

(Model.)

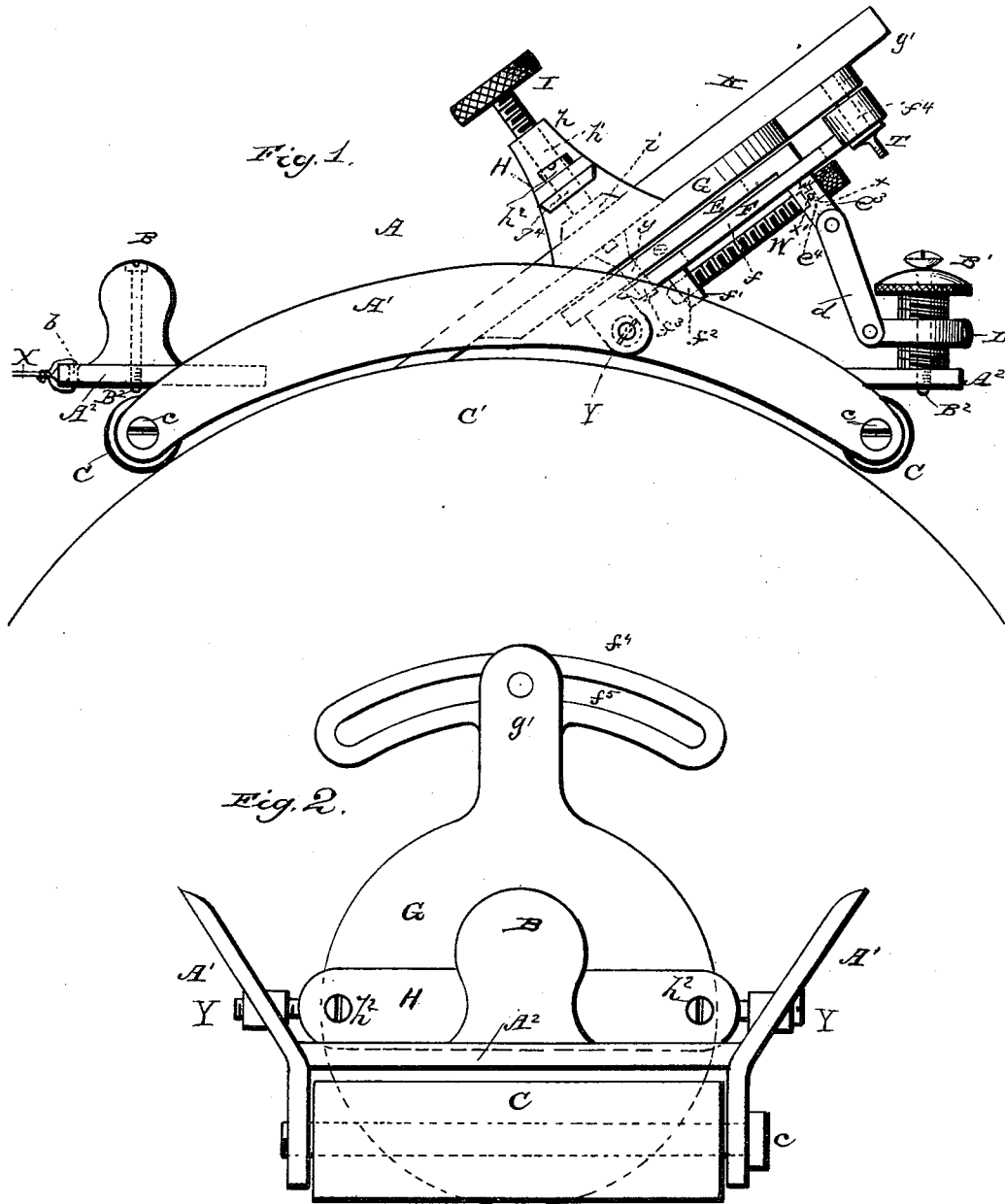
2 Sheets—Sheet 1.

G. A. LONG.

TOOL HOLDER FOR GRINDING.

No. 348,497.

Patented Aug. 31, 1886.



WITNESSES

E.H. Porter
R. L. Masi

INVENTOR

Geo. A. Long.
by Anderson & Smith,
his

ATTORNEYS

(Model.)

