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E. L. SCHUMACHER ET AL

OPHTHALMIC MOUNTING

Filed Jan. 17, 1921

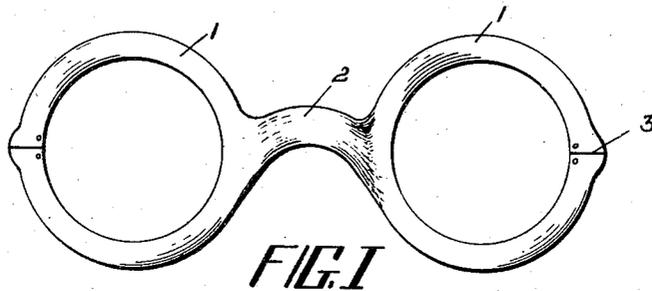


FIG. I

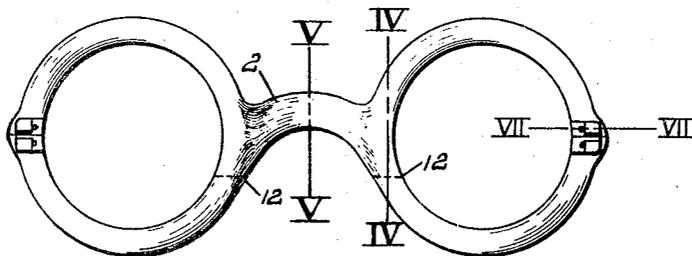


FIG. II

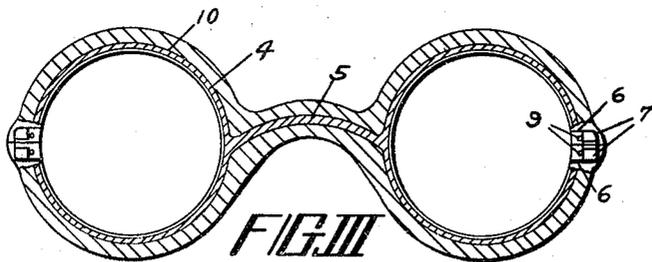


FIG. III

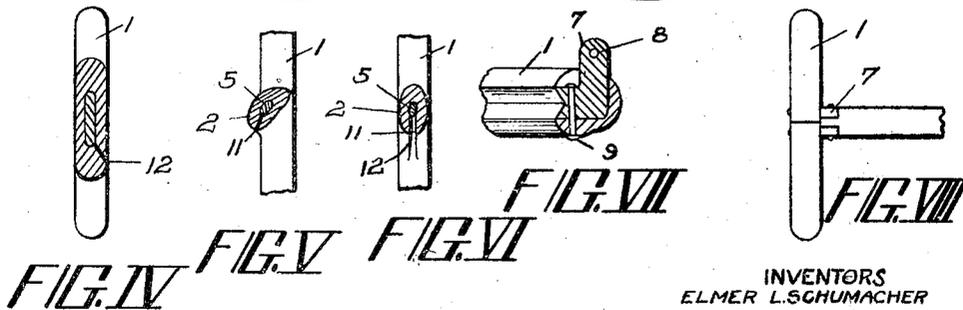


FIG. IV

FIG. V

FIG. VI

FIG. VII

FIG. VIII

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UNITED STATES PATENT OFFICE.

ELMER L. SCHUMACHER, OF SOUTHBRIDGE, AND WILLIAM H. BOUTELLE, OF STURBRIDGE, MASSACHUSETTS, ASSIGNORS TO AMERICAN OPTICAL COMPANY, OF SOUTHBRIDGE, MASSACHUSETTS, A VOLUNTARY ASSOCIATION OF MASSACHUSETTS.

OPHTHALMIC MOUNTING.

Application filed January 17, 1921. Serial No. 437,887.

To all whom it may concern:

Be it known that we, ELMER L. SCHUMACHER and WILLIAM H. BOUTELLE, citizens of the United States, residing at Southbridge and Sturbridge, respectively, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Ophthalmic Mountings, of which the following is a specification.

This invention relates to improvements in ophthalmic mountings and has particular reference to a novel and improved construction of mounting of combined metallic and non-metallic parts.

One of the principal objects of the present invention is the provision of a mounting which shall have the strength of the metal, the lens holding ability of the metal, in that there is no expansion and contraction and the lenses are securely held against accidental turning movement, but in which the mounting shall have the style and appearance of a non-metallic member, in which the metal parts shall be kept out of engagement with the face and clear of the acid of perspiration or the like upon the metal, and in which it may be possible to use other than precious or semi-precious metals for the frame on this account in place of it being necessary to use either precious or semi-precious metals due to the tarnishing properties of other materials.

A further object of the present invention is the provision of a novel and improved construction of frame, an improved manner or process of manufacturing the same by which an attractive and durable mounting may be produced in a simple and inexpensive manner.

Other objects and advantages of our improved construction should be readily apparent by reference to the following specification taken in connection with the accompanying drawings, and it will be understood that we may make any modifications in the specific details of construction shown and described within the scope of the appended claims without departing from or exceeding the spirit of our invention.

