

(No Model.)

E. F. TERNAN.
MACHINE FOR GRINDING TOOLS.

No. 467,961.

Patented Feb. 2, 1892.

Fig. 1.

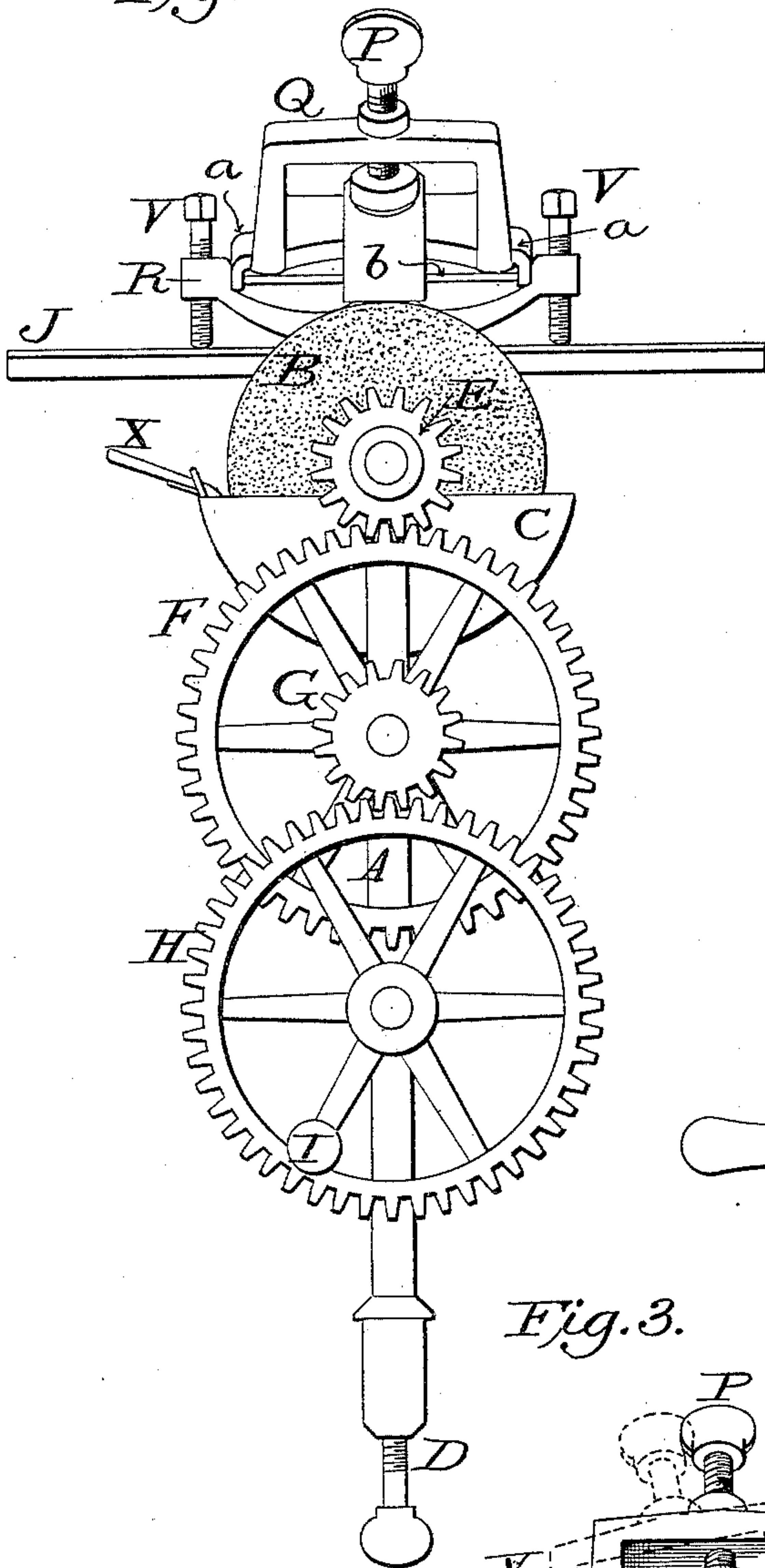


Fig. 2.

