(No Model.) 2 Sheets—Sheet 1.

# U. EBERHARDT.

## TOOL HOLDER.

No. 455,391. Patented July 7, 1891.

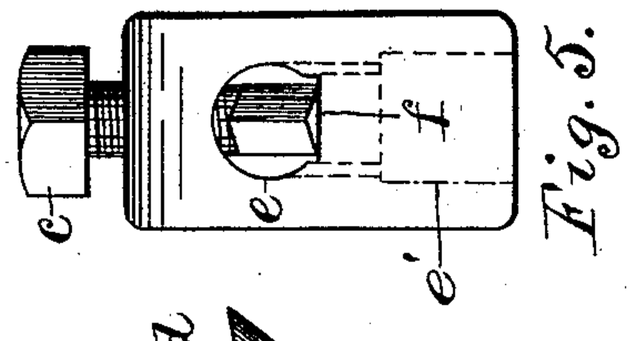


Fig. 5.

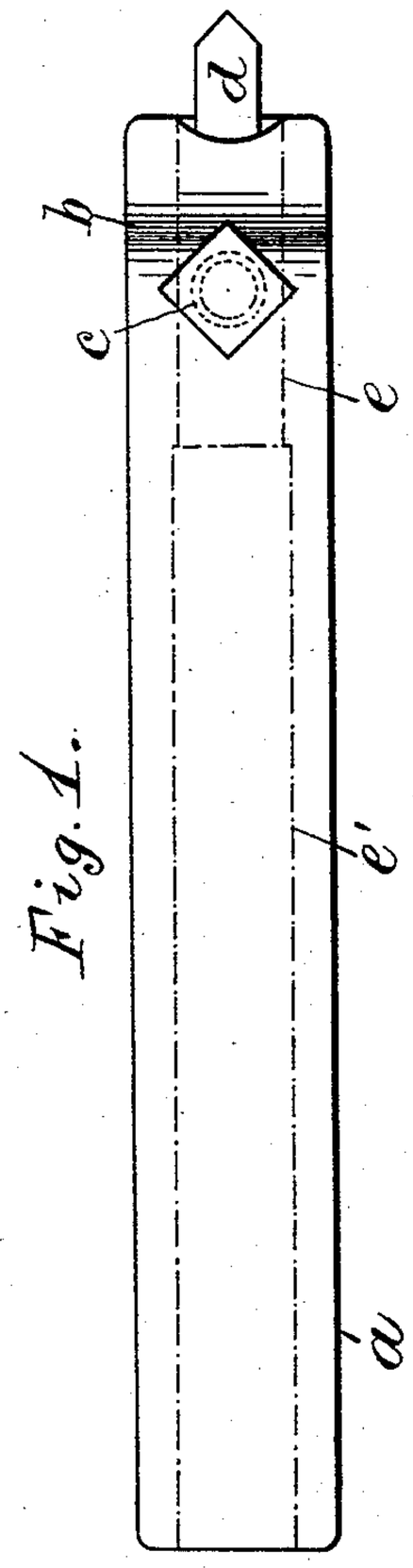


Fig. 1.

