No. 742,179. PATENTED OCT. 27, 1903.

F. S. FLETCHER.

GLASS CUTTER.

APPLICATION FILED DEC. 11, 1902.

NO MODEL.

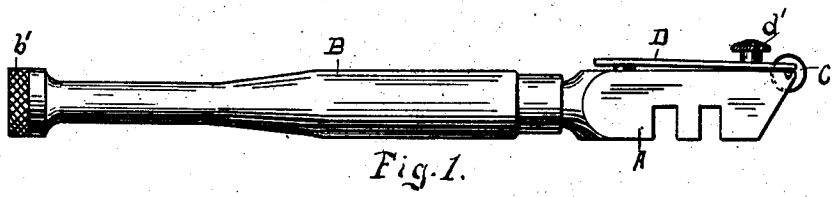


Fig. 1.

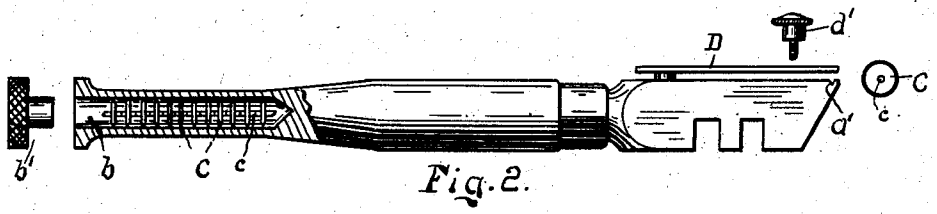


Fig. 2.

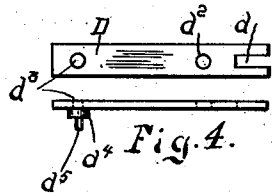


Fig. 4.

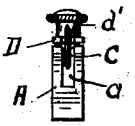


Fig. 3.

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No. 742,179. Patented October 27, 1903.

UNITED STATES PATENT OFFICE.

FRED S. FLETCHER, OF BRISTOL, CONNECTICUT, ASSIGNOR TO FLETCHER, TERRY & COMPANY, OF BRISTOL, CONNECTICUT.

GLASS-CUTTER.

SPECIFICATION forming part of Letters Patent No. 742,179, dated October 27, 1903.

Application filed December 11, 1902. Serial No. 134,812. (No model.)

To all whom it may concern:

Be it known that I, FRED S. FLETCHER, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Glass-Cutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to devices for cutting glass, and more particularly to that type in which a small rotatable steel disk is employed.

Heretofore it has been customary to form a holder either by casting or forging metal or by turning a piece of wood into the shape desired and then to attach the cutting-disk thereto in some suitable manner. The cutting-disk is usually placed so as to rotate in a slot cut in the extreme end of the handle or holder, or in case a wooden handle is employed then a metallic head of some kind is usually provided, and the slot is cut in this head. The cutting-disk is usually mounted on a small shaft or axle riveted in holes drilled through the sides of the walls of the slot.

It is evident that in devices of the character described a destruction of the cutting-disk involves practically a destruction of the whole tool, although the cutting-disk is but a small element thereof. Where the proper accessories are at hand, the shaft or axle of a broken disk may be removed and a new disk inserted in place; but when the device forms an ordinary household tool it is almost impossible and always very inconvenient to resort to this method of making repairs, and instead of spending considerable time and labor thereon the tool is thrown away by the owner and a new one is bought.

The object of the present invention is to provide a glass-cutting tool in which the cutting-disk may be readily removed and replaced without the use of tools.

A further object consists in so constructing the tool-handle that it forms a receptacle for holding additional cutting disks and shafts, so that new cutters are always accessible in case the one in use becomes broken.

A further object of the present invention consists in an attachment for adapting glass-cutters now in use so that the cutting-disk may be readily removed and replaced.

To the above ends the present invention consists of the devices and combinations of devices to be hereinafter described, and particularly pointed out in the claim.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my improved glass-cutter ready for use. Fig. 2 is a view partly in section, showing a number of surplus cutting-disks arranged in the tool-handle and the main elements of the device removed from their operative positions. Fig. 3 is an end view showing the cutting-disk locked in place. Fig. 4 shows in plan and side elevation the locking-plate which holds the cutting-disk in place.

