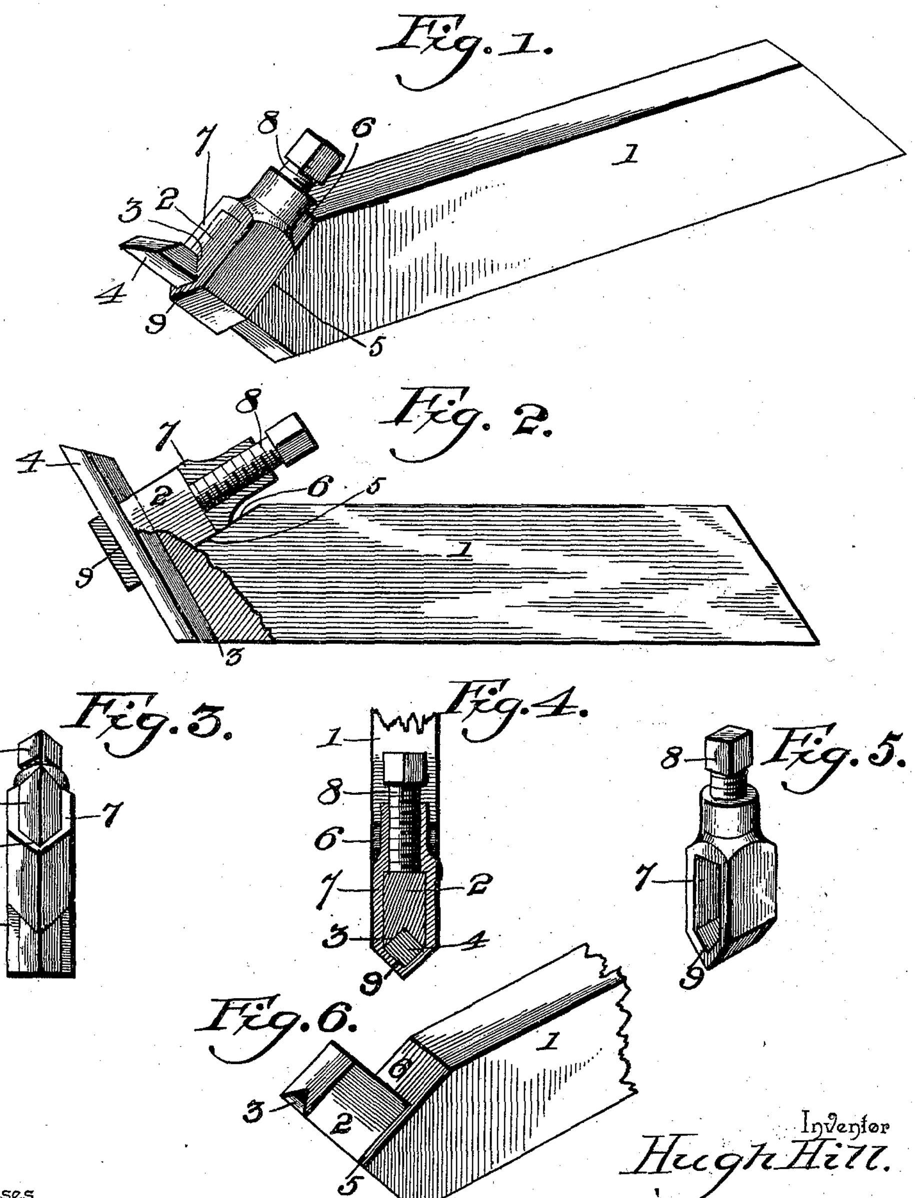
No. 647,137. Patented Apr. 10, 1900.

H. HILL.

CUTTING TOOL.

(Application filed June 14, 1897.)

(No Model.)



Witnesses
A. R. Appleman
[signature]

Inventor
Hugh Hill.

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HUGH HILL, OF ANDERSON, INDIANA.

CUTTING-TOOL.

SPECIFICATION forming part of Letters Patent No. 647,137, dated April 10, 1900.

Application filed June 14, 1897. Serial No. 640,684. (No model.)

To all whom it may concern:

Be it known that I, HUGH HILL, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented a new and useful Cutting-Tool, of which the following is a specification.

