L. L. HOUCHIN.

PLIERS.

APPLICATION FILED DEC. 21, 1915.

1,198,231.

Patented Sept. 12, 1916.

2 SHEETS—SHEET 1.

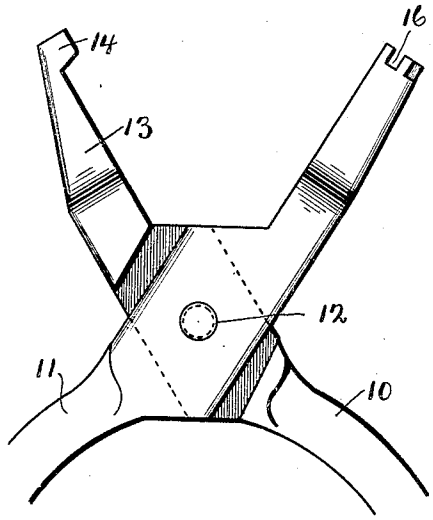


Fig: 1.

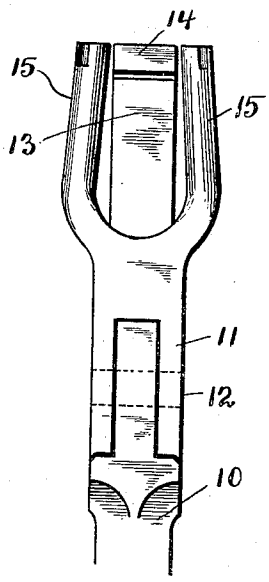


Fig: 2.

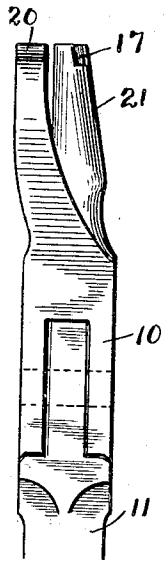


Fig: 6.

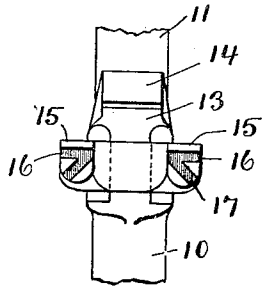


Fig: 3.

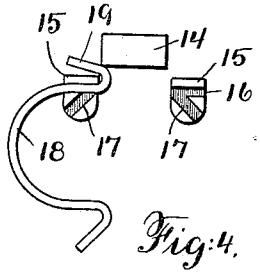


Fig: 4.

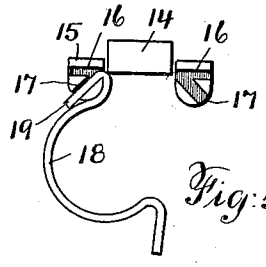


Fig: 5.

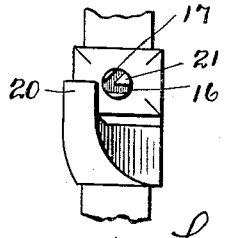


Fig: 7.

Witness
Arthur L. Damm.

Lowell L. Houchin, Inventor,
By his Attorney,
W. B. Hutchinson.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

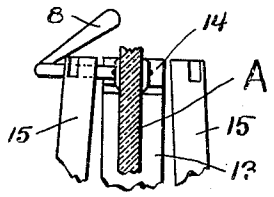


Fig: 8.

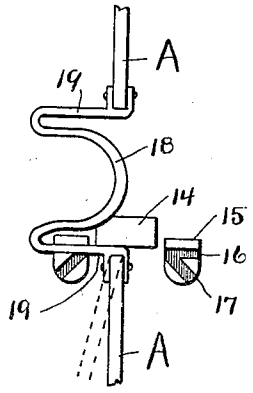


Fig: 9.

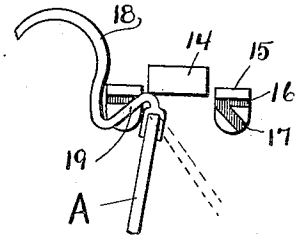


Fig: 10.

Witness
Arthur G. Dannell.

Lowell L. Houchin, Inventor,
By his Attorney,
W. B. Hutchinson.

THE NORRIS PETERS CO., PHOTO LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOWELL L. HOUCHIN, OF WEST NEW YORK, NEW JERSEY.

PLIERS.

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Application filed December 21, 1915. Serial No. 67,977.

To all whom it may concern:

Be it known that I, LOWELL L. HOUCHIN, a citizen of the United States, and a resident of West New York, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in Pliers, of which the following is a full, clear, and exact description.

My invention relates to improvements in pliers.

The object of my invention is to produce a simple, efficient, and inexpensive instrument especially adapted for the use of opticians, but also adapted for use in bending wire, but more especially in giving a wire a particular shape.

My invention is more particularly adapted to shaping that portion of the bridge of eyeglasses and spectacles which comes next the lenses. It is necessary to give to this part of the spectacles or eyeglass frame a particular bend, and the character of this bend varies somewhat with the requirements of each individual user so that it is necessary frequently to change the particular bend of the wire at these points. With ordinary pliers this is difficult, but my instrument is designed and constructed in such a manner that the wire can be conveniently gripped at this point and quickly given the desired shape. To facilitate this operation I arrange the two jaws of the pliers so that they slide past each other in close proximity, and one of the jaws is provided with slots or recesses in the ends thereof in which the wire to be bent can be easily placed, and then when the jaws are closed upon the wire, the latter is held so that a little twist of the pliers will quickly bend the wire. All of which will be understood from the description which follows. I also preferably have one of the jaws bifurcated so that the opposite jaw will close between the two members of the bifurcated jaw, and as the bifurcated jaw has its ends recessed or slotted to receive the wire, this form of the tool is very convenient especially as it can be easily adapted to the right or left end of the wire to be bent and without interfering with lenses which may be attached to the wire. Obviously the tool can be used for bending wires for purposes other than mentioned.