Similar reference characters will be employed throughout the specification and drawings to designate corresponding parts.

In the form illustrated, A represents a metal head of substantially the same configuration as those now in use. This head is shown as being attached to a handle B, preferably of wood. While I have shown the holder as consisting of the head and handle as of separate elements, yet the present invention comprehends a device in which the head and handle are formed integrally, either by casting or by any other known means of shaping metal or wood. A slot *a* is formed in the outer end of the head A. This slot is of substantially the same shape and size as the slots appearing in the present glass-holders and may be made during the process of forging or casting, or it may be cut or sawed in any suitable manner after the holder is constructed. A cutting-disk C, provided with an axle *c*, is adapted to rotate within this slot in the usual manner. Instead, however, of riveting or otherwise rigidly securing the shaft or axle *c* to the holder, I have provided V-shaped notches *a'* cut into the upper and outer side of head A, the ends of the axle *c* being adapted to seat in said notches.

In order to hold the cutting-disk in place, I have provided a spring-plate D of a suitable length, secured at one end to the holder and having its free end extending substantially

to the forward end of the holder. An open-ended slot d is cut or otherwise formed in the free end of the plate and when the plate is in position extends into registration with the slot a in the holder. A thumb-screw d' passes through an opening d^2 in the plate D and engages a screw-threaded opening in the holder. It is apparent that when the cutting-disk and its axle have been set in place a turning of the thumb-screw will press the free end of the plate D firmly upon the ends of the axle, holding it securely in place.

The cutting-disks C are preferably free to turn upon their shafts in order that the disks may be free to rotate no matter how tightly the thumb-screw d' is screwed into place. While I prefer such an arrangement, yet it is of course understood that the shafts may be rigidly connected to the disks and that as the cutter is operated the shafts may rotate within the V-shaped notches a'. Furthermore, although I have shown a thumb-screw for pressing the free end of the spring-plate against the shafts of the cutting-disks, yet it is not absolutely essential that any positive locking means be employed, since the plate D may be made stiff enough to hold the cutters in place by its own tension.

As shown in Fig. 4, the fastening means for the plate D may consist of a rivet d^3, secured to the plate near one end thereof and having a shoulder d^4 and a stem d^5, this latter stem being either screw-threaded or plain, as may be preferred. It will be seen that the plate with such a fitting may readily be attached to existing tools, either by riveting or screwing the part d^5 into place, and it being but a simple matter to file notches corresponding to the notches a' these tools are cheaply reconstructed to secure the avantages of my improved cutter.

As shown in Fig. 2, a recess b is formed in the rear end of the handle B, the mouth of the recess being normally closed by means of a stopper b', which may be screw-threaded or which may be held in place by frictional engagement with the walls of the recess. In this recess I have shown a number of cutting-disks and axles ready for use in case the tool in place in the holder becomes injured.

It is thought that the operation of my improved cutter has been sufficiently described in connection with the foregoing description and little discussion thereof is deemed necessary.

The cutter is operated in exactly the same manner as those now in use. In case a cutting-disk become worn or broken, all that is required to place the tool in good condition is that the thumb-screw d' be loosened, the cutting-disk removed, and a new disk taken from the handle and inserted, whereupon a subsequent tightening of the thumb-screw locks the new cutting-disk in position.

My improvement renders the length of life of a single cutter almost indefinite. For an outlay of but slightly more than the cost of cutters now in use it is possible to obtain a tool which is always ready for use, the cutting-disk of which may be instantly removed and replaced.

Having described my invention, I claim as new and desire to protect by Letters Patent of the United States—

A glass-cutter, having in combination, a holder, a slot in the end thereof, open bearings in the face of the holder and transverse to said slot, a cutting-disk journaled in said bearings, a spring-plate secured to the holder and extending above said bearings and means for pressing said spring-plate upon the journals of the cutting-disk, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRED S. FLETCHER.

Witnesses:
ALICE E. BROWN,
ROGER S. NEWELL.