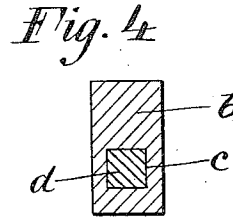
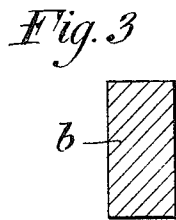
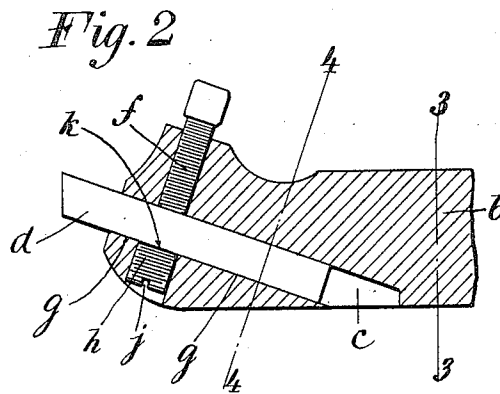
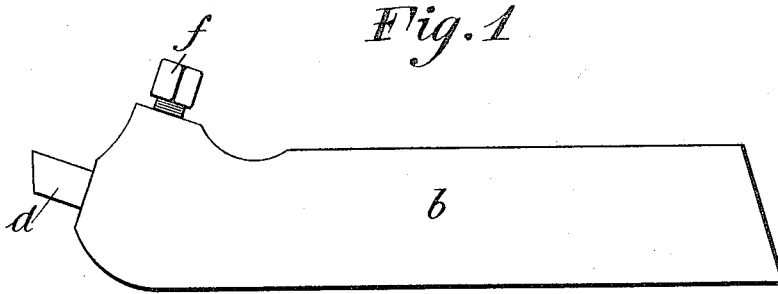


J. CARR.
 TOOL HOLDER.
 APPLICATION FILED FEB. 15, 1912.

1,045,813.

Patented Dec. 3, 1912.



Witnesses:
E. P. La Gay
Francis A. Stanton

James Carr Inventor
 By *his Attorneys*
Rumney & Martine

UNITED STATES PATENT OFFICE.

JAMES CARR, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE HENRY G. THOMPSON & SON COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

TOOL-HOLDER.

1,045,813.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed February 15, 1912. Serial No. 677,733.

To all whom it may concern:

Be it known that I, JAMES CARR, a citizen of the United States, and resident of Syracuse, New York, have invented certain new and useful Improvements in Tool-Holders, (Case A,) of which the following is a specification, accompanied by drawings.

The invention relates particularly to tool holders for high speed tools, for planers, lathes and other machinery, although not limited to high speed tools. In many tool holders the hard steel tool is directly held in the opening provided for it in the relatively soft steel holder and secured therein by a set screw. It frequently happens that the surface or bed of relatively soft metal opposite the set screw becomes slightly worn or concave, so that the tool is subjected to a bending strain by the set screw, sometimes causing the tool to break across where the set screw acts upon it. The present invention obviates this trouble and provides a tool holder in which the tool can always be truly and accurately held without such strains, as will appear from the following description and drawings.

In the drawings, Figure 1 is a side view of the approved tool holder, Fig. 2 a partial central longitudinal section through the tool holding opening, Fig. 3 a cross section of the shank on plane 3—3, and Fig. 4 a cross section on plane 4—4 of Fig. 2.

The general shape of the tool holder as a whole may vary widely without affecting the present invention. In the form illustrated, *b* is the rectangular shank of the tool holder and *c* the tool holding opening or recess, *d* is the tool, which should substantially fit the tool opening or recess *c*, in cross section, *f* is the binding screw or set screw by which the tool is secured in the tool opening or recess *c*. The bed or side of the tool opening opposite the set screw should of course make contact with the tool at a plurality of points so as to give it a long bearing surface for its rigid support.

The tool holder, being made of relatively soft material as compared with the tool *d*, tends to become worn and slightly concave in the neighborhood of points opposite the set screw if the holder is of uniform metal at these points, so that while the tool may find a true bearing at the points marked *g* it is not properly supported directly opposite the binding screw and is, therefore, sub-

jected to bending stress, which, particularly with the very hard steels used in high speed tools, may even break the tool. At *h* is shown a hard steel body presenting a flat surface to the tool and secured in place preferably by being screw-threaded into the tool holder, as shown. It may be adjusted by means of a screw driver and is provided with the usual form of cross groove or slot *j* for fitting the screw driver. The flat face *k* should be set to form an exact continuation of, or lie in the same longitudinal line or plane with, the bearing surfaces *g* of the bed on either side of the body *h*, so as to insure a long and exactly true and rectilinear bearing for the tool at three or more points, at least, in the length of the tool opening on the bed or side of the opening opposite the set screw *f*.

It will be seen that the hard body *h* constitutes an inset in the bed of the tool opening, and it may be set in its proper position in the following manner: Taking a straight, true tool *d* and putting it in place in the opening or recess *c*, the set screw *f* should be lightly screwed down so as to press the tool against the opposite bed, but without subjecting it to any considerable bending stress. Then the inset body *h* should be screwed up against the tool firmly, but not very tightly; whereupon the alinement between its surface *k* and the bearing points, for example, *g*, at either side of it, is insured. Then the inset body *h* is to be left in this adjustment as a permanent part of the tool holder, unless by wear or accidental displacement it should from time to time require realinement.

In using the tool holder, the set screw *f* is loosened to release the tool and is screwed in to hold the tool when the tool has been put in place without disturbing the hard inset body *h*. It will be seen that the action of the set screw *f* presses the tool not only against the hard surface *k* opposite to it, but also against the points or bearings in alinement with it on either side longitudinally of the tool opening, as for example at *g*, and the tool is, therefore, held against a truly rectilinear bed or bearing.

In the tool holder shown, the tool opening extends obliquely through the holder and, consequently, the set screw *f* and the inset body *h* are set obliquely with their axes perpendicular to the tool opening.

Preferably the holes for the set screw and for the inset h may be drilled at a single operation as a single hole across the holder. Also, they may be screw-threaded with the

5 same size and pitch of thread.

I claim and desire to secure the following:

1. A tool holder having a shank and a tool-holding opening or recess and a set
10 screw for binding a tool therein and an inset body rigidly but adjustably set in the bed of the opening or recess opposite to the set screw between bearing portions of the bed located at longitudinally different posi-
15 tions which are flat both crosswise and longitudinally and adapted to react simultaneously with said inset body on the tool in the opposite direction to the action of the set screw.

20 2. A tool holder having a shank, a tool-holding opening or recess adapted to approximately fit the appropriate tool, a set

screw for binding the tool therein, the bed of the tool opening or recess on the opposite side to the said set screw having three or
25 more portions at three or more positions longitudinally of the opening or recess for simultaneously reacting on and supporting the rectilinear surface of a tool against the action of said set screw, one of said por-
30 tions comprising a hard inset body presenting a flat surface to the tool opposite to the set screw and screw-threaded adjustably in the holder whereby it may be accurately set in position for such rectilinear
35 support.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses, this 9th day of February, 1912.

JAMES CARR.

Witnesses:

HAROLD BINNEY,
AUGUSTA PSCHIERER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."