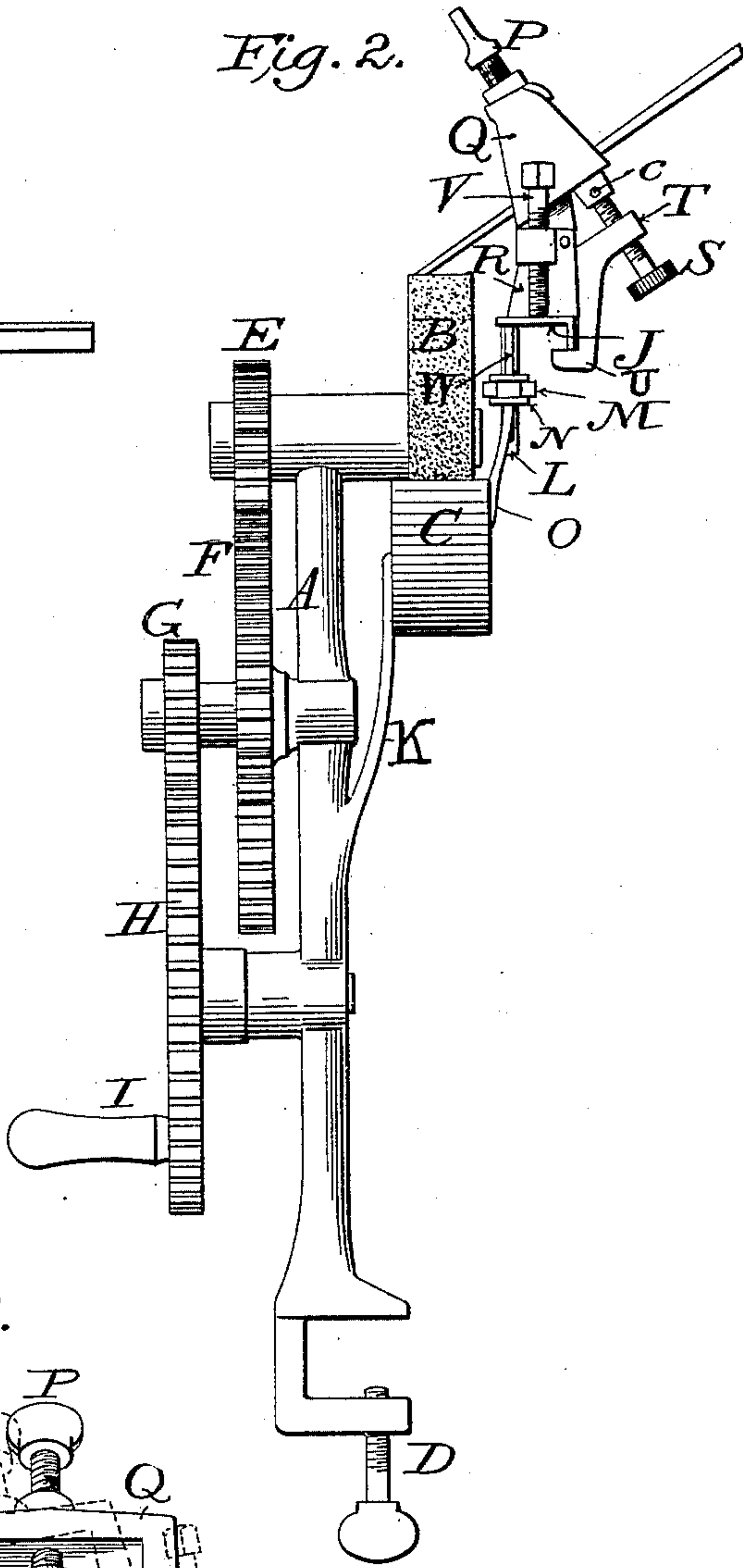
