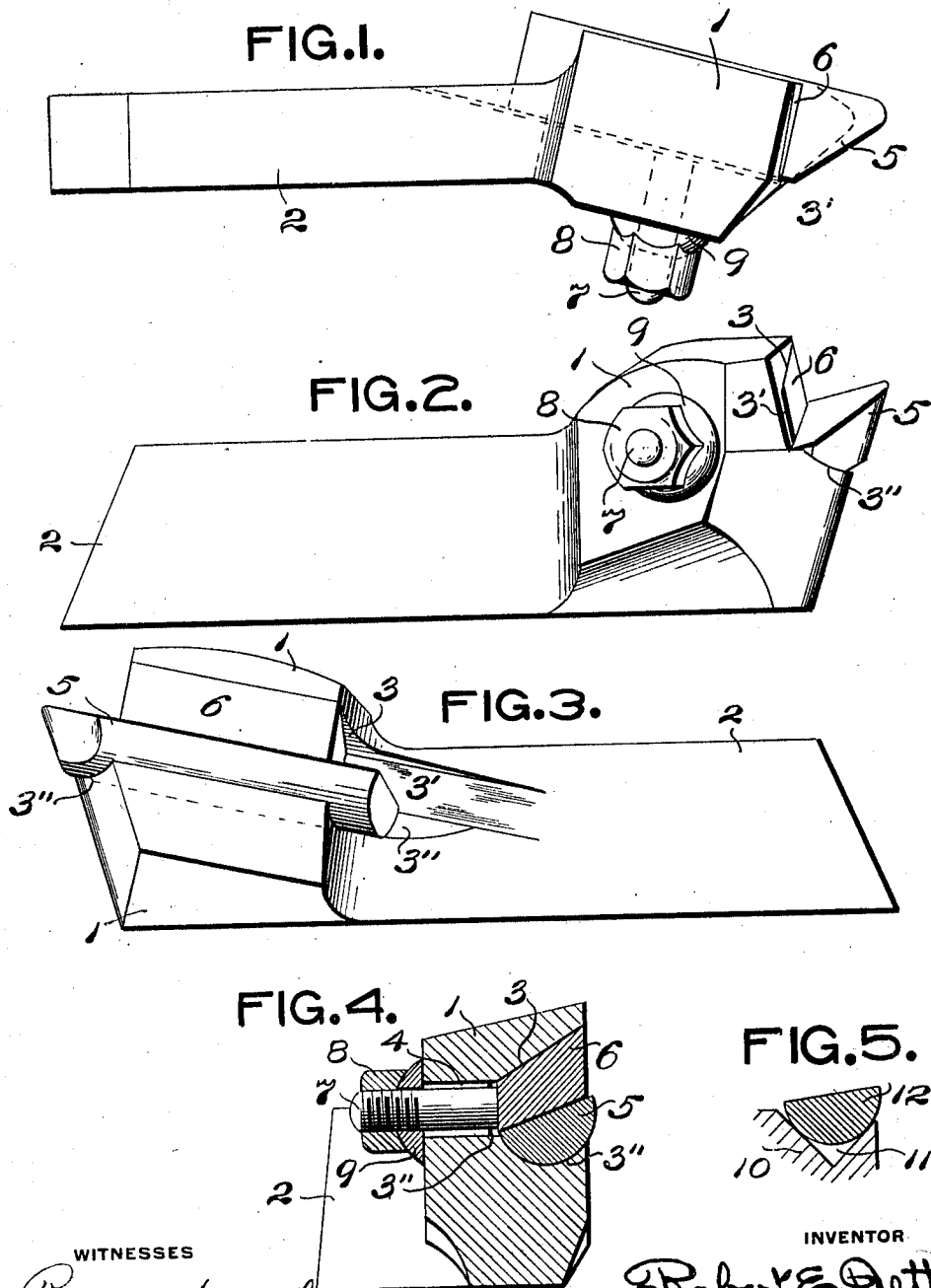


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TOOL HOLDER.
APPLICATION FILED AUG. 8, 1910.

992,860.

Patented May 23, 1911.



WITNESSES

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ROBERT E. DETTE, OF KNOXVILLE, PENNSYLVANIA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT E. DETTE, a citizen of the United States, residing at Knoxville, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Tool-Holders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates more particularly to that class of tool holders employed in connection with lathes, planers, boring machines, etc.

The invention has for its object to provide a holder and special form of cutting tool therefor which will dispense with the necessity of having a variety of cutting tools for working upon various metals; which will permit the cutting tool being brought into position for cutting in such places as corners, without the holder being an obstruction, and which will be simple, practical, and of few parts.

With the above objects in view, the invention is embodied in the form of device as hereinafter fully described in this specification and particularly pointed out in the appended claims.

In describing the invention in detail reference is to be had to the accompanying drawings forming a part of this specification, wherein like numerals of reference indicate like parts wherever they occur in the several views, in which:

Figure 1, is a plan view of my improved holder. Fig. 2, is a side elevation thereof. Fig. 3, is an elevation of the opposite side. Fig. 4, is a transverse sectional view through the holder and attending parts. Fig. 5, is an end sectional elevation showing a modified form of tool seat in the holder.

