No. 682,966. Patented Sept. 17, 1901.

J. W. TESTER.

GLASS CUTTER.

(Application filed June 17, 1901.)

(No Model.)

Fig. 1.

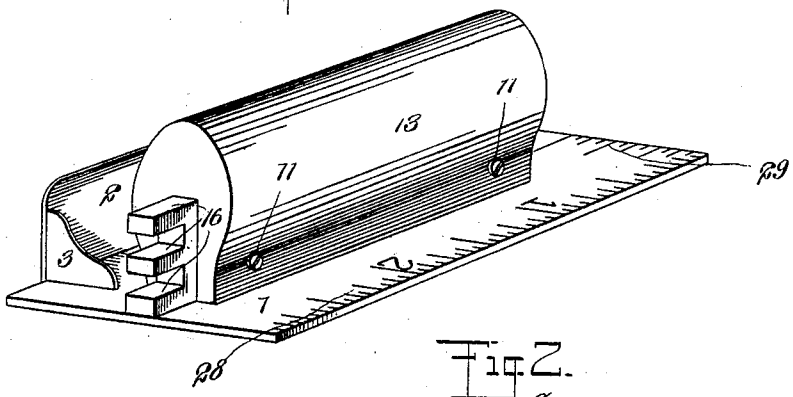


Fig. 2.

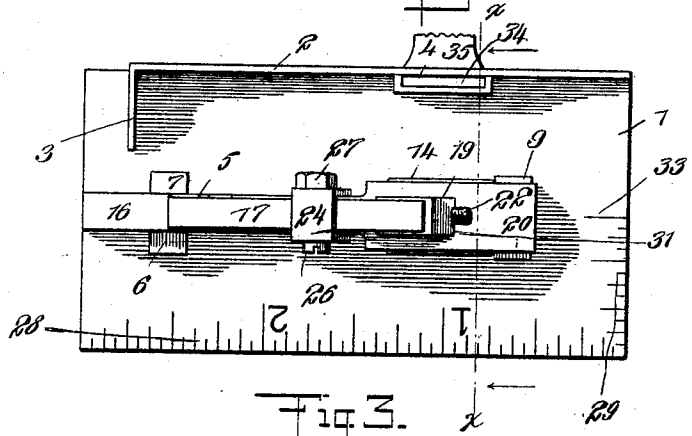


Fig. 3.

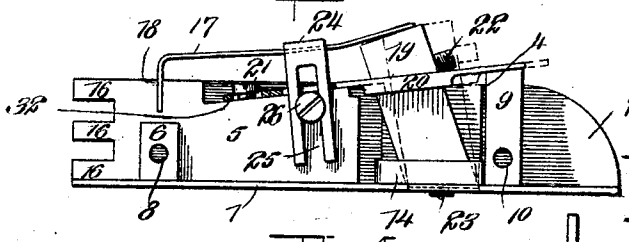


Fig. 5.

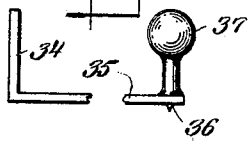
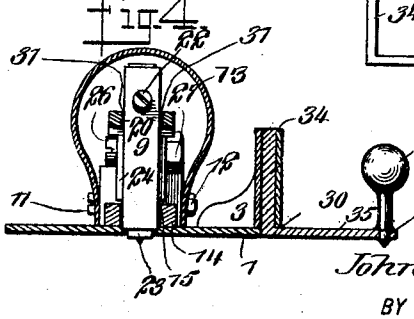


Fig. 4.



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GLASS-CUTTER.

SPECIFICATION forming part of Letters Patent No. 682,966, dated September 17, 1901.

Application filed June 17, 1901. Serial No. 64,824. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLIAM TESTER, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and Improved Glass-Cutter, of which the following is a full, clear, and exact description.

My invention relates to glass-cutters, and more particularly to the small hand-tools used constantly by glaziers.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

The structure is shown upon a scale somewhat enlarged.

Figure 1 shows a perspective view of the preferred form of my invention with the casing, which serves as a handle, in place. Fig. 2 shows a plan view of the same with the casing removed so as to expose the internal mechanism. Fig. 3 shows a side elevation of the parts shown in Fig. 2. Fig. 4 shows a cross-section upon the line x x of the structure shown in Fig. 2 as viewed in the direction of the arrows in said figure, the casing also being shown as in place; and Fig. 5 shows a radial centering arm or compass used in cutting curves.

The bottom plate 1 is provided with a guide-plate 2 and a brace 3 therefor at right angles to each other and firmly secured to said bottom plate. The guide-plate 2 is thickened and provided with a slot 4, extending through the bottom plate and into which the workman can insert from the bottom upward the hook 34 of the radial centering-arm. (Shown in Fig. 5.) The bottom plate is also provided upon two of its rectangular edges with graduated scales 28 29, indicating linear units of measurement, preferably inches and subdivisions thereof.