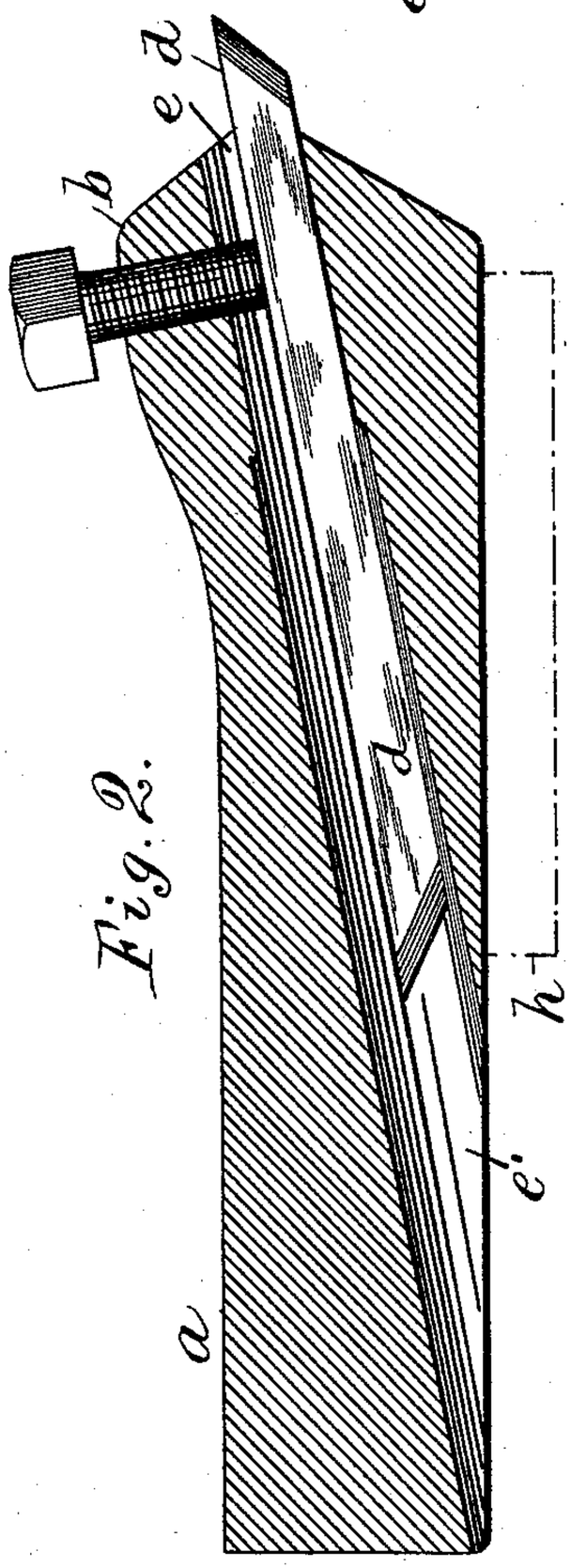


Fig. 2.

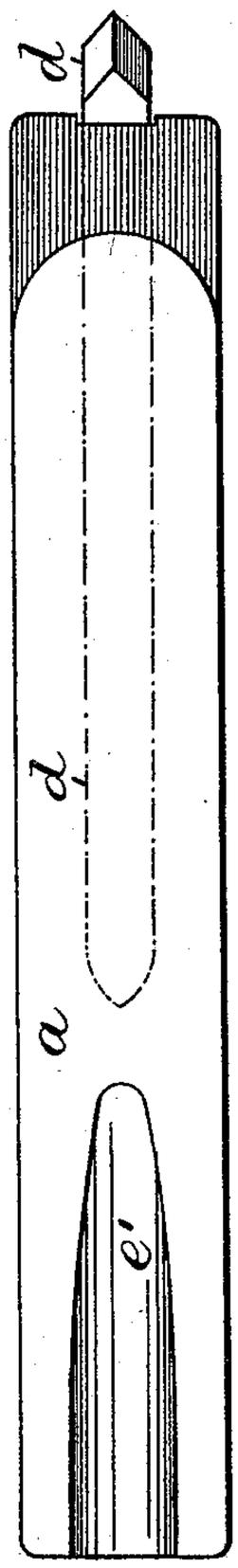


Fig. 3.

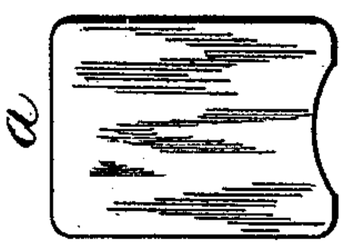


Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

# U. EBERHARDT.

## TOOL HOLDER.

No. 455,391. Patented July 7, 1891.