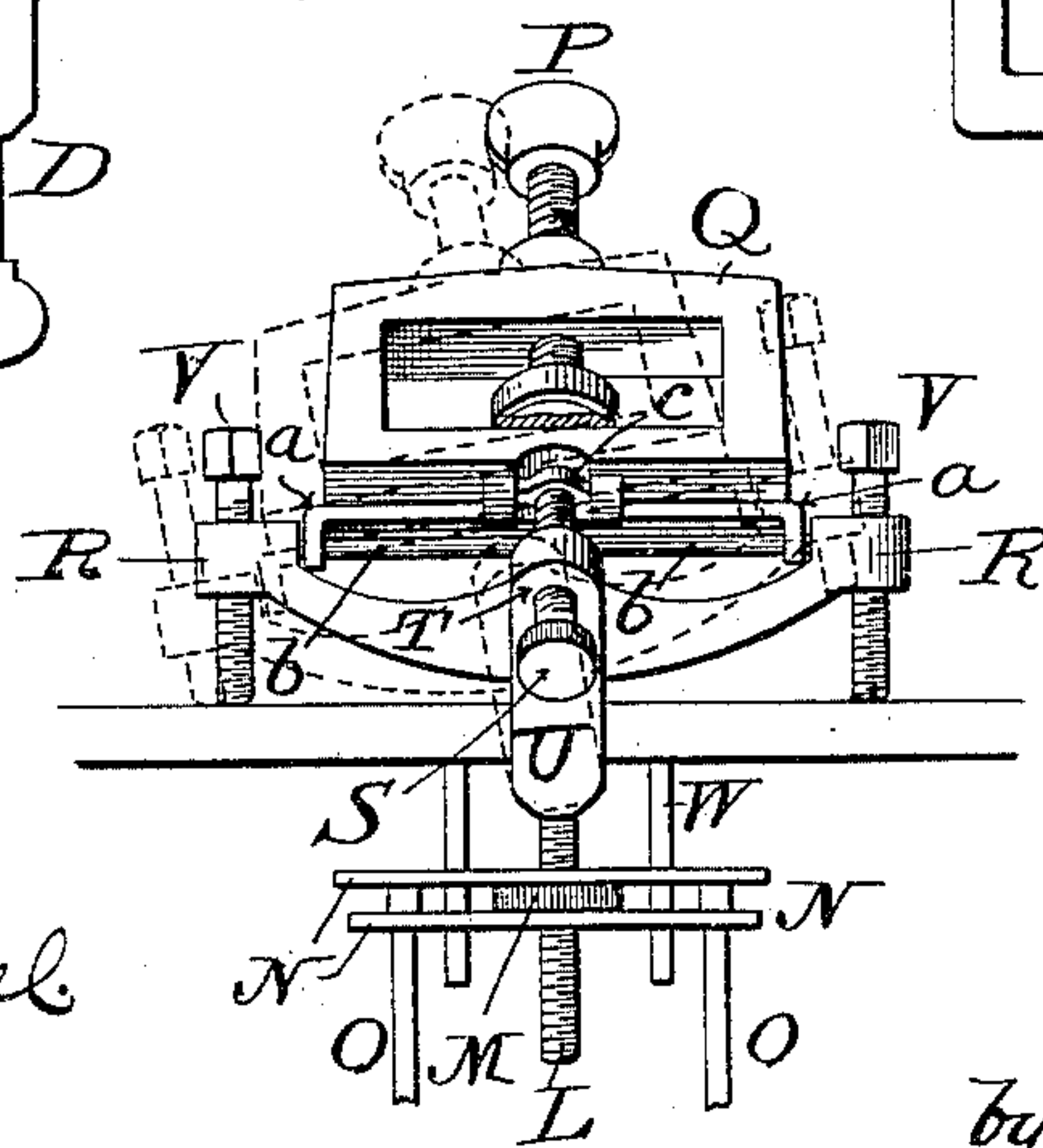