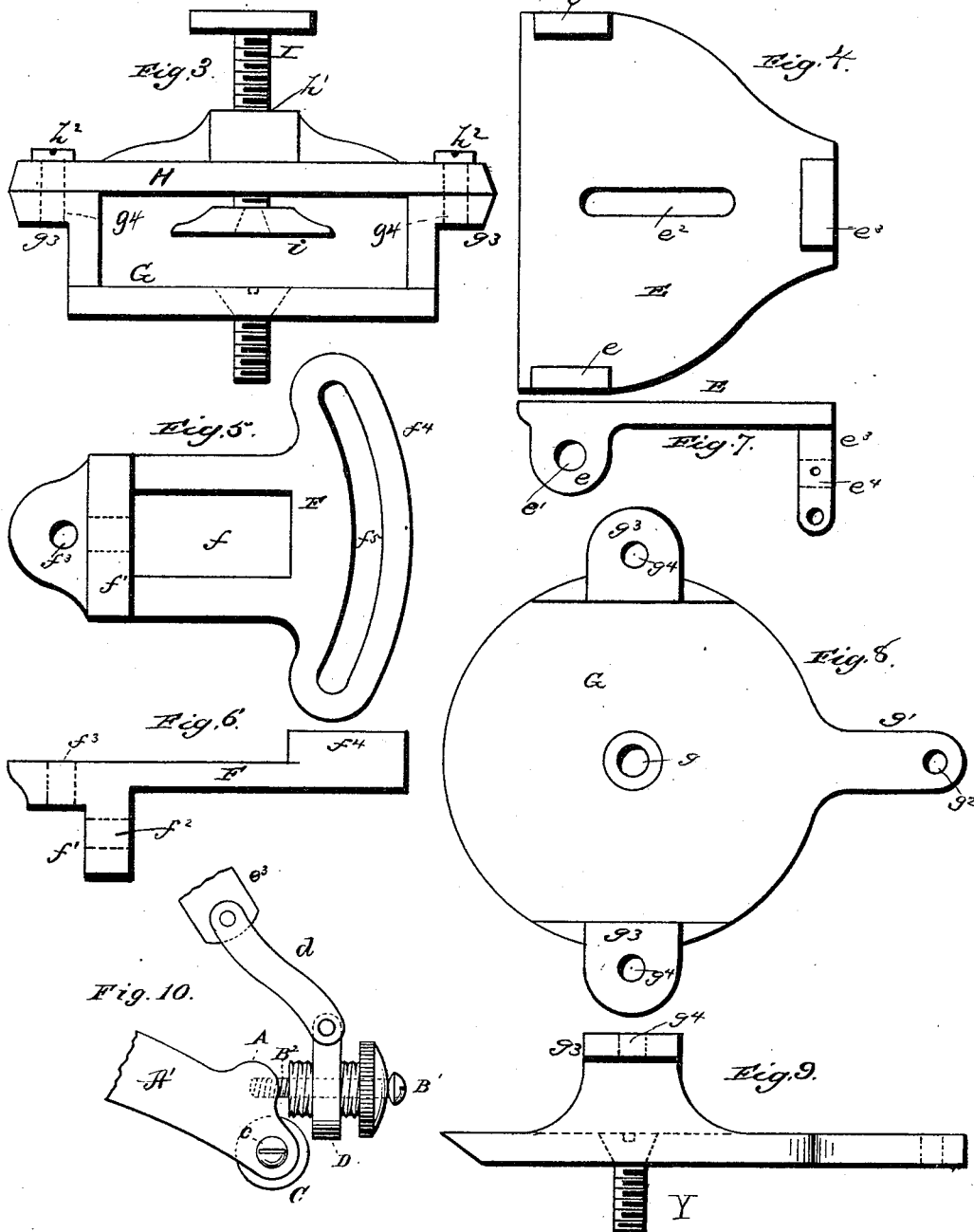
2 Sheets—Sheet 2.

G. A. LONG.

TOOL HOLDER FOR GRINDING.

No. 348,497.

Patented Aug. 31, 1886.



WITNESSES

E. H. Bates
R. C. Masi

INVENTOR

Geo A. Long
by Anderson Smith
his ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE A. LONG, OF NORTHFIELD, MASSACHUSETTS.

TOOL-HOLDER FOR GRINDING.

SPECIFICATION forming part of Letters Patent No. 348,497, dated August 31, 1886.

Application filed April 27, 1885. Serial No. 163,613. (Model.)

To all whom it may concern:

Be it known that I, GEORGE A. LONG, a citizen of the United States, residing at Northfield, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Tool-Holders for Grinding; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view. Fig. 2 is an end view. Figs. 3, 4, 5, 6, 7, 8, 9, and 10 are details.

This invention relates to improvements in holders for tools while grinding the latter, its objects being to grind the tool quickly and truly to any desired bevel and with the least possible waste of steel.

The invention consists in the construction and novel arrangement of parts hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, A represents the frame of the device, composed of the two similar side strips, A' A', made on similar arcs, preferably of a circle, and the two similar transverse plates A² A², connecting the strips A' near each end. The two strips A' are parallel below their central longitudinal lines, but diverge or bend outward above the same to accommodate the intervening mechanism.

B B' are handles standing centrally from the plates A², to which they are secured by the screws B² B². The front plate A² is provided with an opening, b, into which is secured one end of a cord or wire, X, which connects the device to some firm support and takes the back-strain off the device while grinding.

C C are similar rollers pivoted between the ends of the parallel portions of the strips A' by means of the screws c c. The said rollers may be of uncovered metal or covered with any suitable material, such as rubber.

C' is a grindstone or emery-wheel, which turns under and against the rollers C when the device is in operation.

The front handle, B, has its outer surface smooth; but the outer surface of the rear han-

dle, B', is threaded, and has upon it a nut, D, which travels up or down as the handle is turned in opposite directions upon the shank of its securing-screw B².

d is a link-bar with its lower end pivoted to the nut and its upper end pivoted to an upwardly-adjustable plate, hereinafter described. The link-bar keeps the nut from turning with the handle B'.