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

Figure 1 is a broken side elevation of the open pliers embodying my invention. Fig. 2 is a view at right angles to that shown in Fig. 1 and with the jaws closed. Fig. 3 is a broken end view of the pliers with the jaws slightly separated. Fig. 4 is a diagrammatic end view showing the position of the meeting jaws when engaging and bending a wire. Fig. 5 is a view similar to Fig. 4 but showing the means for imparting a sharper bend to the wire. Fig. 6 is a broken elevation of a modification of the pliers, in which neither jaw is bifurcated. Fig. 7 is a broken end view of the structure shown in Fig. 6. Fig. 8 is a broken detail view showing the specific application of the pliers to the frame of an eyeglass for bending it. Fig. 9 is an end view showing the position of the parts just as a final bend is to be given to the eyeglass frame, and Fig. 10 is a view similar to Fig. 9 but showing the wire of the frame arranged in a different slot or recess in the jaw of the pliers.

The tool has two handle members 10 and 11 which can be of any usual or preferred shape and which are pivoted together as shown at 12 in the customary or any approved manner. This part of the structure has nothing to do with my invention which relates entirely to the arrangement and functions of the jaws. The member 10 is prolonged to form a jaw 13 which is preferably thickened at its outer extremity as shown at 14, forming an anvil which is adapted to close between the members 15 of the opposite or bifurcated jaw, this being a continuation of the handle member 11. Each member 15 of the bifurcated jaw is slotted across the end transversely as shown at 16, this slot or recess extending across the front end or face of the jaw, and being of a size to conveniently receive a strip of wire most usually operated on, and opening from each slot or recess 16 near the inner end of the recess is a second slot or recess 17 which is arranged at a sharp angle to the slot or recess 16. By reference to Fig. 3 it will be noticed that the slots 17 diverge with reference to each other, thus adapting the tool for use on the left hand or right hand portion of an eyeglass bridge or frame, as will presently appear.

The instrument is designed especially to work on the end portions of the bridge 18

of the frame of an eyeglass or spectacles, so as to bend the part 19 as desired. It will be seen that the wire of the bridge 18 can be inserted in the slot or recess 16, the jaws of the tool closed so that the anvil member 12 impinges on the wire, and then a slight twist of the pliers will give the desired bend. It will also be noticed by reference to Figs. 3 to 5 that either member 15 of the bifurcated jaw can be used, and the one selected will be the one most convenient for the particular purpose in hand.

In Fig. 5 it is shown clearly how a sharper bend can be applied to the bridge member 18 than by use of the slot 16. If a particularly sharp bend is desired, the terminal part 18 of the bridge member is inserted in the slot 17 as shown, and then by twisting the tool the wire can be bent as sharply as is desired. It will be noticed that when the bifurcated form of tool is used the anvil end 14 of the single jaw closes between the members 15 so that the wire can be readily gripped between either member of the bifurcated jaw and the single jaw.

Figs. 7 to 10 show more specifically the manner in which the tool can be used on the frame of an eyeglass after the lenses are mounted. If the terminal portion 19 is to be given a conventional bend, the said part is placed in the transverse slot 16 of one of the jaw members 15 so that the anvil member 14 will bear on the part of the member 19 opposite the lens A, and then by pressing the handles, the part or member 19 can be easily bent to the desired extent; but if a sharper bend is desired the part 19 is put in the slot 17 as shown in Fig. 10, and then the anvil acting against the wire bends it to a sharper angle. For instance as shown in Fig. 10, it will move the lens from the position shown in dotted lines to the position shown in full lines.

Sometimes I make the invention with two single jaws as in Figs. 6 and 7, in which case the plain jaw member 20 is offset slightly and closes in close proximity to the member 21, the two members 20 and 21 sliding slightly by each other, and the end of the member 21 is slotted or recessed as already described. This form of the invention answers for many purposes, but is not quite so convenient for eyeglass work, as where it is used two similar tools are necessary but with the slots 16 and 17 differently arranged so that one can be used for right hand work and the other for left hand work.

From the foregoing description it will be seen that this instrument lends itself to efficient use in the bending of wire, and that the detail construction of the jaws and especially the means of using them is immaterial so long as the opposite jaws slightly overlap and the wire receiving slots in the end of one of them is preserved.

I claim:—

1. A pair of pliers comprising opposed handle jaws pivoted together and arranged to swing slightly past each other, the jaws lying generally parallel when closed, and one of them having in its end portion a plurality of stock receiving slots or recesses extending in different directions.

2. A pair of pliers having opposed jaws movable with relation to each other and lying generally parallel when closed, one of the jaws being bifurcated and having stock receiving slots in the end portions of the bifurcated members, and the other jaw being arranged to move between the members of the bifurcated jaw.

3. A pair of pliers having jaws movable back and forth with relation to each other and lying when closed in generally parallel relation, one of the jaws being bifurcated and having stock receiving slots in the ends of the bifurcated members, and the second jaw having a raised or thickened anvil portion moving between the members of the bifurcated jaw near the free ends of said members.

LOWELL L. HOUCHIN.

Witnesses:
WARREN B. HUTCHINSON,
ARTHUR G. DANNELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."