No. 714,942. Patented Dec. 2, 1902.

J. M. NORMAND.

TOOL HOLDER.

(Application filed Jan. 13, 1902.)

(No Model.)

Fig. 1

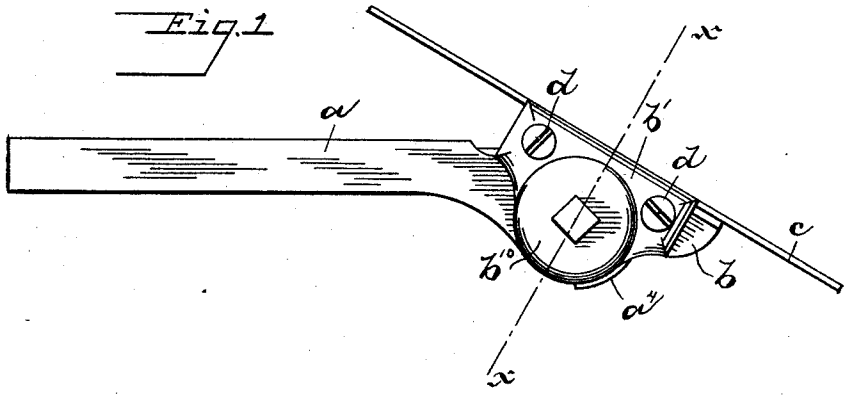



Fig. 2

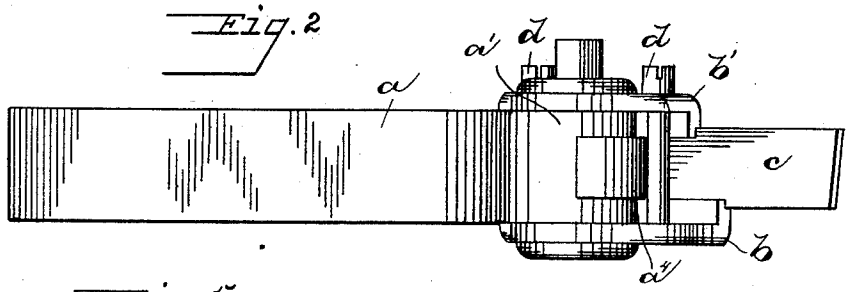



Fig. 5

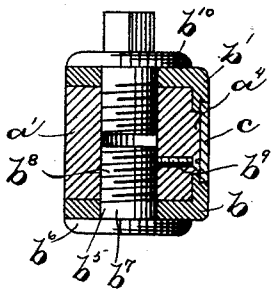



Fig. 3

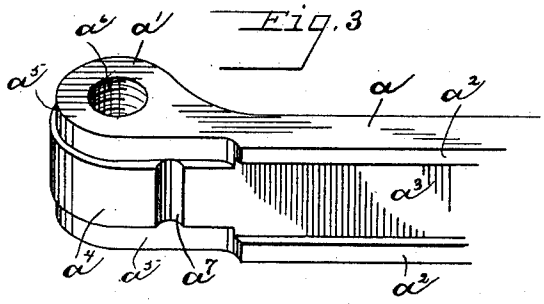
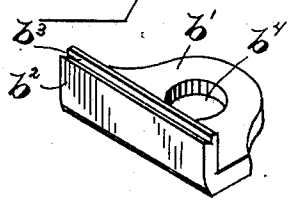



Fig. 4




WITNESSES:

T. Llewellyn Walker

Chas. J. Welch

INVENTOR

BY Joseph M. Normand

Stabler and Bowman

ATTORNEYS

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

# UNITED STATES PATENT OFFICE.

JOSEPH M. NORMAND, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE UNITED STATES TOOL HOLDER COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

## TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 714,942, dated December 2, 1902.

Application filed January 13, 1902. Serial No. 89,620. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH M. NORMAND, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification.

My invention relates to tool-holders for lathes, planers, and other machines.

While it is the common practice to employ the ordinary forged tool to save the expense of its heavy shank being of the same material and to avoid the cost and trouble of reforging when the cutting edge is worn down, the use of holders of a less expensive material in which the cutters are held has to a considerable extent been adopted. In this way there is no loss of the high-priced cutting-steel by reforging, the mere grinding of the cutter being all that is necessary to keep it in working condition.

The object of my present invention is to provide an adjustable holder, simple in construction, that will vary the inclination of the cutter and hold it rigidly in its adjusted position, and I provide independent means to rigidly hold the cutter while the adjustment is being made. I attain these objects by the constructions and combinations hereinafter more fully described, and set forth in the accompanying drawings, in which—

Figure 1 is a plan view of my device. Fig. 2 is a side view. Fig. 3 is a detail of the shank head or body. Fig. 4 is the clamping-plate, and Fig. 5 is a cross-section on the line $x x$ of Fig. 1.

