(No Model.)

O. SANDTMAN.

GLAZIER'S DIAMOND.

No. 464,997. Patented Dec. 15, 1891.

Fig. 1.

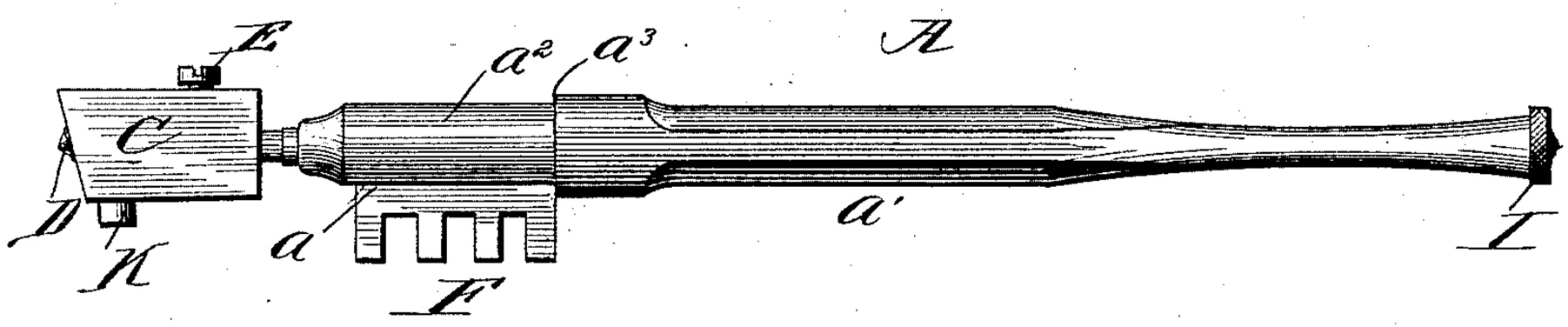


Fig. 2

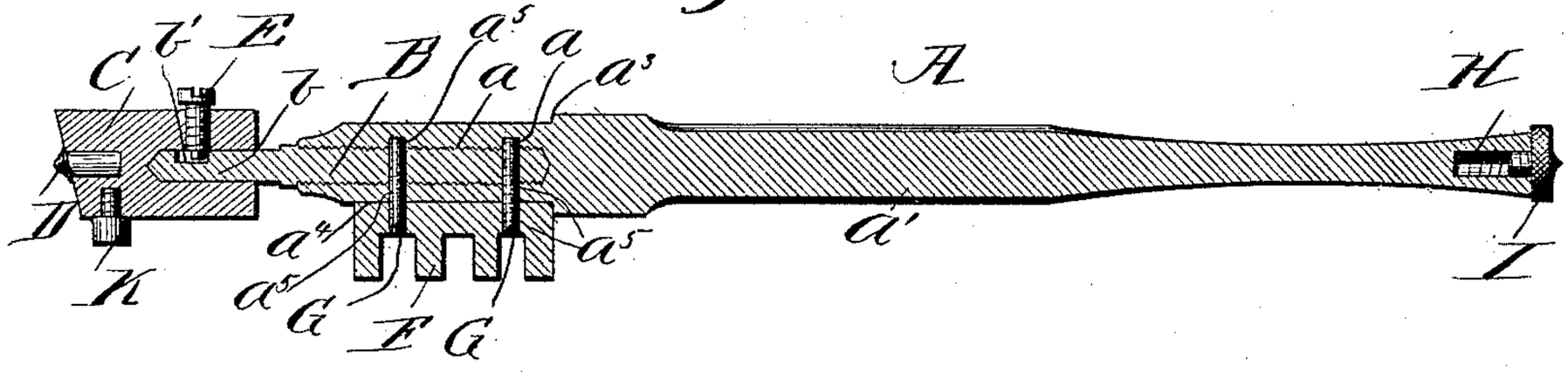


Fig. 3.

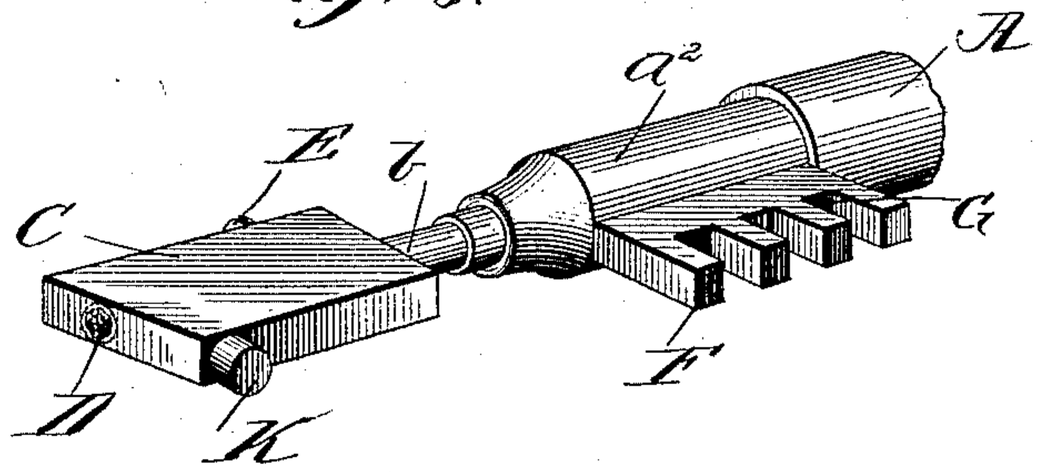
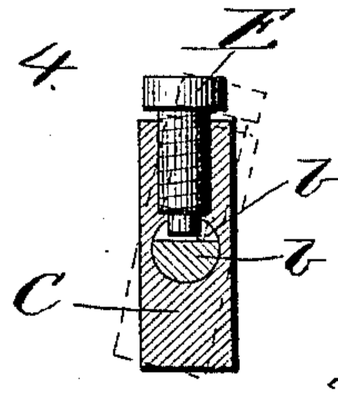


Fig. 4



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GLAZIER'S DIAMOND.

