

G. W. HENRY.
TOOL HOLDER.
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1,286,623.

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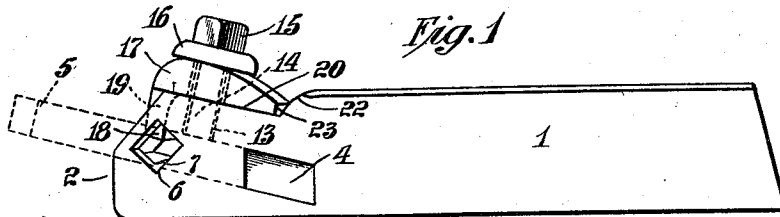


Fig. 1

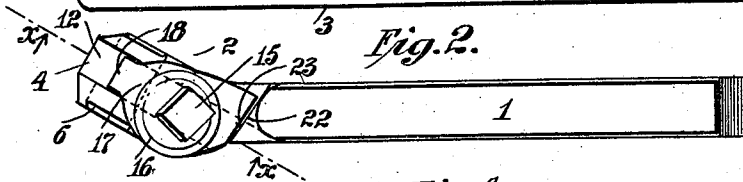


Fig. 2.

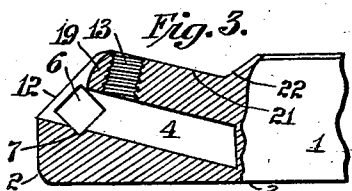


Fig. 3.

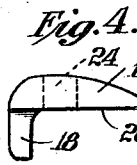


Fig. 4.

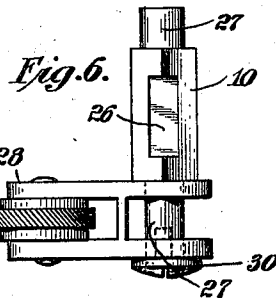


Fig. 6.

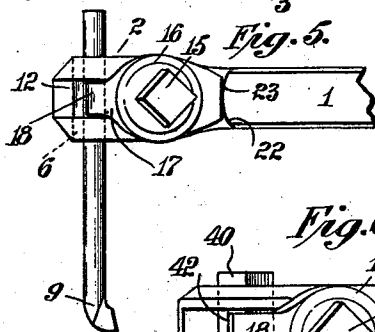


Fig. 5.

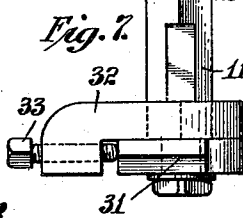


Fig. 7.

Fig. 10.

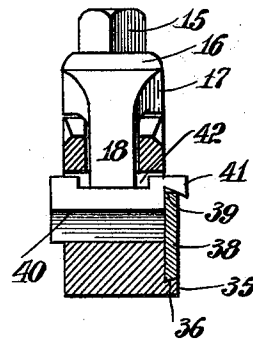


Fig. 8.

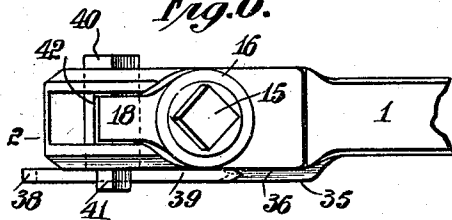


Fig. 9.

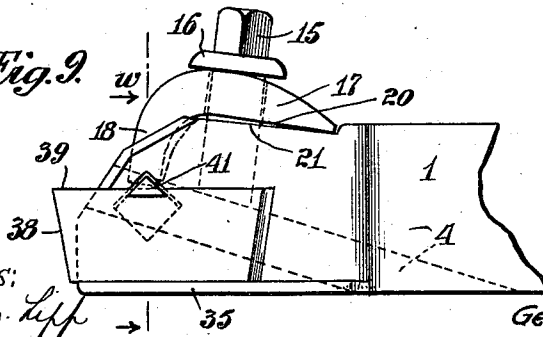
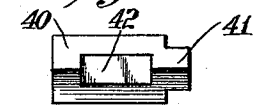


Fig. 11.



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UNITED STATES PATENT OFFICE.

GEORGE W. HENRY, OF NEW YORK, N. Y., ASSIGNOR TO EDGAR BOISSIER, OF GREAT NECK, NEW YORK.

TOOL-HOLDER.

1,286,623.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE W. HENRY, a citizen of the United States, residing at Ridgewood Heights, borough of Queens, city of New York, in the county of Queens and State of New York, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification.

