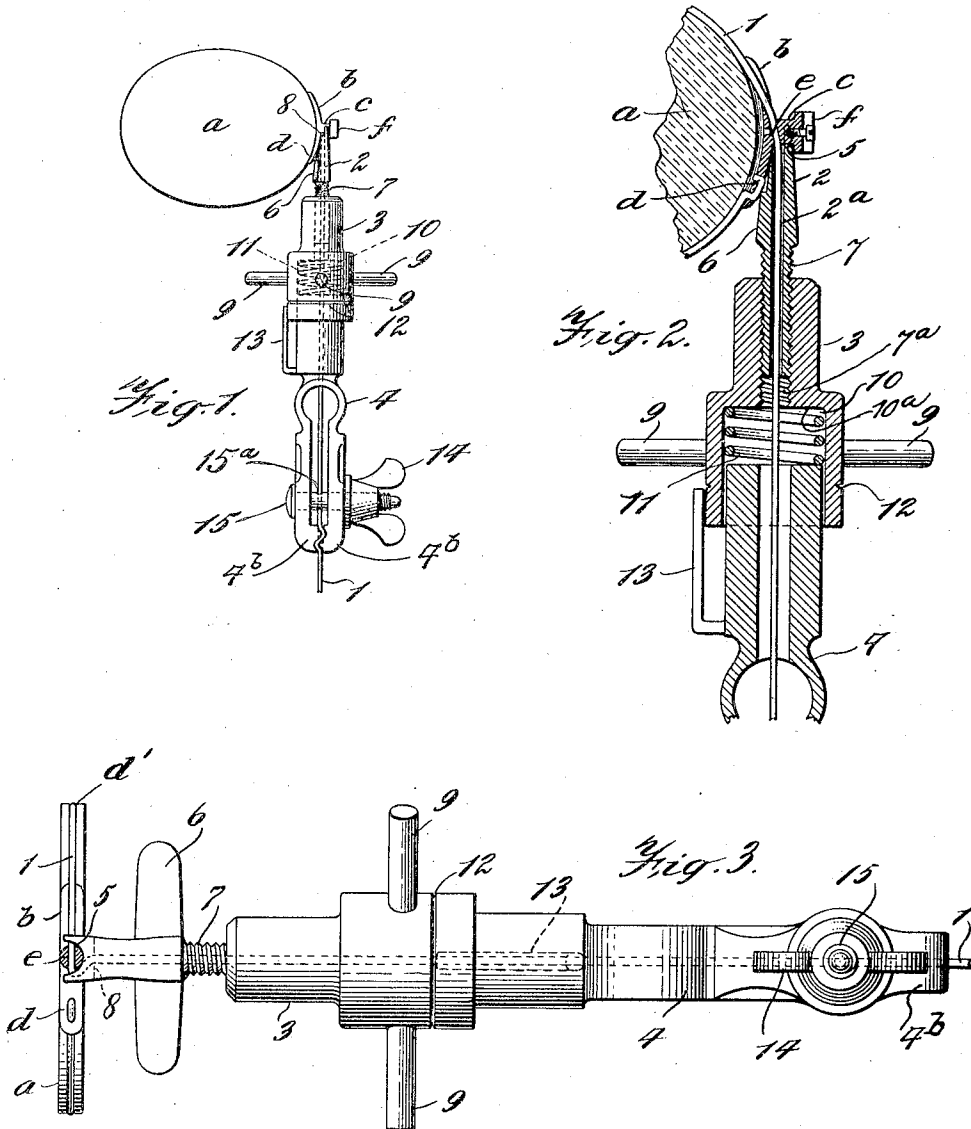


G. P. HERRICK.
 TOOL FOR TENSIONING WIRE.
 APPLICATION FILED SEPT. 20, 1917.

1,330,705.

Patented Feb. 10, 1920.



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UNITED STATES PATENT OFFICE.

GERARDUS POST HERRICK, OF NEW YORK, N. Y.

TOOL FOR TENSIONING WIRE.

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Specification of Letters Patent. Patented Feb. 10, 1920.

