Feb. 24, 1953 E. M. SPLAINE 2,629,196

OPHTHALMIC MOUNTING

Filed Nov. 4, 1948

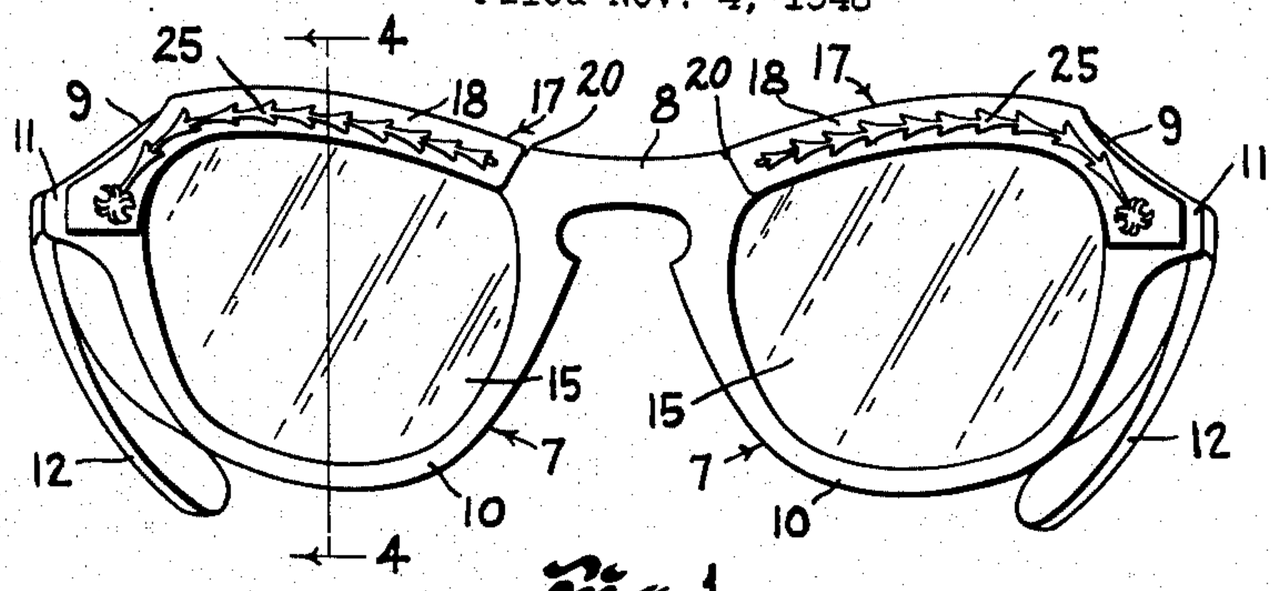

Fig. 1

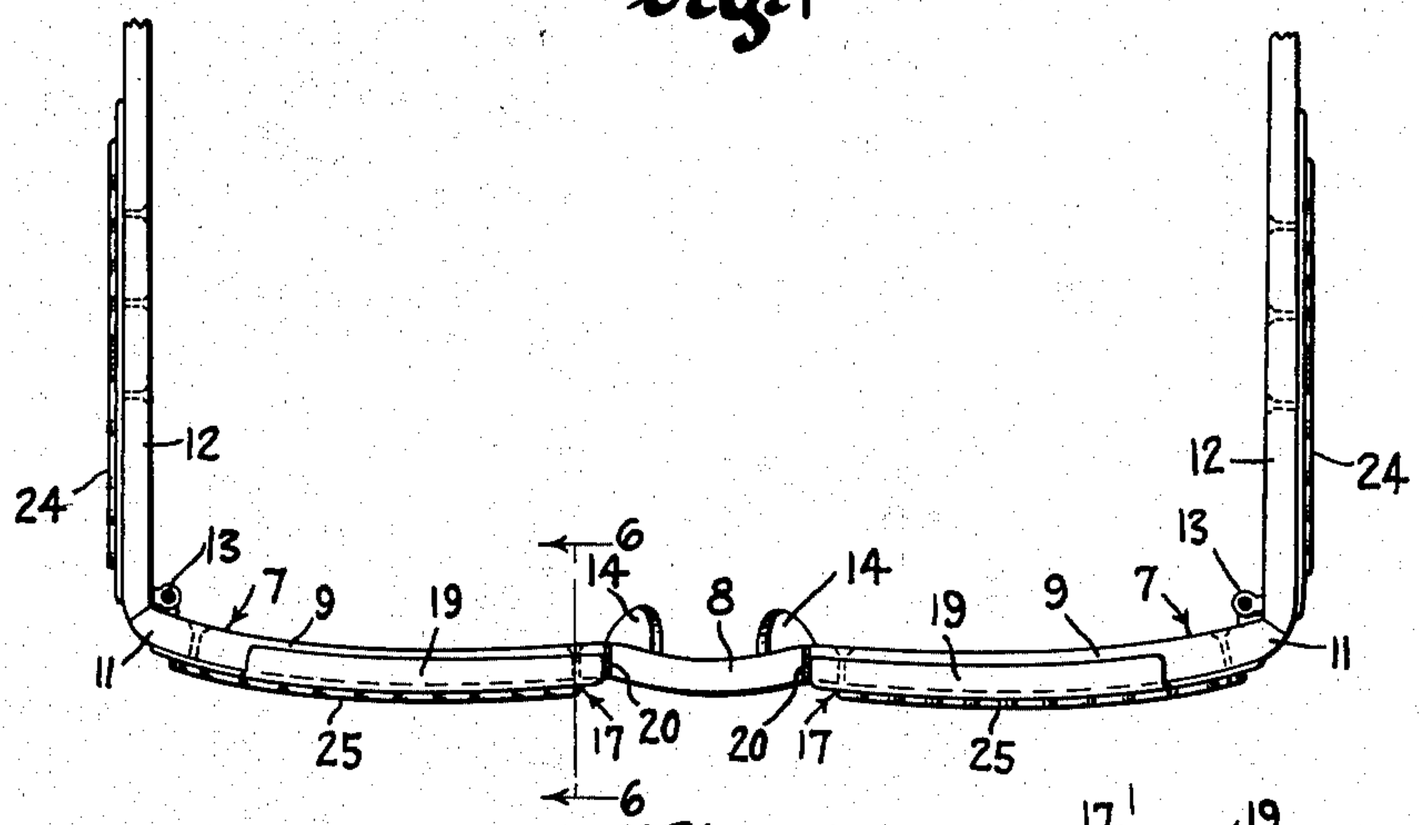

Fig. 2

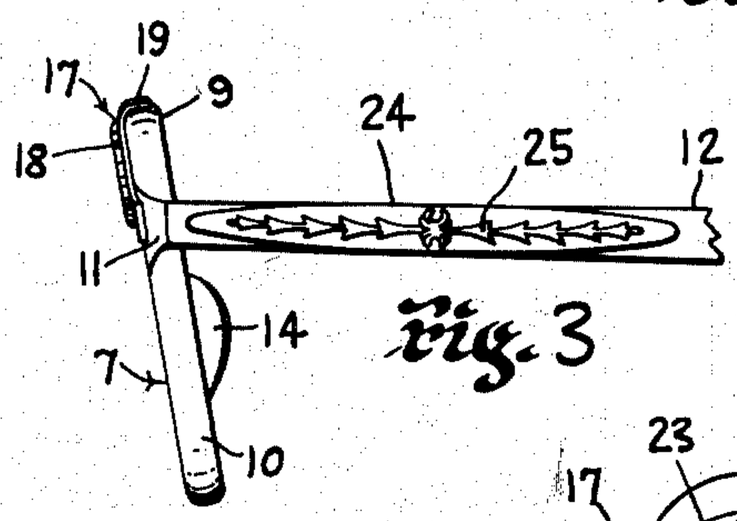

Fig. 3

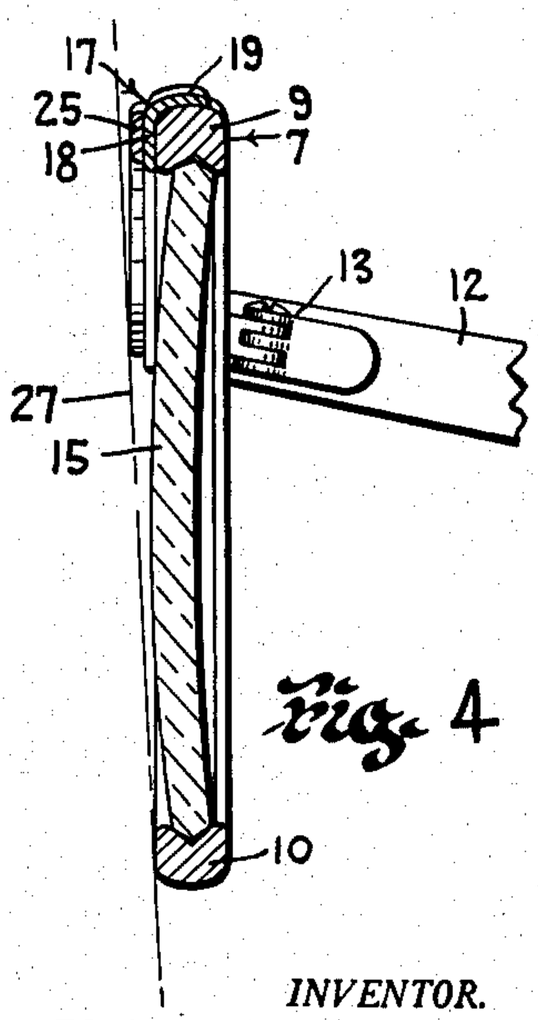

Fig. 4

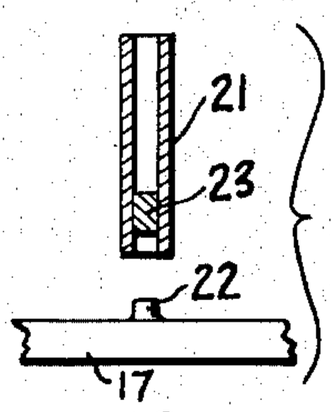

Fig. 5

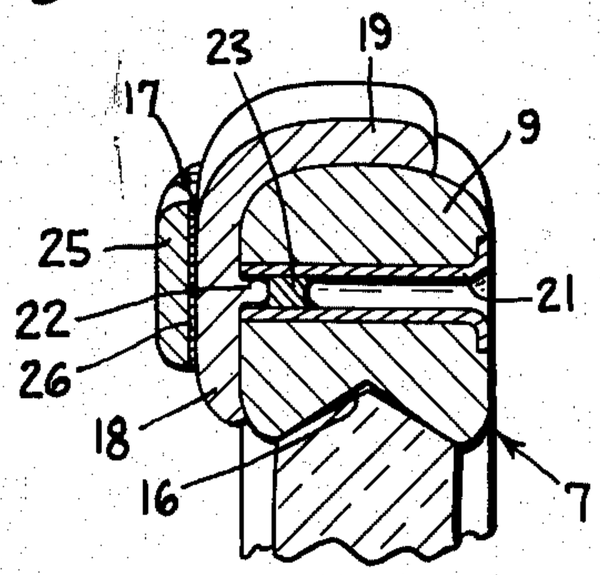

Fig. 6

INVENTOR.
EDWARD M. SPLAINE

BY Louis A. Gagnon

ATTORNEY

Patented Feb. 24, 1953

2,629,196

UNITED STATES PATENT OFFICE

2,629,196

OPHTHALMIC MOUNTING

Edward M. Splaine, Southbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Application November 4, 1948, Serial No. 58,273

2 Claims. (Cl. 41—34)

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This invention relates to ophthalmic mountings of the non-metallic type and has particular reference to reinforcing means for said mountings and method of making the same.

