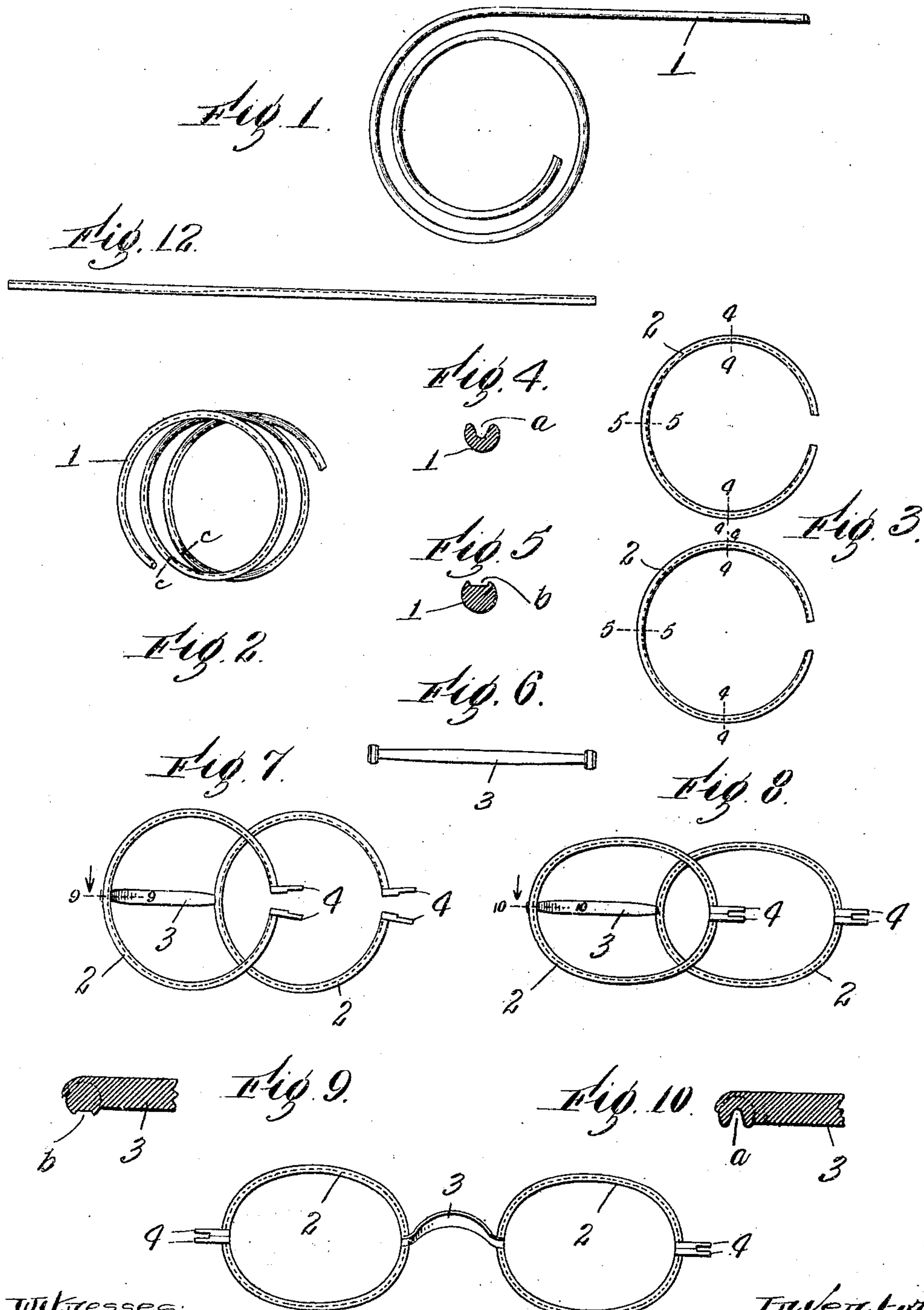


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PATENTED JAN. 2, 1906.

W. A. COATES.
METHOD OF MANUFACTURING SPECTACLE FRAMES.
APPLICATION FILED MAY 8, 1905.



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Fig. 11.

