position—so that the head 5, which forms the lower wall of the slot 6, firmly engages the lower face of the tool and impinges the upper face of said tool against the upper wall of the slot 7 of the head 2. A clamping-screw 8 is inserted in the upper end of the opening 3 and is engaged with the threaded socket 9, opening inwardly from the upper end of the tool-holder 4, said screw being provided with an enlarged head 10 and an angular bolt-head 11, the enlarged portion 10 of the screw being adapted to engage the upper face of the head 2 to hold the screw from inward movement and at the same time to permit the screw to draw the tool-holder 4 upwardly, so as to impinge the tool, as 12, between the lower enlarged end of the tool-holder and upper wall of the slot 7, a suitable wrench being applied to the angular portion 11 for operating the screw. The slot 6 in the tool-holder is of just sufficient size to receive a tool 12 and permit its free endwise movement for withdrawal or insertion when the clamping-bolt 8 is loosened. The slot 7 preferably extends through the front and sides of the head 2 and is continued downwardly and rearwardly through the bottom of the shank, so that tools of different lengths may be employed and may be placed at different horizontal angles with the shank.

In Figs. 1, 2, and 3 I have shown the tool as used for straight work—that is, its rear end is inserted into the slot at the rear of the tool-holder, and is therefore held in alinement with

the shank; but it is sometimes desired to throw the cutting edge of the tool to the right or left, which requires that the tool be loosened and partially withdrawn and the tool-holder be rocked in its bearing for tilting the tool horizontally to different angles, so that the heel of the tool when reinserted lies along the outer side face of the shank and engages the same at the rear of the tool-post; but in either of these positions the tool is held with the cutting edge uppermost, so that no matter what position the tool assumes the cutting edge is always higher than the heel of the tool and the heel always has a bearing on the shank, which is an important feature of this invention, for the reason that a heavier cut can be made than would be possible if the tool were disposed in a horizontal position and its heel unsupported.

Another feature of this invention is that different tools may be inserted in the tool-holder without removing the shank from the main tool-post of the lathe, and these tools being very much smaller than those commonly employed it is evident that they are more easily tempered and can be manufactured at a minimum cost.

In Fig. 7 of the drawings I have shown a shank 1′, consisting of central and side bars 14 and 15, the central bar being movable lengthwise of the side bars and the side bars being provided with a yoke or head 16. The outer end of the yoke 16 and adjacent face of the central bar 14 are separated from each other and are disposed in a vertical plane at an angle other than a right angle with the shank and constitute jaws for holding a revoluble tool-holder 17. The tool-holder and also the yoke 16 and bar 14 are provided with slots arranged at substantially right angles with the axis of the tool-holder for receiving the tool, as 12, which is held in position by a clamping-screw 18 in the upper end of the tool-holder. The slot in the yoke 16 extends through its side walls to permit the tool to be swung laterally for right or left hand work. The front ends of the side bars 15 are locked to the rear ends of the yoke 16 by a pin 19, which passes through an elongated slot 20 in the front end of the central bar 14, and the rear ends of the side bars 15 are united by a pin 21, which passes through an elongated slot 22 in the rear end of the central bar, the pin 21 being provided with a threaded opening 23, in which is movable an adjusting-screw 24. The inner end of this adjusting-screw is engaged with the adjacent end face of the central bar 14, and it is evident that by rotating the set-screw in one direction the yoke 16 and adjacent end of the central bar 14 are caused to approach each other and to engage the tool-holder for holding the same from rotation or endwise movement, and by rotating the screw in the opposite direction the yoke and adjacent end of the bar 14 are separated and said tool-holder is thereby released and may be rotated to change the angle of the tool to the right or left.

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

1. In a lathe tool-holder, a bar having in one end a cylindrical opening therethrough from top to bottom and inclined from a perpendicular to the bar, said bar having a central lengthwise opening extending at right angles to and intersecting the first-named opening to receive and hold the heel of the tool, and a tool-holder journaled in the first-named opening and provided with a slot movable into and out of registration with the lengthwise opening in the bar to receive the body of the tool, and means to clamp the tool-holder in place.

2. A lathe tool-holder, comprising a bar having one end deflected upwardly and provided with a circular bore therethrough from top to bottom and inclined from a perpendicular to the body of the bar, the lower and upper faces of the upwardly-deflected portion being disposed in parallel planes at an angle with the bar and at right angles to the bore, said bar having a central lengthwise opening extending rearwardly and downwardly from the bore to receive and support the heel of the tool, a revoluble tool-holder journaled in the bore and provided with a slot movable into and out of registration with the lengthwise opening to receive the body of the tool, portions of the front and side walls of the bore being cut away to form tool-engaging shoulders at the rear of the bore and at the sides of the lengthwise opening, and means to clamp the tool-holder in place.

3. A lathe tool-holder comprising a shank or bar having one end deflected upwardly and provided with a circular bore inclining upwardly and rearwardly from its lower face through its upper face, said bar having a central lengthwise opening extending rearwardly and downwardly from the bore and continued through the front and sides of the head to receive the tool, the side walls of the lengthwise opening terminating at the rear of the bore to form abutments for the tool, a tool-holder rotatively mounted in the bore and having a slot movable into and out of registration with the lengthwise opening, and means to clamp the tool-holder in place.

In witness whereof I have hereunto set my hand this 3d day of February, 1903.

JAMES CARR.

Witnesses:
H. E. CHASE,
MILDRED M. NOTT.