Like parts are represented by similar letters of reference in the several views.

In the drawings, $a$ is the shank, having the rounded head $a'$ at an angle thereto. Said shank has the raised edges $a^2$, forming the channel $a^3$, which terminates at the head. The head is formed with a raised portion $a^4$, which begins in the same plane with and is a continuation of the bottom of the channel $a^3$ and extends in a circle to the opposite side of the head $a'$, and beginning at the termination of the channel $a^3$ said raised portion $a^4$ leaves a reduced portion $a^5$ on each side thereof. The clamping-plates $b$ and $b'$ on the respective sides of the head each have a straight side with an L-shaped projection $b^2$, on the inner side of each of which are the grooves $b^3$ to receive the cutter $c$. The L-shaped projections of the clamping-plates bear on the reduced portion $a^5$ of the head, and the portion of said projection below the bottom of the grooves $b^3$ is of equal thickness with the raised portion $a^4$ of the head, so that the cutter when in position will at all inclinations bear on said raised portion. The portion of the clamping-plates opposite the straight sides is preferably made to conform with the sides of the head and is perforated at $b^4$, said perforations registering with the screw-threaded perforation $a^6$ in the head.

The clamping-plate $b$ forms the base for the cutter and is preferably of greater length than $b'$ and extends farther beyond the head, so that the holder may be brought closer to the work, and said plate $b$ is journaled on and held in place by the screw-bolt $b^5$, having the head $b^6$, the plain portion $b^7$, and the screw-threaded portion $b^8$, it not being necessary to remove the plate $b$, and to prevent the bolt $b^5$ from coming loose the set-screw $b^9$ is employed to bear against said bolt. The clamping-plate $b'$ is journaled on and held in place by the screw-bolt $b^{10}$, of like construction with $b^5$, except, as this bolt is used to tighten and clamp the cutter in its adjusted position, it is provided with a head that can be turned by an ordinary wrench, as shown in Fig. 5. The cutter $c$ is further tightened in place between the grooves $b^3$ of the clamping-plates by the screws $d$, which extend through the plate $b'$ into the plate $b$, said cutter being of such width that when said plates are tightened the cutter will be rigidly held in place.

It will be seen that when the cutter $c$ is tightened in place by the screws $d$ the bolt $b^{10}$ may be loosened and the clamping-plates and cutter may be turned about the head to any position desired and then tightened in their adjusted position by the bolt $b^{10}$, making it possible to do a wide range of work.

To permit the straight grooved cutter-carrying sides of the clamping-plates to come as

near as possible in line with the channel of the shank, the groove $a^7$ is provided in the raised portion $a^4$ to receive the screw $d$ nearest the shank; but as this cannot be done to bring said parts entirely in line when a straight tool is desired the screw $d$ nearest the shank may be removed and the channel formed by the grooves of the side plates brought in line with the channel of the shank, thereby allowing the cutter to lie within the continuous channel so formed, the length of the channel largely compensating for the removal of the one screw and the cutter being held with ample rigidity for straight work.

Having thus described my invention, I claim—

1. The combination with the rounded head having on its surface a raised portion extending around said head, and depressed portions on each side of said raised portion, of a clamping-plate on each side of and pivoted to said head, said plates being adapted to bear against said depressed portions and carry the cutter to bear against said raised portion in any position of adjustment, and means to tighten the cutter between said plates and to hold said plates and cutter in their adjusted positions, substantially as specified.

2. The combination with the rounded head having on its surface a raised portion extending around said head, and depressed portions on each side of said raised portion, of clamping-plates on each side of said head adapted to bear against said depressed portions and carry the cutter to bear against said raised portion, clamping-bolts in said head on which said plates are pivoted, adapted to tighten said clamping-plates and hold the cutter in any position of adjustment on said head, substantially as specified.

3. The combination with the shank having a rounded head at an angle thereto, said shank being formed with a channel, the bottom of which extends in a raised portion around said head, having depressed portions on each side thereof, of a cutter-holding clamping-plate on each side of and pivoted to the said head, adapted to bear on said depressed portions and carry the cutter to bear on said raised portion and in said channel, and means to tighten the cutter in its adjusted position, substantially as specified.

4. The combination of a rounded head having on its surface a raised portion and depressed portions on each side of said raised portion, a cutter, clamping-bolts and clamps journaled on said bolts on each side of said head adapted to bear against said reduced portions and to carry said cutter to bear against said raised portions in all positions of adjustment, and means to tighten said cutter in said clamps independent of the clamping-bolts, whereby the inclination of the cutter may be adjusted while the cutter is rigidly held in place, substantially as specified.

In testimony whereof I have hereunto set my hand this 28th day of December, A. D. 1901.

JOSEPH M. NORMAND.

Witnesses:
PERCY NORTON,
CHAS. I. WELCH.