Application filed September 20, 1917. Serial No. 192,377.

To all whom it may concern:

Be it known that I, GERARDUS POST HERRICK, a citizen of the United States, residing in New York city, borough of Manhattan, and State of New York, have invented certain new and useful Improvements in Tools for Tensioning Wire, of which the following is a specification, reference being had to the drawing which is a part hereof.
For example, lenses have been secured to mountings by wire lying in a groove in the edge of the lens. This has been done by the drawing together with a screw of lugs or straps, to which the ends of the wire were attached.

My method, as shown in my application on lens mountings filed August 21, 1917, Serial No. 187,326, broadly provides for the tensioning of the wire by drawing it through an opening in the mounting after the lens is in place and kinking or otherwise securing it beyond that opening to retain the tension put on.

It is the object of this invention to provide a tool for easily and accurately tensioning wire and facilitating the securing of the wire, while maintaining the tension.

Such a tool is doubly advantageous in the example given because the parts are comparatively fragile, and the tension required comparatively great, and the tool may be made, as shown, so that it can be let go of at any point of the tensioning and will stay as set.

The invention is more fully described hereafter and with reference to the accompanying drawing in which—

Figure 1 is an elevation of the tool as applied in place against a lens mounting for tensioning the wire.

Fig. 2 is an enlarged section of Fig. 1.

Fig. 3 is a side elevation of the tool and lens in Fig. 2 after the tool has been turned 90° about the mounting and with relation to the lens.

In Fig. 1 *a* designates a circumferentially grooved lens with a wire 1 lying in the groove therein, and *b* designates a mounting to which the end of the wire 1 is anchored as at *d*; the other end of said wire, after passing about the lens (as in groove *d'* Figs. 2 and 3), passing through a hole *e* in the post or stud *c* and thence through the longitudinal center of the tool to the clamp 4, as will be hereinafter described.

I will now describe the tool constituting my present invention. 2 designates a brace

member provided with a center hole 2^a, said brace member being provided at one end with a hollowed or recessed face 5 which is adapted to rest against and partly surround the post *c* of the mounting. 6 designates a pair of projections extending laterally from the brace member 2 by which the lips of the recess 5 may be assisted in preventing the brace 2 from turning on its longitudinal axis, when the tensioning capstan, to be afterward described, is rotated, said projections being held by the hand of the operator. At the opposite end of the brace member 2 from that having the recess 5, is a threaded end or extension 7 which screws into a threaded bore 7^a of a capstan member 3. Adjacent the recessed end of the member 2, the latter is formed with a notched face or shoulder through which the wire enters the hole 2^a in the center of the tool. This face 8 assists in kinking the wire on the farther side of hole *e* when the tool is turned about the post *c* of the mounting.

The capstan-piece 3 heretofore mentioned consists of a tubular member provided with members 9—9 by which it may be turned, whereby the capstan member may be moved toward and away from the mounting by threaded connection between the capstan member and the shank or extension 7 of the brace member. On its opposite end from that threaded to the brace member, the capstan is provided with a cavity 10 for receiving the spring 11 and also for guiding the end of clamp 4 which abuts one end of said spring. 12 designates a groove or mark on the capstan with which the marker 13 on the clamp 4 registers when the desired tension is obtained. The opposite ends of the spring abut a shoulder 10^a and the end of the clamp 4, the effect being that the tension on the wire will be elastic and can be indicated by the marker 13. The clamp 4 consists of a tubular part which is seated in the cavity 10, which part carries on its outer end opposite disposed spring jaws 4^b which are adapted to be moved into clamping relation to each other by a nut 14 threaded on to a bolt 15 fixed to one of the jaws and projecting through an opening in the other jaw, as will be clear from reference to Fig. 1 on the drawings. The bolt 15 is provided with an aperture 15^a through which the wire is passed.