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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MACHINE FOR GRINDING TOOLS.

SPECIFICATION forming part of Letters Patent No. 467,961, dated February 2, 1892.

Application filed September 4, 1891. Serial No. 404,746. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. TERNAN, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Machines for Grinding Tools, of which the following is a specification.

My invention relates to machines for grinding tools; and it consists in various features, details, and combinations hereinafter set forth and claimed.

In the drawings, Figure 1 is a front face view of my machine; Fig. 2, a side view, and Fig. 3 a rear face view of the tool-holding devices.

A is a standard or upright, which carries at its upper end the grinder B and its pan C and at its lower end means—such, for instance, as the thumb-screw D—for attaching the device as a whole to a work-bench, table, or other support. The shaft of the grinder carries a pinion E, which gears into the idler F, on the shaft of which is a smaller idler G, engaging the gear H. This gear H is provided with a crank or handle I, by which it may be turned, and it will be seen that when motion is imparted to the wheel H a high speed of rotation will be given to the grinder through the gears G, F, and E.

The pan C, above referred to, is supported by an arm or bracket K, secured to or formed upon the standard A, and carries a horizontal bar or rail J, which extends at right angles to the axis of the grinder. To provide for vertical adjustment of this bar or rail J, the latter is provided with a screw L, which passes through the thumb-nut M, clamped or held between two bars or plates N N, the said plates being carried at the upper ends of rods or arms O O, projecting from the pan C, as shown in Figs. 2 and 3. Rods or stems W, projecting from the under side of the rail and passing through the plates N N, serve to guide and steady the rail while being adjusted.

The tool to be ground is clamped by any suitable means—such, for instance, as a screw P—in the open frame Q, which latter is pivoted or journaled in a frame or block R, mounted upon the bar or rail J. A convenient mode of pivoting or journaling the frame Q to the block or frame R is shown in Fig. 3, upon reference to which it will be seen that

the frame Q is provided with downwardly-projecting ears or perforated lugs *a*, through which passes a rod *b*, secured to the ends of block or frame Q. In order to adjust the frame or govern its oscillation, I employ a screw S, which, passing through a threaded lug T of frame R, extends upward and has its end swiveled in a rocking block *c* on the under side of the frame Q. By turning the screw in one or the other direction the frame Q will be rocked or tipped and held in its adjusted positions.

The block or frame R is provided at its middle with a bent arm U to engage the under side of the bar or rail J and with screws V V at its ends to bear upon the upper face of the bar and draw the said arm firmly up against the under side of the bar, and thereby hold the device in place and prevent its tipping. Of course, while the screws bear with force enough to prevent the frame from tipping, they do not prevent the said frame from being moved lengthwise of the bar or rail in grinding straight-edge tools.

The lower face of the main body, or that portion of the frame R adapted to rest upon the upper face of the rail J, is curved longitudinally, as shown, so that the said frame and the attached frame Q may be rocked or tipped upon and with reference to the rail J, as shown in Fig. 3 by dotted lines, the screws V V in such case being withdrawn sufficiently to permit such rocking. The frames are thus rocked in grinding tools of curved form in cross-section, and in case the tool should be both pointed and curved, as is the case with some forms of gouges, the frames may be swung around slightly out of line with the rail, as well as being tipped or rocked thereon.

X indicates a leather scraper or doctor, which, being secured to the pan and bearing against the grinder, prevents the water or oil from being thrown off by the grinder.

The grinding-machine herein shown is cheap, simple in construction, and very compact, the removability of the tool-holding devices permitting it to be carried in the work-box.

Having thus described my invention, what I claim is—

1. In combination with the main frame having a bar or rail J, the grinder, means for im-

parting motion to the latter, and a tool-holder free to slide along the rail at right angles to the axis of the grinder in a plane parallel with the plane of rotation of the latter.

- 5 2. In combination with the main frame having a bar or rail J at right angles to the axis of the grinder, a grinding-wheel, means for imparting motion thereto, and a tool-holder located above the axis of the grinding-wheel,
10 movable along the rail or bar and capable of being rocked or oscillated thereon, said tool-holder comprising two parts Q and R, the part Q being journaled in the part R so as to swing toward and from the grinder.
- 15 3. In a tool-grinder, the combination, with the standard A, having the gears F, G, and H and the pan C, of the grinder-shaft provided with a grinder B and gear E, a rail J, and tool-holding devices mounted upon the rail.
- 20 4. In a tool-holder for grinding-machines,

the combination, with the frame R, of the frame Q, provided with a screw P and with perforated lugs *a* to receive a rod *b*, carried by the frame R.

5. In combination with frame R, having 25 threaded lug T, the frame Q, journaled in frame R and provided with rocking block *c*, and the screw S, passing through the lug and swiveled in the block.

6. In combination with frame Q, the frame 30 R, provided with a curved bearing-face adapted to bear on the rail J, the screws V V, and the arm U.

In witness whereof I hereunto set my hand in the presence of two witnesses.

EDWARD F. TERNAN.

Witnesses:

J. W. BATES,

LEWIS W. MENZIE.