This invention relates to improvements in tool holders, particularly to holders for that class of tools used in lathes, planers, and so forth.

The object of my invention is to provide a new and improved tool holder of the class mentioned, which is simple in construction, strong and durable, is serviceable to hold tools projecting from the end of the tool holder as well as various constructions of tools projecting laterally from the tool holder and tools mounted upon a transverse pin or support held in the tool holder.

In the accompanying drawings in which like letters of reference indicate like parts in all the figures:

Figure 1 is a side view of one embodiment of my improved tool holder.

Fig. 2 is a plan view of the same.

Fig. 3 is an enlarged vertical sectional view on the line $x-x$, Fig. 2.

Fig. 4 is a detail view of the clamp.

Fig. 5 is a plan view of a tool holder made straight and showing the manner in which the tool is held transversely to the holder.

Figs. 6 and 7 are detail views of parts to be fitted to the tool holder.

Fig. 8 is a longitudinal top view showing a modified construction.

Fig. 9 is a side view of the same.

Fig. 10 is a vertical sectional view on the line $w-w$ of Fig. 9, parts being omitted and others broken away.

Fig. 11 is a plan view of the holding clamp for the parting tool or other cutting tool, shown in Figs. 8, 9 and 10.

The tool holder is composed of a shank 1 made in the shape of a shank of a tool such as is commonly used in lathes, planers, and so forth. At one end this shank is provided with a head portion 2 made integral with the shank and which shank and head can be straight as shown in Figs. 5, 8 and 9, or can be offset as shown in Fig. 1. The bottom edge of the tool holder and the head portion preferably form one continuous

straight line as indicated at 3 in Figs. 1 and 3. A hole for a cutter 4 extends from the end of the head to the side of the shank and is inclined downward as shown, so that an ordinary lathe tool 5 which is placed into this hole for a cutter, projects from the end surface of the head upward at an inclination. The hole for a cutter 4 is intersected by a second hole for a cutter 6, which extends through the head 2 from one side surface to another and intersects the hole for a cutter 4 in the bottom surface of the same, as indicated at 7, so that the tool or part of a tool can be placed into said transverse hole for a cutter 6 and held transversely to the tool holder, for example a tool 9 of Fig. 5 or the tool supports 10 and 11 of Figs. 6 and 7, which will be described later.

The hole for a cutter 4 terminates in a recess 12 in the upper part of the end surface of the head, so that this recess communicates with the longitudinal hole for a cutter 4 and the transverse hole for a cutter 6. A screw threaded hole 13 extends downward from the top edge of the head 2 to the top of the hole for a cutter 4 and in this threaded hole there is mounted a screw 14 for clamping the parts. The screw 14 has a polygonal head 15 for applying a key, and directly below the head is provided with a bearing shoulder 16. A clamp 17 is provided with a downwardly projecting jaw 18 at one end, which jaw can pass through the recess 12 and into the transverse hole for a cutter 6 and is in front of the partition 19 formed between the bottom of the recess 12 and the threaded hole 13. The underside of the body of the clamp 17 is finished off straight, as shown at 20, and at the inner end of a straight portion 21 on the top of the head, a shoulder 22 is formed, so that when the clamp is placed on the top of the head, with its lug in the recess 12 and the end of the lug in the transverse hole for a cutter 6, the end edge 23 of the clamp rests against the shoulder 22 which forms an abutment. The clamp is raised from the top of the head, except at its end 23, by the jaw 18, engaging the tool and the pressure of the jaw on the tool is produced by the shoulder 16 on the screw.

The clamp is provided with a smooth hole 24 extending from top to bottom and of sufficient size for the screw 14 to pass freely

through the same. If the tool 5 is inserted in the tool holder so as to project from the end of the head 2, the main portion of said tool rests within the hole for a cutter 4 and is clamped in the same by means of the clamp, the lug 18 of which is pressed on the upper surface of said tool by the screw 14 which is drawn up tight. The tool 5 can be adjusted inward and outward to project a greater or less distance and a tool can be firmly and securely held if it is only of sufficient length to pass into the hole for a cutter as far as the lug or jaw 18 of the clamp and thus the smallest pieces of tool steel can be used, for example as short as one inch.