In operation the tool is used as follows: The mounting *b* is held in any convenient way as by placing the channel *f* in a small

vise. When one end of the wire has been anchored to the mounting *d* and the other end passed about the grooved lens *a* and through the hole *e* in the post *c*, it is then
 5 passed through the center hole of brace 2, capstan 3 and clamp 4 and made fast by operating the nut 14 to clamp the jaws of the clamp on the wire.

The capstan 3 is preferably in the position nearest the mounting on the threaded portion 7. It has also been marked at 12 to show at what compression of the spring 11 the desired tension will be obtained.

By turning the capstan 3 in the proper
 15 direction (depending on whether a right or left handed thread is used) it will start to move away from the mounting *b* and tend to lengthen the distance between clamp 4 and the mounting. This will put a tension on the wire and on the spring 11. During this operation, clamp 4 may be kept from rotating to avoid twisting the wire. When the desired tension is obtained and marker 13 registers with the mark or groove 12, the
 20 tool is turned about the post *c*, assuming at 90° the position shown in Fig. 3. Obviously the tool will function without the spring 11 and the marker 13, in which form I have also used it, but the spring furnishes a means
 25 of having an elastic tension and obtaining equal tensions when desired. The kink then having been made while retaining the tension, the tool may be removed and the end of the wire disposed of in any way.

35 The tool may be adapted to other purposes than the one described when delicate and measured tensioning of wire is desired, without departing from the invention.

What I claim and desire to secure by Letters Patent of the United States, is:—

40 1. In a tool for tensioning wire on a lens in combination, a brace formed with a curved end adapted to engage a post or stud on the lens mounting, a clamp, and tensioning means between said brace and said
 45 clamp.

2. In a tool for tensioning wire on a lens in combination, a brace formed with a curved end adapted to engage a post or stud
 50 on the lens mounting, a clamp, and tensioning means between said brace and said clamp, said tensioning means being provided with an opening through which the wire is tensioned.

55 3. In a tool for tensioning wire on a lens in combination, a brace formed with a curved end adapted to engage a post or stud on the lens mounting, a clamp, and tensioning means between said brace and said
 60 clamp, said brace and said tensioning means being provided with registering central openings through which the wire is tensioned.

4. In a tool for tensioning wire in combination, a brace, a clamp, and tensioning
 65 means between said brace and said clamp, said brace being provided with a curved face formed with lips arranged to engage a member on the lens mounting whereby said face is kept in position. 70

5. In a tool for tensioning wire on a lens in combination, a brace formed with a curved end adapted to engage a post or stud on the lens mounting, a clamp, and tensioning
 75 means between said brace and said clamp, said brace being provided with a securing member and a notched face adapted to assist in kinking the wire between said securing member and said brace.

6. In a tool for tensioning wire on a lens, 80 a brace with a threaded portion and formed with a curved end adapted to engage a post or stud on the lens mounting, a clamp, a tensioning member between said brace and clamp and operating on said threaded portion to increase the tension. 85

7. In a tool for tensioning wire in combination, a brace, a clamp, and tensioning means between said brace and said clamp, and an elastic medium between said tensioning means and said brace, and associated means for indicating when a desired tension
 90 has been obtained. 95

8. In a tool for tensioning wire in combination, a brace, a clamp, and tensioning means between said brace and said clamp, and a spring between said tensioning means and said brace, and associated means for indicating when a desired tension has been
 100 obtained. 105

9. In a tool for tensioning wire in combination, a brace, a clamp, and tensioning means between said brace and said clamp, and an elastic medium between said tensioning means and said clamp, and associated means for indicating when a desired tension
 110 has been obtained. 115

10. In a tool for tensioning wire, in combination, a brace, a clamp, and tensioning means between said brace and said clamp, and a spring between said tensioning means and said clamp, and associated means for indicating when a desired tension has been
 120 obtained. 125

11. In a tool for tensioning wire in combination, a brace, a clamp and tensioning means between said brace and said clamp, and associated means for indicating when a desired tension has been obtained.

In testimony whereof I have hereunto
 120 signed my name in the presence of two subscribing witnesses.

GERARDUS POST HERRICK.

Witnesses:

E. M. LOCKWOOD,
 C. G. HEYLMUN.