A. S. Libby,

Cutter Holder,

No. 41,818, Patented Mar. 1, 1864.

Fig. 2

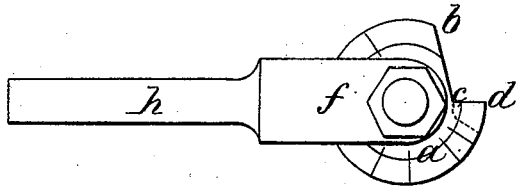
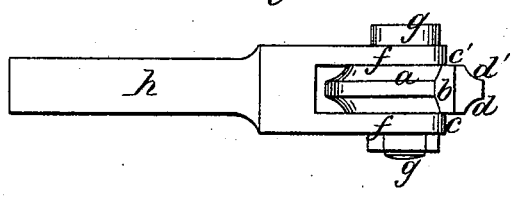


Fig. 1



Witnesses
S. M. M Intire.
Francis Fould.

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Asa S. Libby
By his Atty. W. Bloss

UNITED STATES PATENT OFFICE.

ASA S. LIBBY, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO GORDON McKAY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CUTTING-TOOLS FOR TURNING.

Specification forming part of Letters Patent No. **41,818**, dated March 1, 1864.

To all whom it may concern:

Be it known that I, ASA S. LIBBY, of Manchester, in the county of Hillsborough, in the State of New Hampshire, have invented a new and Improved Cutting-Tool; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

It is well known that in various branches of the arts cutting-tools are used to produce reverses or counterparts in outline of the edge of the cutting-tool, and that as this tool wears away or becomes injured in any manner it requires considerable very nice manipulation to reproduce another cutting-edge of exactly the same size and form. Where duplicate parts are to be made in large numbers it is important to have them truly duplicates, and it is often the case in the present practice that such parts vary from each other by reason of discrepancies in the cutting-tool, such as just referred to.

The object of my invention is to produce a tool that may have a new edge reproduced upon it as often as worn away or otherwise injured, which tool shall, by simple grinding or other equivalent sharpening thereof, executed without need of special care or skill on the part of the operator, have the exact fac-simile of the edge first produced, said tool having capacity for the reproduction of such edges a great number of times, and till the material of the tool is nearly exhausted by repeated sharpenings.

My invention consists in a cutting-tool made by the formation on the curved surface of a cylindrical or circular body of the exact counterpart or reverse of the object to be wrought, and by the removal of a portion of this body so that there shall be a mouth or space for chips, and so that a cutting-edge shall be formed square across the body or in a plane which intersects the axis of the body in the direction of its length, said tool being provided with any suitable means for presenting it properly to the work to be performed, and for adjusting it properly to the work as it is worn away by sharpening.

Referring to the drawings, Figure 1 is a plan, and Fig. 2 an elevation, embodying my invention.

A is a circular body, the curved surface of which is formed so that the outer boundary of a section taken in a radial plane shall be the counterpart of the boundary-line of objects which it is desired to produce under the action of the tool. A section of the body of the tool is cut away, as seen most clearly in Fig. 2 at *b c d*, this opening affording room for the chips to clear themselves from the tool; and the only care needed in cutting this portion away to form the cutting-edge *d d'* is required to leave entire length of the irregular line *d d'* substantially in the same radial plane, beyond which the rest of the surface bounded by *c c' d d'* may have any form desired—such, for example, as shown by the dotted lines seen in Fig. 2—though generally I prefer to have the entire surface *c c' d d'* in or about in a radial plane. Successive sharpenings of the tool are indicated by the red lines, (shown in Fig. 2,) illustrating how the tool is worn away thereby.

Of course the material of the tool may be varied for various uses, though it will ordinarily be made of steel, at least enough of it to include the entire curved surface, of which the line *d d'* is the generator.

As the outline of the cutting-edges produced on or in this tool is obtained by the turning process, mechanicians will understand how cheaply, easily, and accurately the curved surface of the tool can be made.

I prefer to mount the tool for presentation to the work, and to hold it under the stress of cutting, as I have shown in the drawings. A central hole is formed through the body *a*, which is encompassed or mounted between two jaws, *f*, and a bolt or center pin, *g*, passes through both body and jaws, so that the body is pinched by and between the jaws by a screw and nut on the center pin. The jaws are open or terminate at one end, and at the other unite in a bar, *h*, which is adapted to be held in the tool-holder of a lathe or planer or other mechanicians' engine or tool.

The tool should be so mounted that for use in turning objects its center, its cutting-edge, and the center of the object to be turned, should be in or nearly in the same plane.

If the friction produced by clamping *a* between the jaws *f* is not sufficient to hold *a* under the stress produced in the cutting operation, then other and additional means for holding may be employed such—for example, as the insertion of a pin through one or both jaws into *a*. Of course, when the tool is sharpened, it must be readjusted by turning it on the center pin, so as to bring the new-formed edge to the proper location.

I claim—

The described cutting-tool when constructed and made so as to operate substantially as set forth.

In witness whereof I have hereunto set my hand and seal this 22d day of October, A. D. 1863.

ASA S. LIBBY. [L. S.]

In presence of—
J. D. WATSON,
A. A. BALCH.