If the tool is of greater length, its bit end can project from the end of the tool holder as shown in dotted lines in Fig. 1, and the inner end can project from the end of the hole for a cutter 4 and beyond the sides of the shank, at an inclination. When the tool holder is made straight and without an offset, the hole for a cutter 4 extends to the underside of the tool holder, as shown in Fig. 9 and in such cases the tool holder can project from the underside of the shank. When the tool is to be held laterally to the tool holder, the transverse hole for a cutter 6 is used and the tool is adjusted in the same to project a greater or less distance beyond one side face of the head, and the tool is then clamped by means of the jaw 18, which engages the tool, which may be square, polygonal, or round in cross section. The clamp is pressed down by means of the screw 14 in the manner previously described. For the purpose of holding a knurl or other tools, a tool support 10 is placed into the transverse hole for a cutter 6 and held by means of the clamp in the manner above described, the said support being preferably provided with a recess 26, into which the lug or jaw 18 of the clamp engages. This stud can be provided with necks 27 on its ends, on which necks the knurl holder 28 for the knurl 29 is fastened by means of a screw 30. A thread cutting tool or any other cutting tool 31 may be mounted on a neck of a tool support 11, as shown in Fig. 7.

To prevent this cutter from turning and also to bring it to the proper angle, a block 32 having a square hole for receiving the squared part of the support 11, is first slipped on the support 11 and a screw 33 mounted in the block 32 bears upon the edge of the cutter 31 so as to keep it from turning around, and at the proper angle.

For the purpose of holding a parting tool or other cutting tool, the head of the shank is provided with a bottom flange 35 which projects laterally, the top of which flange forms an inwardly tapered or inclined shoulder 36. A cutter or parting tool 38 rests on this shoulder 36 and its upper edge 39

is clamped by a clamping block 40 which is passed through the transverse hole for a cutter 6. The clamping block 40 is provided at one end with a lug 41 which projects beyond said end, at the top of the tool, and has its bottom edge beveled so as to engage the upper edge of the cutter 38. The clamping block 40 is provided in its upper surface with a recess 42 which can be entered by the jaw 18 of the clamp 17.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A tool holder consisting of a shank terminating in a head and having a hole for a cutter extending lengthwise through the head portion and a hole for a cutter extending transversely through the head portion, which holes for a cutter intersect and have their bottoms in approximately the same plane, in combination with a clamp having a lug extending into the holes for a cutter at their intersection, and means for holding said clamp in place, substantially as set forth.

2. A tool holder consisting of a shank terminating in a head and having a hole for a cutter extending lengthwise through the head portion and a hole for a cutter extending transversely through the head portion, which holes for a cutter intersect and have their bottoms in approximately the same plane, in combination with a clamp resting on the top of the head, which clamp has an aperture and a downwardly extending lug and a screw passed through the clamp into the top of the head portion of the tool holder, substantially as set forth.

3. In a tool holder, the combination with a shank having a head at one end, the top of the head being inclined rearwardly and downwardly to form a shoulder in the top edge of the shank, said shank having a lengthwise and a transverse hole for a cutter, which holes for a cutter intersect, a clamp resting with one end against the above mentioned top shoulder and having a downwardly projecting lug at the opposite end and a screw passed through the clamp into the top edge of the head, substantially as set forth.

4. In a tool holder, the combination with a shank terminating in a head, the top of the head being inclined downwardly and rearwardly to form a shoulder, the head having a lengthwise and a transverse hole for a cutter, which holes intersect, a recess formed in the end of the head and communicating with both holes, a clamp fitting on the top of the head and resting with one end against the above mentioned shoulder and having a downwardly inclined lug at the opposite end, and a screw passed through the clamp into a threaded aperture in the top of the shank, substantially as set forth.

5 5. In a tool holder, the combination with a shank terminating in a head and having a longitudinal hole for a cutter and a transverse hole for a cutter, intersecting each other, the longitudinal hole for a cutter extending from the front end of the head to one of the surfaces of the shank, and terminating in said surface, of a clamp having a lug extending into the holes at their intersection, and means for holding said clamp in place, substantially as set forth.

10 6. A tool holder consisting of a shank terminating in a head and having a hole for a cutter extending lengthwise through the head portion and a hole for a cutter extending transversely through the head portion,

which holes intersect, a clamp for clamping a tool placed in either hole for a cutter, a screw for holding the clamp, a flange at the side of the head, forming a shoulder for receiving and supporting the bottom edge of a tool, at the side of the holder, and a transverse clamping block held in the transverse hole for a cutter by the clamp, the end of said clamping block resting upon the tool, substantially as set forth.

In testimony whereof I have affixed my signature in the presence of two witnesses.
GEORGE W. HENRY.

Witnesses:

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E. B. DESATNEK.

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