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UNITED STATES PATENT OFFICE.

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METHOD OF MANUFACTURING SPECTACLE-FRAMES.

No. 808,899.

Specification of Letters Patent.

Patented Jan. 2, 1906

Application filed May 8, 1905. Serial No. 259,306.

To all whom it may concern:

Be it known that I, WALTER A. COATES, a citizen of the United States, residing at Southbridge, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Methods of Manufacturing Spectacle-Frames, of which the following is a specification.

My invention relates to improvements in the method of making frames for spectacles, and more particularly gold or gold-filled frames which have a groove therein to receive the edge of the lenses.

The object of my invention is to improve upon the ordinary method of making frames for spectacles and to produce frames having eye-wires of the necessary stiffness and elasticity.

In my improved method of making spectacle-frames I preferably take a continuous length of wire of any desired form in cross-section, preferably round wire in a coil, and pass the same between two rolls which have surfaces thereon, as a male and female thread, to groove the wire on one side to receive the edges of the lenses. The surfaces for grooving the wire are preferably not uniform, but at predetermined points where in the grooved wire the nose-bridge and end pieces or temple attaching-lugs are to be attached the grooving-surfaces are so made as to only slightly groove the wire. A marker is also preferably provided to indicate on the wire the length to be cut off for each lens-frame.

The wire in passing between the two rolls for the length of a single lens-frame has a groove made therein of a predetermined length for the top or bottom edge of the lens, and then the wire is only slightly grooved for a predetermined length where the nose-bridge is to be attached, and then it is again grooved for a predetermined length, and then only slightly grooved where the end pieces are to be attached, and is then marked to indicate where the wire is to be cut off for one lens-frame. The deeper-grooved part of the wire forms the upper and lower part of the lens-frame, and the less-grooved part of the wire forms the ends of the lens-frame, to which are attached the nose-bridge and the temple attaching-lugs.

After the wire has been grooved as above described it is wound upon a mandrel to give

it the round shape for the lens-frames and is then cut up at points indicated by the marks thereon, and two of the pieces are then taken, and the nose-bridge is soldered at each end to each piece at a point intermediate its ends where the wire is only slightly grooved, and to each free end of each piece where the wire is only slightly grooved is soldered an end piece or a temple attaching-lug.

Each lens-frame piece after the nose-bridge and end pieces are attached thereto is placed in a punch, which has a die suitably shaped to form the oval shape of the frame at each end thereof and at the same time complete the groove at each end of the frame where the nose-bridge is attached and also where the temple attaching-lugs are attached to make the groove of substantially the same depth as the rest of the groove.

The die of the punch preferably operates on one end of a lens-frame, and then the lens-frame is removed and again inserted for the other end to be operated on. The action of the die in grooving or swaging the wire gives to the wire where the nose-bridge and temple attaching-lugs are soldered to it the desired strength and stiffness and at the same time changes the round shape of the frame to the oval shape desired. After the die has operated on the two lens-frames the nose-bridge is properly shaped in the ordinary way.

If preferred, instead of taking the wire from a coil to groove it, as above described, straight pieces of wire, in suitable lengths, may be used and grooves made therein by dies or otherwise, the grooves at the points where the nose-piece and end pieces are to be attached being of less depth, and then each straight piece of wire is formed into a round or oval shape independently.

If preferred, in passing the wire between the two rolls or treating it under the die, instead of making a slight groove in the wire at the points where the nose-bridge and end piece are to be attached, the wire can be left without any groove by changing the thread on the rolls or the form of the die when straight pieces of wire are used.

