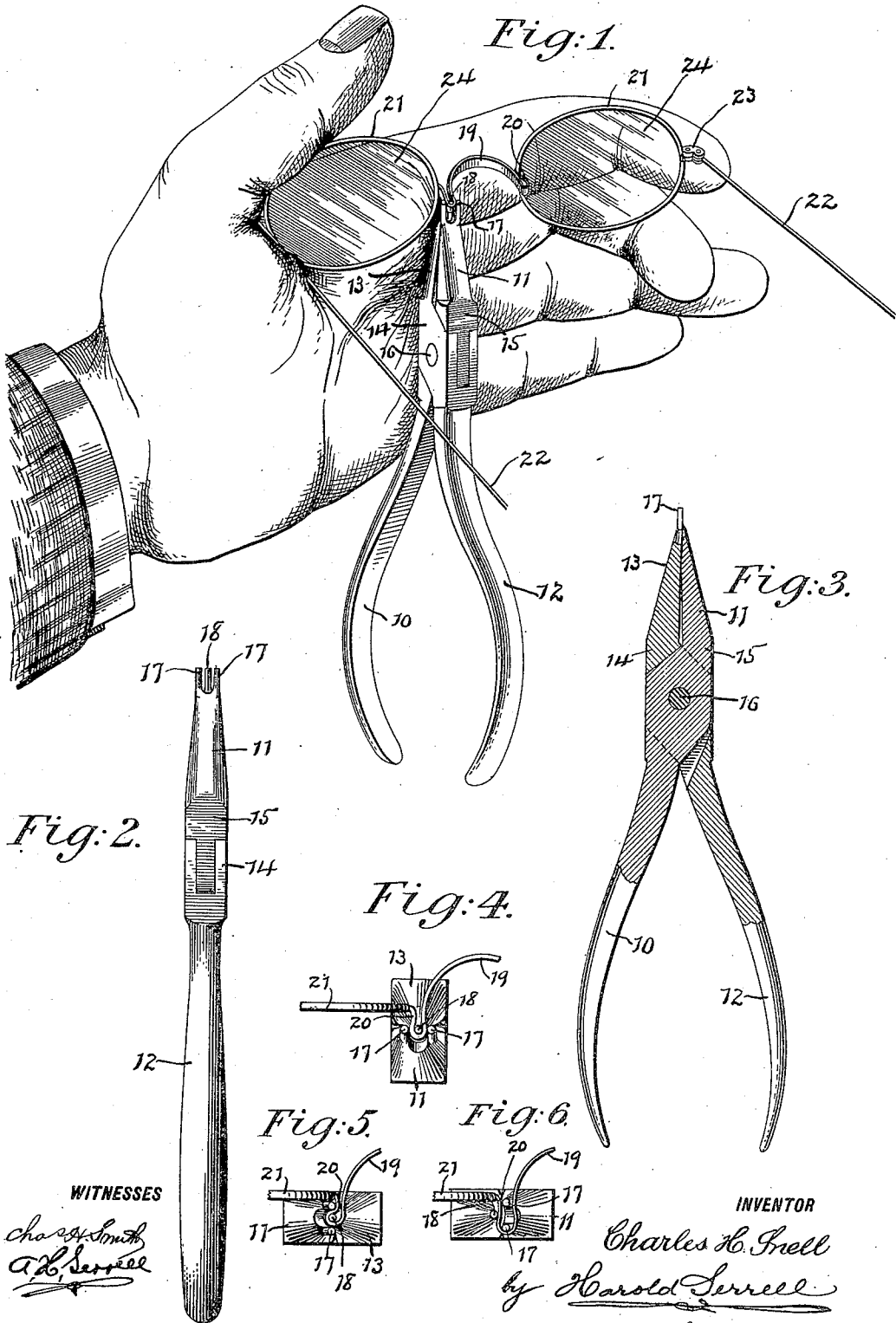


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PLIERS.
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960,724.

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UNITED STATES PATENT OFFICE.

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PLIERS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES H. SNELL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented an Improvement in Pliers, of which the following is a specification.