Secured centrally upon the bottom plate 1 is a web-frame 5, provided with lugs 6 7, through which extends an aperture 8, and also secured upon said bottom plate is a perpendicular boss 9, provided with a similar aperture 10. Through these apertures pass screw-bolts 11, each engaging a nut 12. The bolts are for the purpose of holding the casing 13 in place, as shown in Figs. 1 and 4, such casing acting to protect the internal parts and likewise serving as a handle for manipulating the entire structure. A rectangular guide 14 is also secured upon the bottom plate and is provided with a slot 15, extending through the bottom plate, as shown in Fig. 4. One end of the frame 5 is provided with a comb 16, the teeth of which extend beyond the brace 3, as shown in Fig. 1. This comb is used for breaking glass.

The frame 5 is provided with a leaf-spring 17, preferably secured in a slot 18 therein by pinning. The free end of said spring rests upon a loose block 19, which is slidably mounted by passing through two slots 15 31, with which the rectangular guide 14 and the bridge-plate 20 are respectively provided. Said bridge-plate 20 is secured at one end upon the frame 5 by a screw 21 passing through a slot 32, the other end of said bridge-plate resting loosely upon the boss 9. The block 19 is provided with a screw 22, which stops against the bridge-plate 20, and thus limits the downward thrust of the block. The slot 32 is to afford a lineal adjustment for the bridge-plate 20, whereby the position of the upper end of the block 19 may be altered and the angle at which the diamond engages the glass may be changed, as indicated by dotted lines in Fig. 3. The diamond 23 is placed in the extreme lower end of the block 19 and is mounted therein as such a part is usually mounted in a glass-cutter. The cutting-surface projects slightly below the bottom plate, so that a moderate pressure downward upon the instrument as a whole causes the diamond-point to bite into the supporting-surface. An excessive pressure, however, will not affect the diamond, the latter being free to move upward by raising the block 19 against the tension of the spring 21. This spring also enables the diamond to travel over inequalities in the thickness of the glass. The tension of the spring 17 is adjusted by means of a U-shaped yoke 24 embracing the same, each end of the yoke being provided with an open-ended slot 25, which straddles a screw-bolt 26, the screw-bolt passing through the frame 5 and engaging a nut 27 upon the opposite side thereof.

To use the instrument, the proper measurements, if desired, are made by the gages 28 29, the instrument is grasped by the handle or casing 13 and laid upon the work, the guide-

plate 2 is placed flush with a straight-edge, if one be used, pressure is applied, and the cut is made, after which, if desired, the comb 16 is used in breaking the glass, or the glass can be broken by hand. When circular cuts are to be made, the glazier inserts the hook 34 of the centering-arm upward through the slot 4, places the point 36 upon the center desired, grasps the knob 37 with one hand and the casing 13 with the other, and moves the cutter radially around. As the shank 35 of the radial arm can be of any desired length, cuts of any preferred degree of curvature can be readily made. In all cases whether the cut be straight or curved the path of the diamond is indicated by the mark 33, which is exactly in the center of the bottom plate. To make the diamond cut upon a given line, the workman so handles the cutter that the mark 33 follows the line. This is very important to be observed, as the diamond is normally out of sight while the tool is being used. The guide-plate 1 is slightly cut away at 30 to admit the shank 35 of the centering-arm, so that the bottom plate 1 can rest flatly upon the surface to be cut.

The block 19 can be made, if desired, by merely cutting off the lower end of a common glass-cutter, thus sometimes avoiding the necessity for the purchase of a diamond. Glass-cutters with broken handles can also be utilized for this purpose.

Among the many advantages offered by my device are durability, lightness, simplicity, and cheapness and the fact that several distinct tools are harmoniously combined in a single instrument. The general utility and convenience of the device will at once be apparent to glaziers and persons skilled in the art.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A glass-cutter comprising a bottom plate, a guide-plate at right angles thereto, said parts together being provided with an L-shaped slot for use as an anchorage for engaging a centering-arm in combination with a cutting-tool, substantially as described.

2. A glass-cutter, comprising a frame provided with a fixed guideway, a movable guideway located in a plane substantially parallel to said fixed guideway and adjustable in said plane, in combination with a block provided with a cutting-tool passing through both said fixed and said movable guideways, whereby said cutting-tool is made adjustable, substantially as described.

3. A glass-cutter comprising a bottom plate provided with a guideway and a plurality of lugs located upon opposite sides thereof, a bridge-plate resting upon said lugs and provided with a guideway, a reciprocating block extending through both of said guideways and provided with a cutting-tool, a leaf-spring engaging the said block directly, in combination with an adjustable yoke embracing said leaf-spring directly for the purpose of controlling the tension thereof.

4. A glass-cutter comprising a plurality of guideways, a block provided with a cutting-tool and slidably engaging said guideways, and a leaf-spring for tensioning said block, in combination with a yoke embracing said spring directly, said yoke being provided with depending slotted members, and a screw-bolt for adjustably securing said members for the purpose of controlling the tension of said spring.

5. In a glass-cutter, the combination of a bottom plate provided with an aperture, a bridge-plate substantially parallel to said bottom plate and provided with another aperture, a block provided with a cutter and slidably engaging both apertures, and a stop for limiting the sliding movements of said block.

6. A glass-cutter, comprising a pair of members substantially parallel and each provided with a slot, a block provided with a cutting-tool and slidably engaging both of said slots, and a spring engaging one end of said sliding block, in combination with a member removably secured to said block and constituting a shoulder for limiting the motion of the block, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN WILLIAM TESTER.

Witnesses:
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A. W. SKOG.