My invention relates to cutting-tools for turning-lathes, and particularly to tool-holders which are so constructed with relation to the blades as to insure the rigidity of the latter when supported in the tool-post of a lathe, planer, or similar machine; and the objects in view are to simplify and improve the construction of devices of this class, to provide a tool adapted to cut close to shoulders or chuck-jaws, the blade and holder being constructed without lateral projections, and to provide a construction and arrangement adapted to exclude cuttings from the joints between the connected parts.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of an offset cutting-tool constructed in accordance with my invention. Fig. 2 is a side view, partly in section, of the same. Fig. 3 is an end view. Fig. 4 is a transverse section taken in the plane of the set-screw. Fig. 5 is a detail view in perspective of the clamp detached. Fig. 6 is a detail view in perspective of the end of the holder with the blade and clamp omitted.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The holder of the tool embodying my invention comprises a shank 1, adapted to be engaged with a tool-post of a lathe, planer, or similar machine and provided with a parallel-sided angularly-disposed reduced projection or horn 2, which, in common with the contiguous end of the shank, is grooved to form a seat and within which is secured a bit or tool 4. The tool and seat are preferably angular in cross-section, and the ends of the tool may be cut off or beveled at different angles to form cutting edges, and thereby render the tool reversible. The projection or horn 2 is of less thickness than the body of the shank, whereby shoulders 5 are provided at the base of the horn, said shoulders being arranged in a plane at an angle to the shank of the tool, but at right angles to the beveled end thereof and provided with a seat, and above the upper edge of the horn the shank is cut away in the plane of said inclined shoulders, as indicated at 6.

The means which I employ for securing the blade in its place in the half-seat provided in the end of the shank consists of a clamp having a yoke 7, adapted to receive the horn or projection, and a set-screw 8, threaded in the yoke and adapted to bear terminally against the upper edge of the horn. The outer or front end of the yoke is provided interiorly with a half-seat 9, also corresponding cross-sectionally with one-half of the cross-section of the blade and adapted to register with the portion of the half-seat 3 in the front edge of the horn or projection to complete the seat provided for the reception of the blade. The yoke is open at its front and rear edges and is flush at its front edge with the extremity of the horn or projection to exclude cuttings from the yoke, and the thickness of the yoke corresponds with the projection of the shoulders 5 at the base of the horn, whereby the side surfaces of the yoke are flush with the corresponding surfaces of the shank.

By making the sides of the yoke parallel with each other, so as to fit closely against the parallel sides of the horn, the tendency of the tool to rotate axially within its seat when its edge is in engagement with the material being operated upon is prevented and a much more rigid construction is secured than if the walls of the horn were inclined toward each other and the arms of the yoke correspondingly inclined. As the shoulders upon which the lower edges of the yoke rest are at right angles to the seat the draw or pull of the yoke will clamp the tool securely in its seat, and the engagement of the sides of the yoke with the shoulders will prevent the possibility of the end thrust upon the tool causing the yoke to move downwardly upon the horn and let the tool slip in its seat therein, as might occur if the edges of the yoke were not supported by the shoulders. Still another advantage secured by the shoulders is in avoiding the projection of the yoke be-

yond the sides of the shank of the tool. This permits the edge of the tool being moved closer to the parts of the machine or the work than could be done if the sides of the yoke projected beyond the sides of the shank of the holder.

From the above description it will be seen that in addition to simplicity the tool possesses an advantage in point of compactness, the same being of equal thickness throughout from the rear end of the shank to the outer extremity of the horn or projection. Furthermore, by constructing the horn or projection of a length from the plane of the shoulders at its base equal to the width of the yoke of the clamp cuttings are excluded from the interior of the yoke without the use of auxiliary devices.

The yoke of the clamp is open at its opposite sides, and being of uniform cross-sectional area it is reversible, whereby either edge thereof may be arranged uppermost to lie flush with the extremity of the horn. This provides for inverting the yoke when that edge which has been uppermost has become roughened or injured by continued use to such an extent as to allow dust and cuttings to accumulate around the end of the horn.

Having described my invention, what I claim is—

1. As a new article of manufacture, a tool-holder, one end of which is beveled in two planes at right angles to each other and is provided with a parallel-sided horn projecting from one of the planes with its outer face forming an extension of the other plane, said beveled portion and its extension being provided with a tool-seat, and the sides of the horn being at a distance from the sides of the shank of the holder.

2. In a tool-holder, the combination with a shank, one end of which is beveled in two planes at right angles to each other and provided with a parallel-sided horn extending from one of the planes, the outer face of said horn forming an extension of the other plane and being provided in connection therewith with a tool-seat, the sides of the holder lying at a distance from the sides of the shank and forming shoulders, of a reversible yoke, the sides of which are parallel with each other and of the same thickness as and resting upon the shoulders of the shank, one of the walls of the yoke being provided with a tool-seat and the other wall being provided with a screw-threaded opening, and a set-screw in said opening.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HUGH HILL.

Witnesses:
F. J. HILL,
M. E. RECTOR.