(No Model.)

J. E. WOODBRIDGE.

METAL TURNING TOOL.

No. 262,878. Patented Aug. 15, 1882.

Fig. 1.

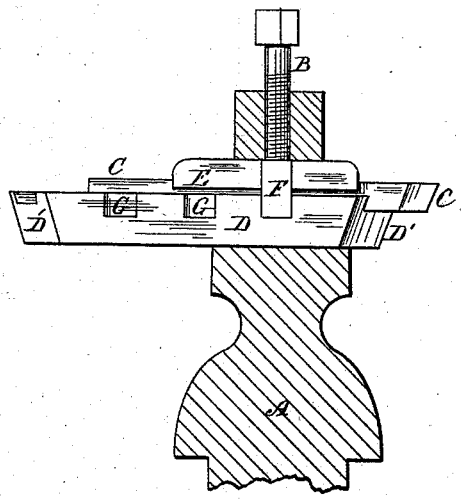
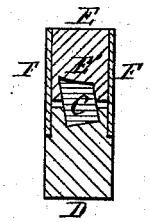


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES E. WOODBRIDGE, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND FREDERICK N. GARDNER, OF SAME PLACE.

METAL-TURNING TOOL.

SPECIFICATION forming part of Letters Patent No. 262,878, dated August 15, 1882.

Application filed March 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. WOODBRIDGE, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Metal-Working Tools; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to tools which are intended to be held in the customary manner in the tool-post of a lathe or the tool-holder of a planing-machine, and which have commonly been made of a bar of steel of rectangular section, having the cutting part forged of proper form upon its end.

The object of my improvement is to provide a tool which can be used without reforging as worn, and be sharpened simply by grinding, the cutting part of which can be made of the best material without requiring the great waste of steel for the body or shank as ordinarily constructed.

It also has for its object the construction of a reversible tool, both ends of which can be shaped and sharpened; and it also has for its object the reduction in quantity of the best steel required for the cutting-edges by making the cutting part separable and exchangeable, and by constructing the holding part so as to support and stiffen the cutting-edge in a lateral direction.

In the accompanying drawings, illustrating my invention, Figure 1 is a side view of my improved tool, with the tool-post in which it is held shown in section. Fig. 2 is a cross-section through my improved tool, shown of full size, or double the scale of Fig. 1.

A is a tool-post of a lathe.

B is the screw which holds the tool, passed through the slot in the tool-post in the customary manner.

C is the cutting portion of my improved tool. It is a bar of uniform section throughout, and is ground off at the end to the proper cutting-angle for the work to be done. Its cutting-point is formed on one of the longitudinal edges, and it is sharpened by grinding upon the end only. One or both ends of this portion of the tool may be sharpened into cutting-edges.

D is the base of my improved tool. It is made rectangular, with a channel or groove in the top for the reception of the lower side of the part C. It is freed or beveled laterally at the ends, as shown at D′, for the purpose of supporting the back of the tool and not be in the way of the work operated upon. The inclination is made in opposite directions upon opposite ends of D, so as to be used with both right and left hand tools.

E is a rectangular cap-piece fitting upon the top of the part C. It is also provided with a channel or groove for the reception of the cutter C, so that when the parts are all placed together the outer contour is of a rectangular form, as shown in Fig. 2, corresponding to the section of the shank or bar portion of the forged tool commonly used.

In order to avoid damaging the top longitudinal edges of the part C, the bottom of the groove in the part E is made slightly convex, as at E′, in Fig. 1, so that it bears upon the middle of the bar and does not come in contact with the cutting-edge which forms the point as the tool is sharpened.

F F are side plates attached to or forming part of the cap E, and fitting into either of the recesses G in the case D as the cap is placed in position upon it. These are for the purpose of holding the whole together, so that it can be readily placed in the tool-post, or preventing the top and bottom from falling apart when the tool is used vertically, as in a planing-machine.

By means of my invention a tool is produced which does not require forging for the purpose of sharpening, but can be used up the whole length by simply grinding off the end at the proper angle when it becomes dull. The cutting part of my improved tool can also be made of a superior quality of steel, while the top and bottom can be made of an inferior material. These latter parts can also be used with a large number of cutters. By this means the quantity of the best or tool steel is reduced to

a minimum, and the great expense of having a large amount of steel lying idle in the form of tools is avoided.

What I claim as my invention is—

1. The cap E, made convex transversely on its bearing-surface, and resting on the surface of the cutter along a horizontal middle line only of said cutter, in order to avoid injury to its corners, substantially as described.

2. The combination of the grooved cap-piece E, provided with the side plates, F, consisting of vertical straps attached to the cap-piece, and the grooved base D, provided with recesses G, adapted to inclose and hold a cutter, C, substantially as described.

3. The base D, provided with laterally-beveled ends D′, whereby the back of the tool is supported, while the cutting-edge is left free, substantially as described.

4. A tool-holder provided with ends D′ D′, beveled laterally in opposite directions for holding and supporting tools adapted to cut in both right and left directions, substantially as described.

JAMES E. WOODBRIDGE.

Witnesses:
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