Referring to the drawings, Figure 1 shows a detached portion of a coil of wire with one end extended preparatory to passing it between the two grooving-rolls. Fig. 2 shows the wire shown in Fig. 1 after it has passed

between the two grooving-rolls and been wound on a mandrel. Fig. 3 shows two lens-frames cut from the wire shown in Fig. 2 at the points indicated by *c c*, same figure. Fig. 4 is, on an enlarged scale, a section through the deeper-grooved part of the wire on line 4 4, Fig. 3. Fig. 5 is, on an enlarged scale, a section through the less-grooved part of the wire on line 5 5, Fig. 3. Fig. 6 shows a nose-bridge, detached, before it is bent. Fig. 7 shows the two lens-frames shown in Fig. 3 after the nose-bridge and the temple attaching-lugs have been soldered thereto. Fig. 8 shows the lens-frames shown in Fig. 7 after they have been acted on by the die to complete the groove in the wire where the nose-bridge and temple attaching-lugs are soldered thereto and to give an oval shape to the frames. Fig. 9 is, on an enlarged scale, a section on line 9 9, Fig. 7, showing the less-grooved part of the wire. Fig. 10 is, on an enlarged scale, a section on line 10 10, Fig. 8, showing the complete groove in the wire. Fig. 11 shows the frames shown in Fig. 8 and the nose-bridge after the nose-bridge has been bent into the desired shape; and Fig. 12 shows a straight piece of wire after it is grooved, of a length for one lens-frame.

In the accompanying drawings 1, Fig. 1, is a detached portion of a continuous length of coiled wire, preferably of round shape in cross-section. The wire 1 is passed between two rolls, which are made to form a groove, as *a*, Fig. 4, in the wire for a predetermined length, and then form a groove of less depth, as *b*, Fig. 5, for a predetermined length, and then form a groove, as *a*, Fig. 4, for a predetermined length, and then a groove of less depth, as *b*, Fig. 5, for a predetermined length, the operation being repeated on the continuous length of wire, and marks *c*, Fig. 2, preferably made thereon to indicate where the wire is to be cut off for each lens-frame. After the wire 1 has been passed between the grooving-rolls it is wound upon a mandrel to give it the circular shape for the frames, as shown in Fig. 2, and is then cut off at points indicated by the marks *c* thereon. (See Fig. 2.)

Each lens-frame blank 2, Fig. 3, is soldered at its less-grooved portion intermediate its ends to one end of the nose-bridge 3, and a temple attaching-lug 4 is soldered to each free end of the lens-frame blank where the groove is of less depth. (See Fig. 7.) The deeper-grooved parts of the wire (indicated by the broken lines in Fig. 2) form the upper and lower part of the lens-frame and the less-grooved parts (indicated by broken lines, Fig.

2) form the ends of the lens-frame. The lens-frame blanks 2, Fig. 7, are then placed in a punch having a die of suitable shape, preferably one end of each frame at a time, and each frame is made of oval shape, and the groove *b*, Fig. 9, where the nose-bridge 3 is attached and where the temple attaching-lugs 4 are attached, is completed or made deeper, as shown at *a* in Fig. 10. The nose-bridge 3 is then shaped in the ordinary way to make the completed frames (shown in Fig. 11) ready for the lenses and the temples.

It will be understood that the details herein described of my method of making frames for spectacles may be varied, if desired, and the frames may be used for eyeglasses, if desired.

As stated above, a straight length of wire 5, Fig. 12, may be used and a groove of varying depth (indicated by broken lines, Fig. 12) formed therein by dies or otherwise, and then each piece, if not previously cut, cut into the proper length and formed into a round or oval form for a lens-frame in the manner above described and the nose-bridge and end piece attached thereto. Instead of having a groove of varying depth in the wire, portions of the wire where the nose-bridge and lens-attaching lugs are to be attached may be left without any groove and then grooved by the action of the die on shaping the lens-frames.

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

1. An improved method of making wire frames for spectacles, &c., which consists in grooving the wire for the edge of the lens, with a varying depth of groove of predetermined length, soldering the nose-bridge and the temple attaching-lugs to the wire at its less grooved portion, shaping the wire into a lens-frame, and deepening the groove in the wire where it is soldered to the nose-bridge.

2. An improved method of making wire frames for spectacles, &c., which consists in grooving the wire for the edge of the lens, with a varying depth of groove of predetermined length, soldering the nose-bridge and the temple attaching-lugs to the wire at its less grooved portion, shaping the wire into a lens-frame, and deepening the groove in the wire where it is soldered to the nose-bridge, and where it is soldered to the temple attaching-lugs.

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