W. S. BROWER.

# Sharpening and Preserving the Bevel of Engravers' Tools.

No. 223,315. Patented Jan. 6, 1880.

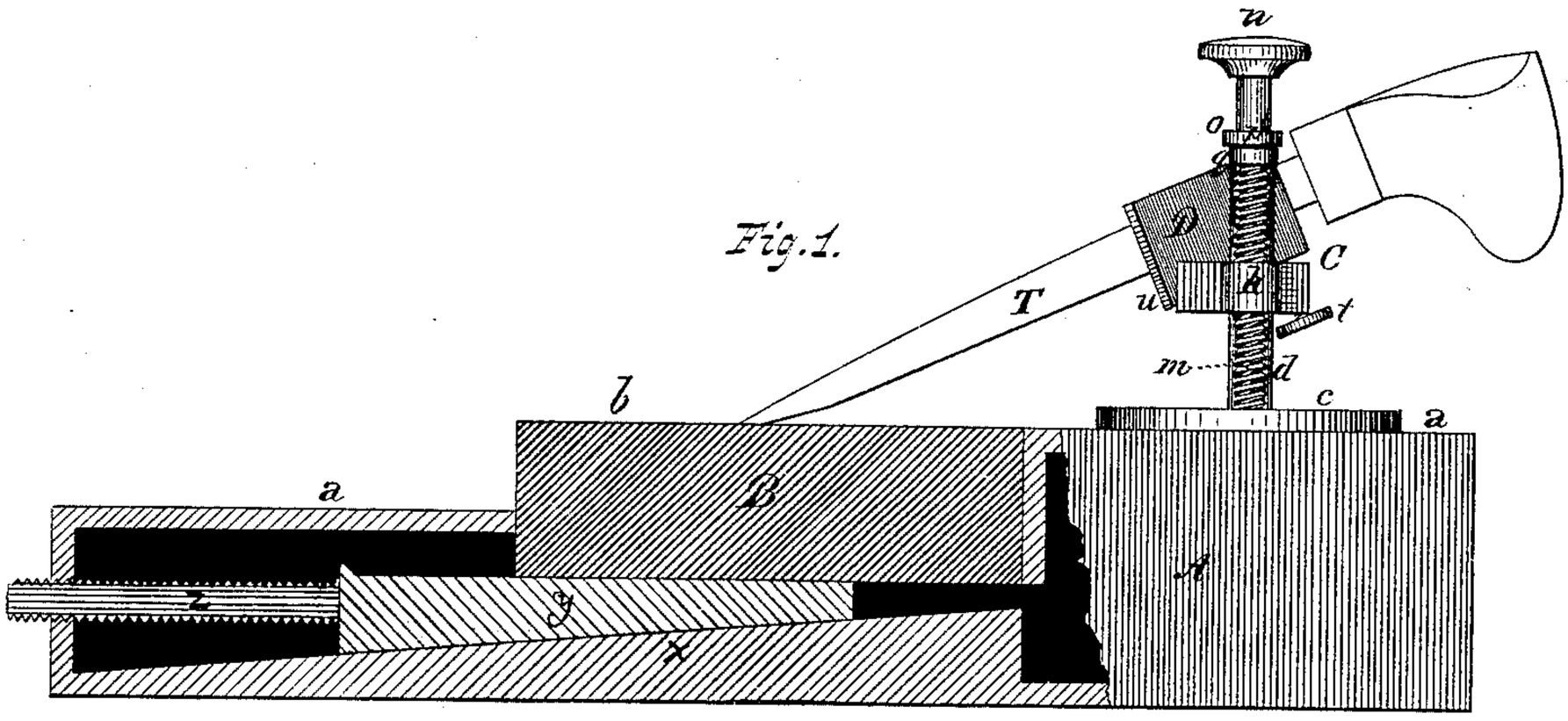


Fig. 1.

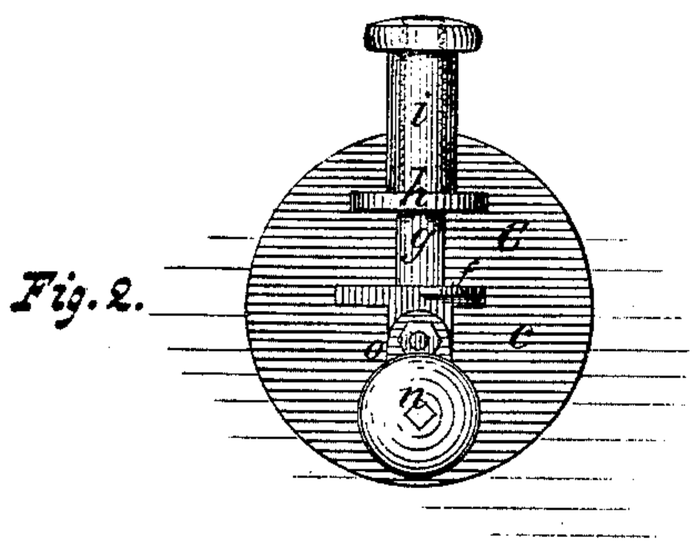


Fig. 2.