E is a plate provided at its front corners with the opposite lugs e e, through openings e' e' in which passes the transverse screw Y, that pivots the plate between the upper diverging portions of the strips A' to the rear of the center of the device.

e² is a central longitudinal slot in the plate E, and e³ is a projection depending centrally from the rear edge of the same and provided with the opening e⁴. The lower end of the projection e³ pivots to the upper end of the link-bar d, so that the plates E F G are adjusted to different inclinations to the frame by means of said link-bar and nut D.

F is a plate lying under and against the plate E, and provided with the central longitudinal rectangular slot, f, through which passes the depending projection e³ of the plate E.

f' is a projection depending from the plate F near its front end, and provided with the threaded opening f².

W is a screw turning in the unthreaded opening e⁴ of the projection e³ and engaging in the threaded opening f² of the projection f'. By means of the screw W the plate F is made to travel longitudinally on the plate E, and is prevented from slipping longitudinally thereon by the circumferential groove x on the shank of the screw and the pin x', which passes through an opening in the projection e³ and enters said groove.

f³ is a threaded opening through the plate F on its central line in front of the projection f', and f⁴ is the laterally-extended and upwardly-projecting rear end of said plate, provided with the slot f⁵, made on the arc of a circle concentric with the opening f³. The opening f³ and slot f⁵ serve purposes hereinafter explained.

G is a circular plate, which lies above and against the plate E, and has passing through its central unthreaded opening, g, the shank of the screw y, which passes through the slot

e^2 of the plate E, screws into the opening f^3 of the plate F, and serves as a pivot for the plate G to turn on the plate E.

g' is a rearward extension from the plate G, having near its end the threaded opening g^2 , which overlies the slot f^5 , and T is a set-screw passing through said slot and engaging in said opening, so as to fix the extension g' over any point of the slot.

g^3 g^2 are similar projections, standing from the plate G at points ninety degrees on each side of the extension g' . The ends of said projections are bent outward at right angles, and provided with the threaded openings g^4 g^4 , for the purpose hereinafter explained.

H is a transverse strip provided on its upper surface with the central threaded opening, h' , and h^2 h^2 are screws passing through openings in the ends of said strip, screwing into the openings g^4 and securing the strip to the plate G.

I is a screw engaging in the opening h' , and having fixed to its lower end the clamping-disk i .

K is a tool clamped between the upper surface of the plate G and the disk i , with its edge in proximity to the grindstone or emery-wheel C'.

It is evident from the foregoing description that the plates F and G, and consequently the tool, have their rear ends elevated with the plate E, thus adjusting the tool to have a bevel of any desired angle ground at right angles across its edge. To grind a standing bevel the plate G is rotated on the plate E and fixed in position by the screw T. The tool secured between the plate G and the bar i is fed down on the stone by the screw W. By the above means a bevel of any angle and any inclination across the tool can be quickly and truly ground, even by an unskilled person or one whose sight is defective.

Having thus described my invention, what I claim is—

1. In a device to hold tools while being ground, the combination, with an arc-shaped frame provided with transverse endrollers and a plate pivoted thereto at its front end and having its rear end adjustable upward and downward, of a tool-holder arranged both to rotate and slide longitudinally in said plate, substantially as specified.

2. In a device to hold tools while being ground, the combination, with an arc-shaped frame provided with transverse end rollers

and a plate pivoted thereto at its front end and having its rear end adjustable upward and downward, of a plate to slide longitudinally below and against said plate, and a tool-holder lying upon the plate and connected to the sliding piece by a pivot which passes through the center of its base and through a longitudinal slot in the adjustable plate, substantially as specified.

3. In a device to hold tools while being ground, the combination, with the frame A, provided with the end rollers, C, and the handle B', turning freely on the shank of the screw B², and having its exterior surface threaded, of the plate E, pivoted to the frame by the screw Y, and provided with the depending projection e^2 , the connecting-links d , and the nut D, substantially as specified.

4. The combination, with the frame A and the plate E, pivoted thereon by the screw Y, and provided with the projection e^2 , of the sliding piece F, provided with the projection f' , the screw W, and pin x' , entering the groove w on said screw, substantially as specified.

5. The combination, with the frame A and the plate E, pivoted thereto by the screw Y, of the piece F, made to travel longitudinally below and against said plate by the screw W, and a tool-holder connected to the piece F by a pivot which passes through the center of the base of the tool-holder and through the slot e^2 of the plate E, substantially as specified.

6. The combination, with the frame A and the plate E, pivoted thereon by the screw Y, of the longitudinally-sliding piece F, provided with the slot f^5 , and a tool-holder rotating on the plate E and provided with the extension g' , adapted to be held at any point above and against the slot f^5 by the set-screw T, substantially as specified.

7. In a device to hold tools while being ground, the combination, with the plate E, pivoted by the screw Y to the frame A, of a tool-holder rotating on said plate and composed of the base-plate G, transverse strip H, and screw I, provided with the clamping-disk i , substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. LONG.

Witnesses:

LEWIS T. WEBSTER,

CHARLES H. WEBSTER.