One of the principal objects of the invention is to provide an ophthalmic mounting with lens encircling rims formed of non-metallic material having metallic reinforcing means on the upper portions thereof and novel method of forming and attaching said reinforcing means to the mounting whereby raised areas on said means will support the front of the lenses out of engagement with a surface on which the mounting may be placed, which raised areas may be formed to different configurations for introducing a decorative effect.

Another object is to provide novel means and method of forming connection means for readily attaching metallic reinforcing means of the above character to the non-metallic rims of an ophthalmic mounting.

Another object is to provide an ophthalmic mounting with reinforcing means of the above character which may be attached in position of use after the lenses have been placed in the lens supporting rims of the mounting.

Further objects are to provide in a manner as hereinafter set forth an ophthalmic mounting of the above character which is comparatively simple in its construction, durable, thoroughly efficient in its use and capable of being readily assembled.

Other objects and advantages of the invention will become apparent from the following description taken in connection with the accompanying drawing, in which:

Fig. 1 is a front elevational view of an ophthalmic mounting embodying the present invention;

Fig. 2 is a fragmentary top plan view of the mounting shown in Fig. 1;

Fig. 3 is a fragmentary side elevation of the same;

Fig. 4 is a fragmentary sectional view taken on line 4—4 of Fig. 1 and looking in the direction of the arrows;

Fig. 5 is an exploded view of the reinforcing means and the connecting means for the same; and

Fig. 6 is a sectional view taken on line 6—6 of Fig. 2.