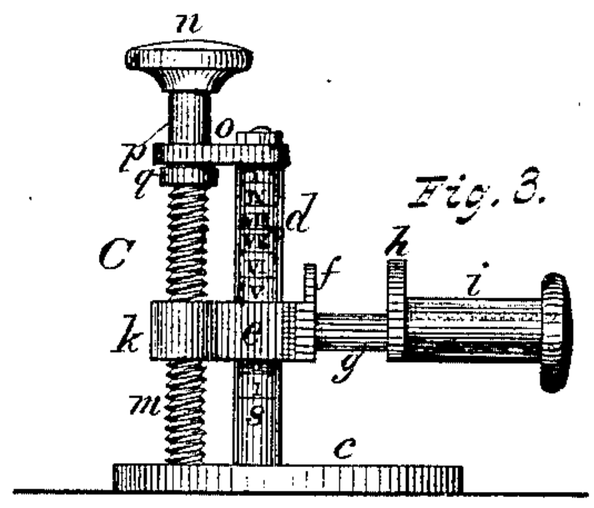


Fig. 3.

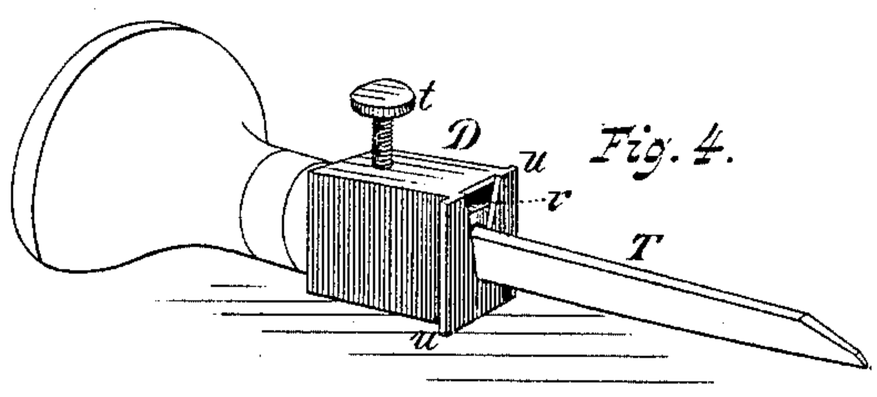


Fig. 4.

Witnesses. { Charles Selkirk. / Robert F. Hillson

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Inventor.
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Alex. Selkirk

# UNITED STATES PATENT OFFICE.

WALTER S. BROWER, OF ALBANY, NEW YORK.

## SHARPENING AND PRESERVING THE BEVELS OF ENGRAVERS' TOOLS.

SPECIFICATION forming part of Letters Patent No. 223,315, dated January 6, 1880.

Application filed December 2, 1879.

*To all whom it may concern:*

Be it known that I, WALTER S. BROWER, of the city of Albany, in the county of Albany and State of New York, have invented a new and useful device for Sharpening and Preserving the Bevels of Engravers' Tools, of which the following is a specification.

The invention relates to a tool-holder, a tool-carrier, and an oil-stone combined with a table or plane surface, on which the tool-carrier will be moved when the device is operated.

Heretofore engravers' tools have been sharpened while held by the hand of the operator, and the bevels could not be uniformly maintained or preserved the same at each sharpening. Hence the bevels would vary more or less after each sharpening from what they were before such sharpening had been effected.

The object of my invention is to provide a means by which engravers' tools may be held at any desired angle when being sharpened, so that each tool sharpened will have its original bevel fully preserved.

The invention consists in the following-described devices and the combination of parts more particularly set forth.

In the accompanying drawings, Figure 1 represents a side elevation of the several devices employed in the practice of my invention. Fig. 2 is a plan view of the tool-carrier. Fig. 3 is a front view of the tool-carrier, and Fig. 4 is a perspective view of a tool-holder with a tool in place therein.

In a bed, A, preferably made of metal, is the oil-stone B, having its upper surface, *b*, made uniformly level in its plane. Made with the said bed are one or more tables or plane surfaces, *a a*, also uniformly level in their entire extent. The plane of the upper surface, *b*, of the oil-stone is relatively parallel with the planes of the tables *a a*, as shown in Fig. 1. When two tables *a* are used, I make one of the tables to have its plane of face on the same horizontal line with the plane of the face *b* of the oil-stone, as shown, while in another table its face will be on a plane below the same; but if three or four table-surfaces are employed, I would arrange each on a different plane in relation to each other, so as to produce, with the bed A, a series of tables, in which each will be at a different elevation in relation to the plane upper surface, *b*, of the oil-stone.

C is a tool-carrier composed of a base-plate, *c*, having its lower side plane, and guide-post *d* secured to said base-plate, and standing at right angles with the lower side plane of the same, as shown in Fig. 3.

Attached to or made solid with sleeve *e*, working on guide-post *d*, are the clamping-jaw *f* and arm *g*, having its outer end portion provided with a screw-thread. (Shown by dotted lines in Figs. 2 and 3.)

