

M. S. CURTISS.  
Tool-Holder for Grindstone.

No. 213,496.

Patented Mar. 25, 1879.

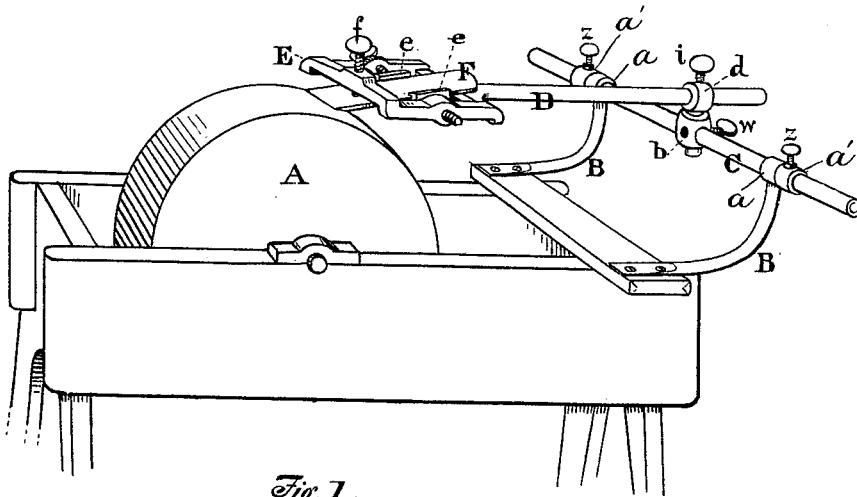


Fig. 1.

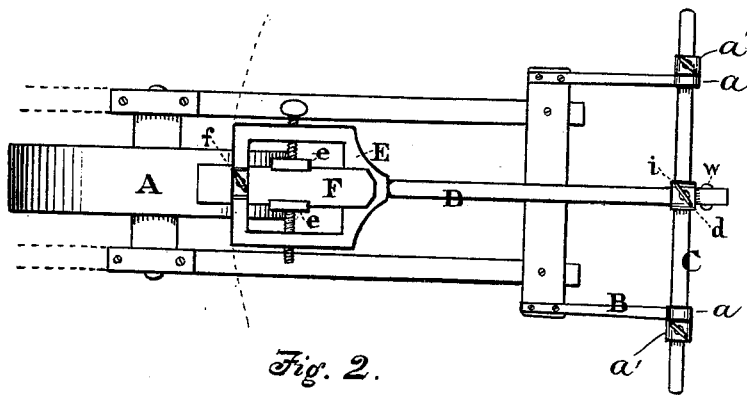


Fig. 2.

Witnesses  
Luther Shurlow  
Lyndhurst Shurlow

Inventor  
Marshall S. Curtiss  
by C. Shurlow, atty in fact

# UNITED STATES PATENT OFFICE.

MARSHALL S. CURTISS, OF BRADFORD, ILLINOIS, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO JAS. B. DOYLE AND HARMON PHENIX, OF SAME PLACE.

## IMPROVEMENT IN TOOL-HOLDERS FOR GRINDSTONES.

Specification forming part of Letters Patent No. **213,496**, dated March 25, 1879; application filed January 14, 1879.

*To all whom it may concern:*

Be it known that I, MARSHALL S. CURTISS, of Bradford, in the county of Stark, in the State of Illinois, have invented an Improvement in Devices for Holding Tools to the Grindstone, &c., during Process of Grinding; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a perspective view; Fig. 2, a plan view.

This invention consists in a series of devices by which all required positions of any tool requiring to be ground can be had and maintained until properly ground or sharpened. Said devices embrace means for giving such tool lateral motion across the stone, rocking motion around the axis of the tool, required in sharpening gouges, &c., and angular adjustment with the horizon or stone. To do this I employ a small frame or block, in which the tool requiring grinding is set and adjusted at the required angle with the grindstone by means of lateral trunnions or adjustable swivel-clamps to clasp the tool laterally, in combination with a vertical screw or gage to set the same at the required angle in producing the "slope" of the desired edge. This holder proper has a stem fixed in a sliding pivot or universal joint, by which the holder can be extended farther over the stone, or give the tool a sliding lateral motion across the stone to and fro, or confer a motion upon the stone in the arc of a circle in producing the curved edge of certain tools—as, for instance, a jack-plane bit or cutter, and also to produce a rocking motion of the holder to fit it for forming the curved edge of a gouge, &c.