My invention relates to pliers and particularly to pliers adapted for use by oculists and opticians in fitting spectacles to customers' eyes, and the object of my invention is the provision of a tool to which this invention relates, adapted to bend or curve the frame of the spectacles or other articles to change the centers of the lenses relatively to one another so as to adjust the lenses to their proper positions, or for other purposes.

In carrying out my invention, I employ a pliers having jaw and grip members pivotally connected together as is customary, the said jaw members being provided with cylindrical extremities arranged as hereinafter described to accomplish the purposes herebefore set forth.

In the drawing, Figure 1 is a front view of the pliers comprising my present invention, showing the same in use in bending the bridge of a pair of spectacles. Fig. 2 is an edge view of the pliers comprising my present invention. Fig. 3 is a side elevation and partial section of the same. Fig. 4 is a plan view showing the pliers in position in use, and Figs. 5 and 6 are views similar to Fig. 4, showing the pliers in different positions in use.

Referring particularly to the drawing, the pliers comprising my present invention include a jaw member 10, integral with or otherwise connected to the grip 11, a jaw member 12 integral with or connected to the grip member 13. Intermediate of the jaw 10 and grip 11 is a slot head 14 and intermediate of the jaw 12 and grip 13 is a head 15 having a reduced portion adapted to fit within the slot head 14 and these parts are pivotally connected at 16 as is customary in the manufacture of pliers.

On the jaw member 11 and forming the extremities thereof are spaced apart cylindrical ends indicated at 17 and at the extremity of the jaw member 12 is a cylindrical end indicated at 18 and these cylindrical members 17 and 18 are so placed and arranged that when the jaws 10 and 12 are closed they are in alinement; the cylindrical

end 18 coming centrally or midway between the cylindrical ends 17; the axes of all three of which are therefore in the same plane; it being understood that in order to accomplish the results intended for the pliers hereinbefore described, it is absolutely essential that the hereinbefore named conditions of the cylindrical ends of the jaw members must exist.

In the drawing 19 indicates a bridge on the spectacle frame, 21 the rims, 22 the bow parts, 23 the shoulders which are connected to the rims 21 and to which the bow parts are pivotally connected, and 24 the spectacle lenses; the bridge 19 being connected to the rims 21 by being suitably attached at the extremities of the bridge arms 20.

Now as ordinarily constructed, and supplied to the trade, spectacle frames customarily have the bridge arms 20 at substantially right angles to the rims 21, there being a sharp curve between the bridge arms 20 and the bridge 19, and as will readily be understood, it is oftentimes necessary to adjust the positions of the lenses relatively to one another that is to say, to increase or decrease the distance between the lens centers, and the pliers constructed in accordance with my present invention are designed to accomplish this. In doing so, for instance in reducing the distance between the lens centers, the jaw ends 17 can be placed in the loop formed between the bridge and the bridge arm and the grip members of the pliers brought together to cause the end 18 to engage the exterior of these parts, as shown in Fig. 6, it being manifest that the pressure applied to the grips will bend the bridge arm toward the bridge, and by the use of these pliers the bridge arm may be caused to assume a double curve or letter S in substantially any degree as is indicated in Figs. 4 and 5; in the former of which the pliers are reversed and assume a position at right angles to that shown in Fig. 6, whereas in Fig. 5 the pliers are moved to a position at right angles to that shown in Fig. 4. It will also be apparent that the distance between the lens centers may be increased by the reverse operation. It will also be understood that while I have hereinbefore described my present invention as particularly applicable for use in adjusting spectacles to proper positions, I do not limit the use of the pliers to any such purposes, as the same

may be employed in various other arts without departing from the nature and spirit of my invention.

I claim as my invention:

- 5 1. A metal bending pliers having three rigidly formed bending members tapering and approaching one another with the respective jaw members and adapted to come into alinement in the bending operation and
10 be normally freely spaced apart a distance at least equal to the thickness of the metal body to be bent.
2. A metal bending pliers having two rigidly formed circular bending members, the

same constituting a U-shaped extremity at 15 the end of one jaw member and a circular bending member at the center and end of the other jaw member, said bending members adapted when the jaws are closed to come into alinement in a spaced apart relation to 20 receive between them the part to be bent.

Signed by me this 19th day of November 1908.

CHARLES H. SNELL.

Witnesses:

CARL L. VIERECK,
RUSSELL S. MAYDOLE.