Loosely fitting on arm *g* is the movable jaw *h*, and fitting on the screw-thread end of said arm is the screw-threaded sleeve *i*, provided with a finger-piece, by which the said sleeve may be operated. Made adjacent to the sleeve *e*, and connected thereto, is the screw-threaded sleeve *k*. Working in this screw-threaded sleeve *k* is the regulating-screw *m*, provided with the finger-piece *n*, for convenience in operating the said screw. The lower end of said regulating-screw enters into the base-piece *c*, and may be freely revolved in the same, while the upper end of said screw is yoked to the guide-post *d* by the tie-piece *o*, and is prevented from rising by collar *q*, secured to the shank *p* of the regulating-screw and bearing against the lower side of tie-piece, as shown in Fig. 3.

The face side of the guiding-post is provided with a scale, *s*, designated by characters, as shown in Fig. 3.

By operating the regulating-screw *m* in one direction the sleeve *e*, with its attached arm *g* and jaws *f* and *h*, will be elevated, and when operated in an opposite direction these parts will be lowered.

D, Fig. 4, is a tool-holder made with a rectangular form and having its ends provided with openings *r*, adapted to receive the tool T to be sharpened. *t* is a set-screw, working through one of the sides of the tool-holder, for holding the tool from shifting in the holder. Made with one end of the tool-holder are flanges *u*, which are intended to serve as guides for placing the tool-holder in position in the tool-carrier.

The manner in which the several parts of my invention operate is as follows: The tool T be-

ing passed through the tool-holder D, as shown in Fig. 4, is secured in place by the set-screw *t*. The tool-holder is then placed in position in the tool-carrier C, by placing it on an arm, *g*, between the jaws *f* and *h*, when it is clamped by screwing the screw-sleeve *i* against the movable jaw *h* and crowding the same against the tool-holder. The tool-carrier is then placed on one of the tables *a* of the oil-stone bed A, with the point of the tool on stone B, when the operator will revolve the regulating-screw *m*, to either elevate or lower the arm *g* and the clamped tool-holder, as may be required, until the beveled end of the tool to be sharpened will bear evenly and uniformly on the face *b* of said stone, when the operator will move the carrier over the face of the table in a reciprocating or other manner of movement, and at the same time, with his finger, bear on the forward portion of the tool to hold it down to the stone.

As the bevels of different tools vary, the scale on the guide-post will serve to indicate the degree of elevation to be given to the tool-holder in order to produce or preserve the bevel of each tool. When the greater angles of bevels are to be produced or preserved in sharpening, the tool-carrier is operated on the highest elevation of planes on table *a*, while, when the sharpest angles of bevels are to be produced or preserved, the tool-carrier is to be operated on the lower planes or tables *a*.

In Fig. 1 is illustrated a sectional elevation of a stone, B, provided with adjacent tables *a* and means for elevating or depressing the stone, that its face *b* may be elevated or lowered in relation to the planes of table or tables *a*, which means consist of inclined ways *x*, made with the bottom of a shell-bed and a sliding-way bed, *y*, on which the stone B rests, and a screw-stem, *z*, provided with a finger-piece (not shown) for forcing the said way-bed forward upon the inclined ways *x*. With this form of construction the stone B, when dressed on its face *b* and reduced in thickness, may be adjusted in relation to the planes of the tables *a* as may be required.

When the bed of the stone is not provided with devices for elevating said stone as it is reduced in thickness, I would at each facing effect the elevation of the stone by means of sheets of paper of a sufficient number, placed on the bottom of the bed on which the stone rests.

It will be readily seen that by means of this invention all the principal kinds of engravers' tools may be readily sharpened from thin beveled sides of cutting-edges, with the original relative bevel-incline they first had, and thereby the peculiar characteristics of each tool arising from the bevel of its cutting-edge will be preserved.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the stone B, having face *b*, of a bed provided with one or more tables or planes, *a*, adapted to receive a tool-carrier, for operation substantially as and for the purpose set forth.

2. The tool-carrier C, combining a base-piece, *c*, guiding-post *d*, a movable arm, *g*, carrying clamping-jaws, and a regulating-screw, *m*, all arranged for operation in the manner and for the purpose set forth.

3. The combination, with a vertical stationary post, *d*, of a tool-carrier and movable piece, *e*, provided with means for holding a tool-holder, and devices for elevating or lowering the same in relation to the bed *c* of an indicating-scale, *s*, made with said vertical stationary post *d*, substantially as and for the purpose set forth.

4. The tool-holder D, provided with guide-flanges *u* and set-screw *t*, and adapted to connect the tool T with the tool-carrier C, in the manner and for the purpose set forth.

5. The combination, with the tool-carrier C, of the tool-holder D, substantially as and for the purpose set forth.

6. The combination, with the stone B, having one or more tables, *a*, adjacent to said stone, with the line of its plane parallel with the line of the plane of said stone, of the tool-carrier C, adapted to be freely moved on the surface of said table or tables, substantially as and for the purpose set forth.

WALTER S. BROWER.

Witnesses:
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ALEX. SELKIRK.