It is general practice in the manufacture of ophthalmic mountings to provide the non-metallic parts thereof with metallic reinforcements of various types. Most common is the practice of providing metal cores through the non-metallic

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parts, the cores being provided at the time the non-metallic part is initially formed. However, in instances where the non-metallic parts are made of a clear, transparent or translucent material the metal cores may be visible and thus detract from the appearance of the mounting.

In instances where it is not practical to insert metal cores in non-metallic parts, such parts generally are not reinforced and, therefore, become easily damaged or broken. This is true particularly of the non-metallic continuous rim members surrounding the lenses of an ophthalmic mounting which rim members must be stretched upon heating to allow the lenses to be inserted and upon cooling allowed to return to their initial shapes. Therefore, metal cores within such rim members would be impractical as well as detrimental from an appearance standpoint.

Ophthalmic mountings manufactured according to many prior art methods also are detrimental and unsatisfactory by embodying a construction such that when the mounting is placed with the front thereof in contact with a surface, the rim members, which are generally quite thin so as not to interfere with the vision of the wearer, do not prevent the lenses from contacting the surface, and the lenses may, therefore, become easily scratched or broken when the mounting is carelessly or negligently placed on a surface in this manner.

The present invention is directed to overcome the above defects by providing metallic reinforcing means for the non-metallic parts of ophthalmic mountings, which means are so constructed that when applied to the rim members of a mounting they not only reinforce the rim members but also provide raised areas for supporting the front of the lenses out of engagement with a surface on which the mounting may be placed, with the raised areas still further affording means which may be formed to different configurations for introducing an appearance enhancing decorative effect.

Referring more particularly to the drawing wherein like characters of reference designate like parts throughout the several views, the ophthalmic mounting embodying the invention comprises a front of non-metallic material having a pair of lens encircling rims 7 for supporting lenses to be positioned in said rims and joined by a bridge member 8. The rims 7 may be shaped to follow substantially the contour shape of the lenses and preferably are provided with upper portions 9 substantially thicker in cross-sectional

dimension than the lower portions 10. The rims 7 are further designed so as to have integral lugs 11 in the temporal regions thereof to which temples 12 may be pivotally secured as at 13. The rims 7 also have rearwardly extending nose pads 14 formed integral with the nasal portions thereof for supporting the mounting upon the face of the wearer.

The supporting structure including the rims 7, bridge member 8, nose pads 14 and, if desired, the temples 12 are preferably formed of non-metallic material such as zylonite, Celluloid, Bakelite or other artificial resinous material preferably possessing a relatively non-inflammable acid-resisting nature which are light in weight and readily moldable or otherwise workable. Such material will preferably have a semi-pliable or flexible nature which under action of heat may be deformed or distorted and upon cooling will return to its original shape. It is to be understood that such material may possess any desired degree of transparency or may be opaque and may be made to any desired color or colors.

A pair of lenses 15 of the desired prescriptive powers are adapted to be located in the rims 7, and to accommodate the lenses 15 the rims 7 are each provided with continuous inner V-shaped grooves 16 in which the peripheral edges of the lenses 15 are located. The edge of each of the lenses 15 is preferably provided with a V-shaped bevel (Fig. 6) around its entire periphery, the lenses thus being adapted to snugly reside within the inner V-grooved surfaces of the rims 7. In assembling a lens 15 in a rim 7, it is the general practice to heat the rim member 7, which rim has been previously shaped and provided with the inner groove, until the rim becomes softened to such an extent that it may be stretched sufficiently to permit the lens 15 to be inserted within the continuous inner groove 16 after which the rim 7 may be cooled and upon cooling will contract and assume a snug encircling relation about the periphery of the lens.