Figure I represents a front view of a mounting embodying our improvements.

Figure II represents a rear view thereof.

Figure III represents a transverse central sectional view of the complete frame.

Figure IV represents a sectional view as on the line IV—IV of Figure II.

Figure V represents a similar view on line V—V of said figure.

Figure VI represents a view illustrating the manner of constructing the device shown in Figure V.

Figure VII represents a sectional view as on the line VII—VII of Figure II.

Figure VIII represents an end view of the complete frame.

In the drawings, we have shown what is ordinarily termed an all zylonite or composition front, that is to say, a front comprising a pair of composition lens frames or eyes 1 connected by an integral bridge member 2, these parts being split as at 3 to facilitate insertion or removal of the lenses. Ordinarily a mounting of this sort is made entirely of composition material, either without any metal entering into it, or else with metal only at the end pieces or joints to aid in uniting the parts and connect a temple thereto. This is the appearance also presented by our present mounting. The difference, however, will be understood by reference to Figure III, from which it will be seen that contained within each of the portions 1 is a metallic frame 4 and passing centrally through the bridge 2 is a metallic bridge 5 making a complete metallic frame contained within the non-metallic frame. This metallic frame terminates in the end piece plates 6 having the temple receiving ears 7 connected as by a screw 8 which also may serve to hold the end piece members together and thus connect the ends of the mounting.

It will be seen by reference to Figure III that the parts 4 and 5 are firmly soldered together and form a complete integral metal frame which, however, by a comparison of Figures I and II, it will be seen is entirely invisible in the mounting, the only parts being at all visible being the end piece plates 6 which are secured to the respective ends of the frames 1 as by the rivets or fastening devices 9. In the formation of the mounting in question the frame portions 1 are constructed with interior grooves as at 10 for the metal lens frames 4 while the bridge is in flat form and is milled or sawed as at 11, the width of the slot being just sufficient to receive the metal bridge portion 5.

It will be understood that it is, of course, impossible to unite the metal frame 4 and bridge 5 after they have been put in position within the zylonite, and that it is necessary to have the parts together in a unitary structure in order to provide a satisfactory frame. To permit of inserting the metal frame as an entirety within the composition possible, we, therefore, form adjacent the base of the bridge member 2 the transverse diagonally extending kerfs or slits 12 extending through one side of the eyes, one into communication with both the grooves 10 and the milled recess 11. These are so disposed that they may be sprung open to allow the ends of the bridge to be snapped up into the kerfs and fit out into the groove 10 in the position indicated in Figure III, and at the same time be practically inconspicuous on the surface. The metal frame having been thus slipped through the slots into the grooves of the bridge and eye wire, a suitable coating of celluloid or cement is applied to the interior of the slots 12 and the unoccupied portion of the milled out space 11 and the frame then put in suitable heated shaping dies which will impart the necessary shape to the bridge, as shown in Figure V, closing up the slot 11 and 12 at the same time in a permanent manner so that they will not be noticeable when the frame is completed.

It will then be seen that we have a combination frame in which there is a complete inner metal frame entirely enclosed except as respects the lens receiving groove itself by a complete unitary one-piece composition member, the only exposed parts of the metal being the projected end pieces which serve to retain the ends of the frame together. These end pieces are concealed from the front so that no metal is shown as viewed from the front in position on the face of the wearer. It will further be noted that the termini of the frame are slightly recessed to partially receive the end piece plates and render them as inconspicuous as possible even when viewed from the side.

We claim:

1. An ophthalmic mounting, comprising a

non-metallic frame formed of a single piece of sheet material and including split rims and a connecting bridge, said bridge being provided with a longitudinal groove, a metallic frame embedded in the non-metallic frame and having its bridge member disposed in said groove, and temple connecting means carried by the metallic frame and secured to the rear face of the non-metallic frame.

2. The process of forming an ophthalmic mounting, consisting in shaping a one-piece frame, interiorly grooving the eye portions of the frame, forming a passage through the bridge portion of the frame, connecting said grooves, and inserting a one-piece metallic frame within the groove and passages.

3. The process of forming a composition mounting consisting in shaping a non-metallic member into a pair of eyes connected by a bridge portion, forming frame receiving grooves in the eyes and a passage connecting said grooves through the bridge, forming slots in the frame communicating with the passage in the bridge, inserting a one-piece bridge and eye wire frame within the passage and grooves, and subsequently closing up the slots.

4. The process of forming a combination frame consisting in forming a bridge and eyes from composition material, interiorly grooving the eyes and forming a passage in the bridge connecting said interior grooves of the eyes, slotting the frame centrally to the passage and grooves, forming a metallic frame with bridge and eye wire portions, securing end pieces on the eye wire portions, inserting the metallic frame in the groove and passage of the non-metallic frame by way of the slots, closing up the slots to lock the parts in place, and securing the end pieces of the metallic frame to the eyes of the non-metallic frame.

In testimony whereof we have affixed our signatures, in presence of two witnesses.

E. L. SCHUMACHER.
WILLIAM H. BOUTELLE.

Witnesses:

ALICE G. HASKELL,
SUSAN CASAZZA.