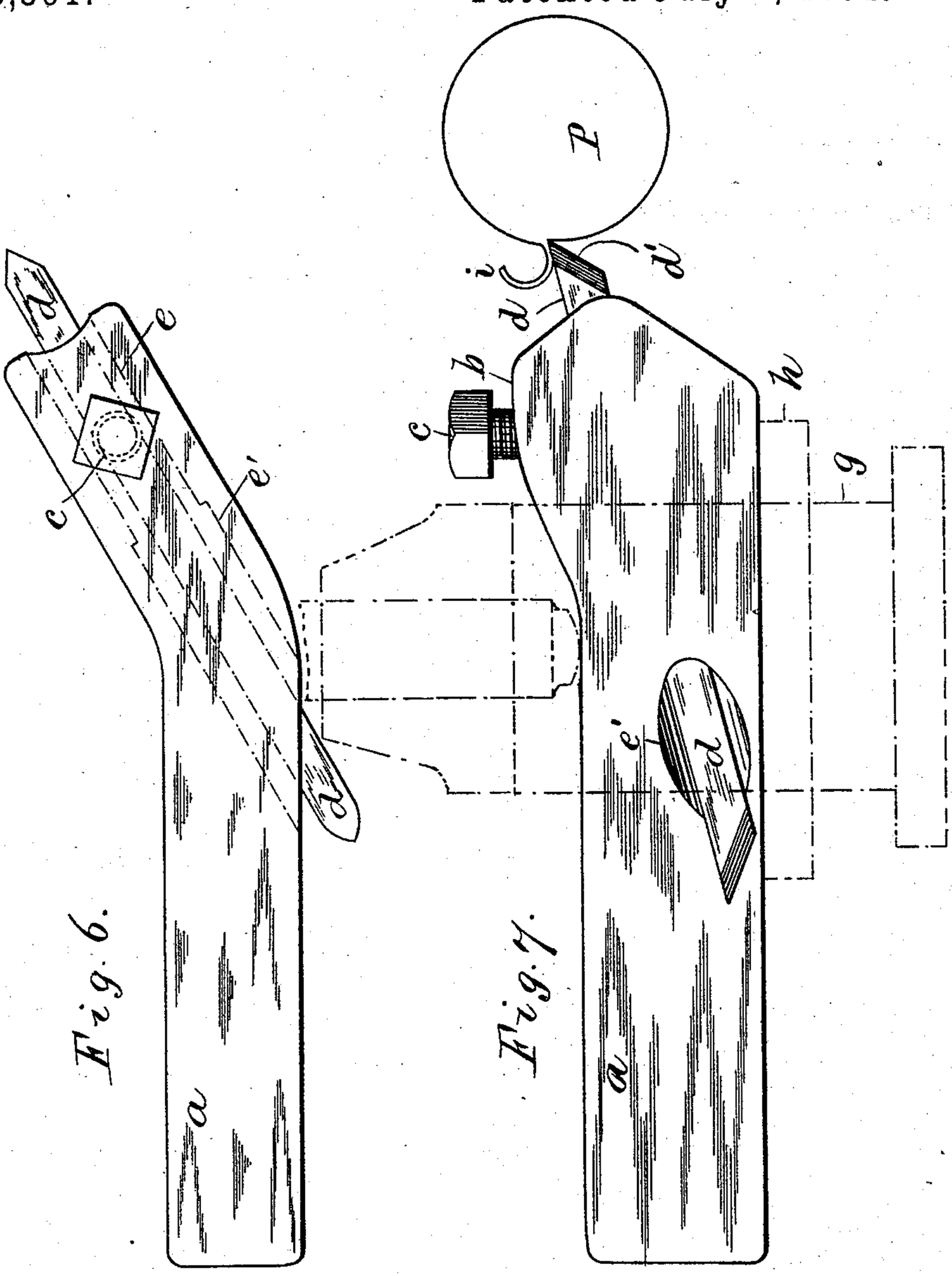


Fig. 6.

Fig. 7.

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F. C. Fischer.

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Crane & Mueller, Attys.

# UNITED STATES PATENT OFFICE.

ULRICH EBERHARDT, OF NEWARK, NEW JERSEY.

## TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 455,391, dated July 7, 1891.

Application filed September 22, 1890. Serial No. 365,697. (No model.)