SPECIFICATION forming part of Letters Patent No. 464,997, dated December 15, 1891.

Application filed March 10, 1891. Serial No. 384,470. (No model.)

To all whom it may concern:

Be it known that I, OTTO SANDTMAN, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented a certain new and useful Improvement in Glaziers' Diamonds, of which the following is a specification.

My invention relates to glass-cutting tools of the kind known as "glaziers' diamonds" and involving a block or holder attached to a handle and provided with a diamond and a set of teeth arranged upon the handle and adapted for breaking off the glass after a cut has been made. Prior to my invention it has been usual to construct such tools with a wooden handle provided at one end with a metal sleeve or ferrule, and to arrange the block or holder on a pin or screw inserted into the end portion of the wooden handle which is surrounded by the ferrule, the plate or block which is notched to provide the teeth being under such arrangement secured upon the ferrule. In practice the wooden handle sometimes breaks at the point where it is reduced in diameter in conformity with the bore of the ferrule. The wooden handle is also weakened and rendered liable to split and break by reason of the insertion therein of the pin or screw for the diamond-holding block and the screws for holding in place the toothed plate. Furthermore, the wooden handle does not provide a durable bearing for the screws, and hence the screws for holding the block and toothed plate are liable to work loose under the many and severe strains to which the tool is subjected.

The object of my invention is to overcome the foregoing-mentioned objectionable features in glaziers' diamonds and to provide certain further matters of improvement, as hereinafter set forth.

In the accompanying drawings, Figure 1 represents a glazier's diamond embodying my invention. Fig. 2 is a longitudinal central section of the same. Fig. 3 represents the diamond-holding block and a portion of the handle. Fig. 4 is a cross-section through the diamond-holding block.

The handle A is formed from end to end of a single piece of metal, and is at one end provided with a longitudinally-arranged threaded bore a, into which a pin B, threaded along one end portion, is screwed. The unthreaded portion b of the pin which projects from one end of the metal handle carries the block or holder C, into which a diamond D is set. The holder C is retained upon the pin by a set-screw E, which has its bearing in the holder and which has its inner end arranged to extend into an oblong notch b' in the pin. The screw E can be tightened up against the pin so as to rigidly secure the holder thereon, or it can be adjusted so as to permit a certain extent of end and rotary play on the part of the holder. The portion a' of the handle is adapted to be held between the fingers of the operator, while its cylindric end portion a^2 is somewhat reduced in diameter, so as to provide the handle with an annular shoulder a^3. This cylindric end portion a^2 of the holder is flattened along one side, as at a^4, or otherwise suitably shaped to provide a seat or bearing for the toothed plate F, which is held upon said seat by screws G. The screws G pass through the plate at points between its teeth and engage in threaded bearings a^5, formed in the solid portion of the metal handle. These bearings a^5 extend diametrically through a considerable portion of the metal handle and are interrupted or separated into two portions by the bore for the threaded pin B, through which holes are drilled, so as to allow the screws G to pass, and thereby engage in bearings at opposite sides of the bore in the metal handle. The metal end portion a^2 of the handle affords therefore a solid unyielding seat for the toothed plate and provides durable metal bearings for all of the screws. No danger of breakage is involved, and hence a durable tool is provided. The toothed plate is at one end set up against the annular shoulder a^3, which affords a solid abutment against end strain on the toothed plate. In one end of the holder I preferably form a socket H and close the same by a screw-cap I. This socket serves as a safe and convenient receptacle for the diamond should the latter become detached from its holder.

In glass-cutting operations it is necessary to tap the glass with the tool, and in tools as ordinarily made this is done by striking the holder upon the glass. Experience shows

that in time a corner of the diamond-holder as more commonly constructed becomes worn and crushed out of shape, thus impairing the efficiency of the oblique end of the holder. To avoid such objectionable features I provide the holder with a small hammer-block K, which can be formed with or secured to the holder. This hammer-block is, however, preferably made separate from the diamond-holder and formed of hardened steel, so as to stand wear.

What I claim as my invention is—

1. As an improvement in glaziers' diamonds, the metal handle A, formed in one piece from end to end and having its solid metal end portion a^2 provided with a longitudinal bore, forming a bearing, in which a pin carrying the diamond-holder is held, and an external seat or bearing whereon the toothed plate is held by screws engaging in threaded bearings formed in said solid metal end portion of the handle, substantially as and for the purpose described.

2. A glazier's diamond comprising the handle A, composed of a single piece of metal and formed with an end portion a^2, having a threaded bore a, a flattened side portion a^4, and threaded bearings a^5, and an annular shoulder between the two handle portions a' and a^2, a threaded pin carrying the diamond-holder and held within the threaded bore a, and a toothed plate held upon the flattened side portion a^4 by screws engaging in the bearings a^5 in the solid metal end portion a^2 of the handle, as described.

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