The device as herein illustrated, comprises a head portion 1, of any approved design, forming the head or holder proper and within which the cutter tool is held in operative position, and an integral shank portion 2 of the ordinary design by which the holder is secured in the usual manner to the part of the machine designed to receive the same, said head portion having a slotted

opening traversing one side thereof for the reception of the cutting tool and attending clamping member, which opening has, transversely, its upper wall 3 downwardly inclined toward the rear wall 3' and its lower wall 3'', forming the cutting tool seat, grooved in concave form. Longitudinally, the walls of said opening are in parallel relation and inclined in a direction toward the lower rear portion of the shank, which inclination is desirable, in most instances, as will later on be shown, but not essential. Furthermore, the position of the opening in the head, relative to the shank, is not essential in all instances, as will also appear later. The head of the holder is further provided with a transversely disposed opening 4 communicating with the aforesaid opening, which opening is elongated in its vertical direction.

Adjustably disposed in a longitudinal direction within the seat 3'' of the holder, is the cutting tool 5, which tool is of semi-circular form in cross-section so as to correspond with and present a broad contact surface with the seat, as well as permit the said tool being rockably adjusted in a lateral direction upon the seat.

Engaging between the upper flat surface of the cutting tool and the wall 3 of the holder, is a tool clamping member 6, of wedge shape in cross-section and provided with a laterally disposed threaded shank 7, which shank passes through the aforesaid opening 4 and carries a nut 8 for the purpose of drawing up the wedge tightly to retain the cutter tool in rigid position.

Interposed between the nut 8 and outer adjacent face portion of the head, is a washer 9 having its outer face of convex form to correspond with a concave engaging surface of the nut, thereby insuring an even bearing on both sides of the cutter tool in case said tool, or the clamping member, vary in thickness, the latter adjusting itself to suit the condition.

In the cutting tool and its seat, it will be observed that the tool has a large contacting surface with the seat, and that the said tool will rockably adjust itself thereon laterally, in a partially rotatable manner, causing its upper flat portion to assume an angle corresponding to the underside of the clamping member, as the latter is inserted and drawn tightly in place, and as the lateral inclina-

tion of the cutter of necessity varies, in accordance to the metal worked upon, it is only necessary to substitute one clamping member for another having the desired angularity or transverse taper of the under side thereof to cause the cutter to assume and be retained at the same angle, thus instead of requiring a number of cutter tools for the working of the different metals it will be only necessary to have a set of clamping members of desired tapers, which clamping members are practically indestructible and will outlast any number of cutting tools.

The inclination of the cutter tool, longitudinally, will in most instances be advisable, for the reason that it will obviate the necessity of grinding the upper cutting edge, to suit requirements, but it will be apparent that for the cutting of softer metals, such as brass, the slotted opening for the reception of the cutter tool and its clamping member may be made parallel with the holder shank, or approximately so. Furthermore, it may be desirable, in some instances, to form the holder with the head at right-angles or otherwise with respect to the shank portion, as may be best suited for the occasion. It will also be apparent, that the tool being held within the head of the holder in a manner to permit one of the edges of the cutter to project beyond the side of the head, that there is no obstruction presented by the holder thereat, thus permitting the cutter being brought close to the work, particularly in corners and the like.

At Fig. 5, where the modification of the tool seating groove is shown, the reference numeral 10 designates the head of the holder, wherein the said tool seating groove 11 is of angular form in cross-section, the cutter tool 12 being shown seated therein. In this form of tool seat the partial rotary adjustment of the tool transversely is permissible, but the seat of concave form in cross-section is preferred owing to its adaptation to the entire under surface of the cutter tool and consequent better and firmer seating thereof.

Having thus shown and described a device embodying the essential features of my invention, what I claim is:

1. The combination of a holder having a substantially longitudinally disposed tool seating groove traversing one side of the holder end proper, the tool seat proper being the lower wall of the groove, a cutting tool of approximately semi-circular form in cross-section disposed within said seat, and a clamping wedge disposed longitudinally of and upon the tool and occupying the space between the tool and upper wall of the groove, said tool adapted to adjust itself

upon its seat by a partial rotary movement to conform with the clamping wedge.

2. The combination of a holder having a substantially longitudinally disposed tool seating groove traversing one side of the holder end proper, a cutter tool of approximately semi-circular form in cross-section disposed within said seat, and a laterally operated clamping wedge disposed longitudinally of and upon the tool and occupying the space between the tool and upper wall of the groove, said tool adapted to adjust itself upon the seat by a partial rotary movement to conform with the clamping wedge, and said tool seating groove being inclined in the direction of its length to elevate the point of the tool.

3. The combination of a holder having a substantially longitudinally disposed tool seating groove traversing one side of the holder end proper, a cutting tool of approximately semi-circular form in cross-section disposed within said seat, and a clamping wedge disposed longitudinally of and upon the tool and occupying the space between the tool and upper wall of the groove, said tool adapted to adjust itself upon its seat by a partial rotary movement to conform to the clamping wedge, and said clamping wedge being provided with means for operating the same laterally, insuring contact of the same throughout its length with the tool and wall of the groove and retain the same in operative position.

4. The combination of a holder having a tool seating groove traversing one side of the holder end proper at an inclination with respect to two adjacent sides thereof, a cutter tool of approximately semi-circular form in cross-section disposed within said seat, a clamping wedge disposed longitudinally of and upon the cutter tool and occupying the space between the tool and upper wall of the groove, said clamping wedge having a threaded shank extending laterally therefrom through an opening in the holder, a nut carried by said shank and having its inner surface of concave form, and a washer interposed between the side of the holder and nut and having one of its sides of convex form to correspond with the adjacent surface of the nut, said tool adapted to adjust itself upon its seat by a partial rotary movement to conform to the clamping wedge.

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

ROBERT E. DETTE.

Witnesses:

D. B. OAKS,

R. S. HARRISON.