*To all whom it may concern:*

Be it known that I, ULRICH EBERHARDT, a citizen of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Tool-Holders for Self-Hardening Tool-Bits, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This tool-holder consists in a bar having an inclined hole extended backward from the front end of the bar, with the rear end of the hole enlarged, and a flat seat formed upon the bottom of the hole at the front end, with a set-screw inserted through the top of the bar over such seat.

Tool-holders have been heretofore made with holes at various angles adapted to receive a bit and a set-screw inserted into the side of the hole to clamp the bit; but my invention differs from such holders in having the hole for a rectangular bit formed by first drilling the hole lengthwise in the bar; then by a second drilling operation enlarging the rear part of the hole, and finally flattening the bottom of the hole at the front end. The set-screw being inserted opposite the flattened seat presses the bit exclusively against such seat, and if the bit be warped or twisted the set-screw is less liable to break it under such conditions than if it rested upon the bottom of the hole throughout its entire length. The enlargement of the hole at its rear end operates not only to clear the corners of the rectangular bit, but saves a great expense in obviating the flattening of the hole throughout its entire length to admit the bit.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a plan, Fig. 2 a longitudinal section, Fig. 3 a bottom view, Fig. 4 a view at the rear end, and Fig. 5 a view at the front end, of the "tool bar or holder." Fig. 6 is a plan, and Fig. 7 a side elevation, of holder for a "side tool," with a tool-post and collar indicated in dotted lines.

The holder is formed of a rectangular bar *a*, of cast-steel, of flat cross-section, with a boss *b* at its forward end to receive the set-screw *c*. The bit *d* is inserted in a hole *e*, drilled backward in the front end of the bar or holder *a*, with a downward inclination of twelve to fifteen degrees. The hole is enlarged at its rear end *e'* to permit the formation of a seat *f* beneath the set-screw *c*. Such seat is filed flat to fit square-bodied bits like those shown in the drawings. The enlargement of the hole in the rear of the seat obviates the flattening of the hole upon its bottom throughout the entire length, and thus greatly cheapens the construction. The enlargement of the hole at its rear end shortens the bearing opposite to the set-screw. The seat supports the bit where it projects from the hole *e* and for a short distance back of the set-screw *c* and supports the bit with less liability to break under the pressure of the screw than if no seat were provided.

In Figs. 6 and 7 is shown a holder adapted to present the tool at one side of the body, or of that part of the body which is sustained in the tool-post.

The tool-post is indicated by dotted lines *g* of the form frequently used in turning-lathes, with the collar *h*, upon which the tool-holder is clamped, and it will be obvious that my construction enables me to use a long tool-bit without interference of the tool-post or its collar. This is effected by forming the hole *e* at a suitable distance above the base of the holder to extend backward any desired degree without penetrating the bottom of the holder. Thus in Fig. 2 the collar *h* of a tool-post is indicated in dotted lines with its rear edge clear of the hole *e'*, so that the tool-bit may be extended from such hole without interference from the collar.

In Fig. 6 the bit is projected from the hole *e'* at one side, which would be admissible where the holder is fitted to a tool-post without a slot; but with a slotted tool-post the bit may be made short enough to avoid interference with the side of the slot.

In Fig. 7 the bit is shown applied to a work-piece P, with a chip *i* cut from the same by the point of the bit. In this figure the sloping upper side of the bit performs the same function as the backward bevel ground upon forged turning-tools, and for which purpose they require to be bent or set up at the cutting-edge.

My tool-holder may be constructed more

cheaply than one in which a long bit is fitted throughout its entire length to a rectangular socket.

I do not claim the mere clamping of a bit in a hole, but the construction for the holder described and claimed herein.

What I desire to secure and claim by Letters Patent is—

The tool-holder consisting in the bar *a*, provided with the hole *e*, extended backward in the front end of the bar at an angle of about fifteen degrees and provided with the enlargement *e'* at its rear end, a flat seat *f*, formed upon the bottom of the hole at its front end, and a set-screw *c*, inserted through the bar into the hole *e* opposite the seat *f*, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ULRICH EBERHARDT.

Witnesses:
THOS. S. CRANE,
FRED L. EBERHARDT.