The most convenient form of universal joint for said holder is formed by pivoting the end of its stem (at right angles to the axle of the grindstone) in a pivot or turning block situated on a sliding bar set parallel with the axle of the grindstone, and adjustable longitudinally in a rest or arm or arms projecting from the grindstone frame or box in such a manner as to give the required lateral, vertical, and an-

gular motion, as well as the rocking and radial motion to the holder proper.

In the drawings, which represent one of the forms in which I construct this tool-holder, A represents the grindstone or polishing-wheel; B B, two fixed bearings, rising from the grindstone box or frame, ending in journals or eyes *a* to admit the round bar C, set parallel with the axle of the stone A, and allow said bar to slide longitudinally, and be set, if required, by proper screws *z*, to move the stem D laterally. Said bar has at its center a socket or block, *b*, to admit a movable or pivoted socket or eye, *d*, which, in turn, admits the stem D of the tool-holder proper, E, holding the latter, when necessary, by means of a set-screw, *i*, and in such a manner that the stem D can be made to slide longitudinally, rock on its axis, or be moved as a radius about the said pivot *d* as a center. Said bar C is further provided with adjustable blocks *a' a'* at either end, with set-screws therein, to limit the longitudinal motion of the said bar in sliding the tool F across the stone A, the rod D then being rigid in its pivotal block. E is the tool-holder, at the outer extremity of the stem D, consisting of a frame having lateral clamps or screw-jaws *e e*, provided with grooves or hollows or similar detents to admit the edge of the tool intended to be ground, but allow the latter to be oscillated or adjusted vertically at required angles upon the stone by means of a screw, *f*, at the head of the frame E. F is the tool. To insert a draw-knife in the frame the jaws would necessarily have to be drawn farther apart.

The operation of this device is as follows: The tool F can be adjusted at required inclinations upon the stone A by means of the screw *f*. The stem D can be set by means of screw *i*, block *d*, and block *b* on bar C, and the blocks *a' a'* on the latter, so as to be rigid or fixed, except for an upward motion from the stone A. By loosening the screw of the socket *b* said stem can be moved radially or in the arc of a circle to give the curved edge to a jack-plane bit. To obtain a straight edge in grinding the tool, the stem D is made rigid upon the bar C, leaving the latter at liberty to

slide longitudinally, so as to pass the tool back and forth across the stone. To obtain a concave edge (as of a razor or draw-knife) the stem D is set by means of screw *i*, and the stone confers its own curve on the hollow of the tool. To grind a gouge the screw *i* of the block *d* is loosened, so as to allow a manipulator to rock or turn the stem D on its axis back and forth. Beveled-edge tools are ground by setting the frame E and stem D sidewise or at an angle with the axle of the stone by means of screw *i*. The angle (sectional) of the cutting-edge of the tool is determined by the extent of the protrusion of the rod D and frame E over the grindstone.

What I claim as my invention is—

1. A tool-holding clamp-rod, D, adjustably sliding longitudinally in a socket-block pivoted upon a cross-bar, C, the latter movable on its axis, and adjustable longitudinally in bearings parallel with the axle of a grinding-stone or polishing-wheel, substantially as and for the purposes described.

2. A tool-holding apparatus or attachment to grindstones, &c., having lateral screw-jaws or detents *e*, adjusting-screw *f*, rod D, adjustably pivoted on a bar, C, which slides longitudinally in bearings or supports B B, and parallel with the axle of the grindstone, substantially as and for the purposes described.

3. The clamp-head E, with screw-jaws *e e* or clamps, stem D, sliding in the pivoted block or eye *d*, said block socketed in or upon the longitudinally-sliding bar C, the latter adjustable in the supports B by means of set-blocks *a' a'*, substantially as and for the purposes described.

4. The clamping-head E, with lateral jaws or detents *e e*, and adjusting-screw *f* and pivoted stem D, substantially as and for the purposes described.

5. The stem D of the clamping-head E, sliding adjustably in the pivotal block *d*, socketed upon or in the bar C, substantially as and for the purposes described.

6. The sliding bar C, adjustable by means of blocks *a' a'* in the bearings B B, and having also a medial socket-block, *b*, to receive the pivot-block *d*, substantially as and for the purposes described.

In testimony that I claim the foregoing tool-holder for holding tools in process of grinding, I have hereunto set my hand this 7th day of January, A. D. 1879.

MARSHALL S. CURTISS.

Witnesses:

JAMES M. MORSE,  
H. W. WELLS.