It is common knowledge that known non-metallic materials used in the manufacture of ophthalmic mountings are generally of a semi-pliable or flexible nature and are subject to deformation or distortion, it, therefore, being desirable to provide means for strengthening or reinforcing the parts made of these materials, particularly in ophthalmic mountings of the type disclosed herein having non-metallic parts formed with their cross-sectional dimensions reduced to a minimum. Therefore, there is provided in the presently described device means for reinforcing the upper portions 9 of the rims 7 and also for reinforcing the temples 12. The reinforcing means for the rims 7 comprises a metallic member 17 for each porton 9 which has a frontal portion 18 shaped to overlie the front surface of the portion 9 and having a portion shaped to the contour shape of the respective lug 11 and continuous to overlie the said lug. The members 17 also have top portions 19 which are shaped to the upper contour surfaces of the rim portions 9 and to overlie a major portion of said surfaces (Fig. 2), the rim portions 9 having their upper contour surfaces formed so that the bridge member 8 will have shoulders 20 adjacent the opposed sides thereof with the top portions 19 of the reinforcing members 17 being positioned in overlying relation to the upper contour surfaces of the rim portions 9 with an end thereof in adjacent relation with the respective shoulders 20.

The reinforcing members 17 are fixedly attached to the rim portions 9 by a plurality of tubular members 21 which tubular members 21 are adapted to extend through the portions 9, with a series of projections 22, each of which is formed on the rear of the reinforcing members 17 adjacent each tubular member 21, being adapted to enter one end of a respective tubular member 21 (Figs. 5 and 6) and to be fixedly secured thereto by solder or the like. The tubular members 21 are headed over at their other ends, the ends thereof becoming embedded in the material of the rims and so securely retaining the reinforcing members in located position.

In providing the structure with the reinforcing means, the tubular members 21 are initially provided with plugs 23 of solder or similar heat softenable means and are then located over the projections 22 on the rear of the reinforcing members 17. Heat is then applied to the tubular members 21 or to the plugs 23, which heat will cause the plugs to become softened and to flow about the projections 22. Upon cooling, the material of the plugs will harden and form a bond between the tubular member 21 and the reinforcing members 17. The assembled reinforcing members can then be attached to an ophthalmic mounting even after assembling the lenses thereto merely by drilling openings in the rim portions 9, locating the members 17 over the rim portions with the tubular members 21 projecting through the drilled openings, after which the free ends of the tubular members 21 can be headed or otherwise shaped to secure the reinforcing members to the rims.

The temples 12 can be similarly provided with elongated strengthening plates 24 (Figs. 2 and 3) which plates can be attached to the outer surfaces of the temples in the same manner as the reinforcing members 17.

While the combined frontal and upper portions 18 and 19 of the reinforcing members 17 provide a rigid structure for receiving the upper portions 9 of the rim members 7, the reinforcing members 17 can be provided with any desired configuration or decorative surface treatment to introduce a desirable aesthetic effect. This is preferably accomplished by forming the decorative feature as separate plate-like members 25 which may be secured in superimposed relation to the outer surface of the reinforcing members 17 by a layer or spots of solder or the like as at 26 (Fig. 6).

The decorative members 25 thus build up the reinforcing member to such an extent that when the completely assembled mounting is placed front down upon a surface the lenses 15 will be spaced from the surface as indicated by the dot and dash line 27 in Fig. 4.

The parts of the mounting are carefully shaped and blended with each other not only to obtain the various mechanical features set forth hereinbefore but also to have a pleasing and desirable appearance. This is of extreme importance in the construction of ophthalmic mountings since, while it is possible to introduce many desirable mechanical features, they must be so constructed and assembled as to present a pleasing appearance when on the face of the wearer. This pleasing effect is one which has introduced much difficulty in structural designs of ophthalmic mountings and is obtained in the present construction without sacrifice of any of the desired mechanical features.

It is to be understood that the upper contour

surfaces of each of the rims may be shaped so as to provide shoulders adjacent the bridge and adjacent the temporal lugs so that the upper portions of the reinforcing members may be disposed in overlying relation with the adjacent rim surface with both ends in adjacent relation with the shoulders formed thereon. The upper surfaces of the reinforcing members and the upper surface of the bridge adjacent the shoulders, preferably lie in substantially flush relation.

Therefore, by so constructing an ophthalmic mounting with the improved reinforcing means in the manner described the construction both strengthens and decorates the mounting, as well as having the additional feature of providing increased protection for the lenses thereof, and accomplishes all of the objects of the invention.

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be apparent that various omissions, substitutions and changes in the formation and details of the device illustrated and in its use may be made by those skilled in the art without departing from the spirit of the invention.

I claim:

1. In an ophthalmic mounting, the combination of a plate-like portion disposed in overlying relation with a section of the supporting structure for the lenses of said mounting, said section of the supporting structure having at least one connection opening therein, and a tubular connection member positioned in said opening, said plate-like portion having a relatively short projection on its rear surface to extend into the bore of said tubular connection member, with the diameter of said projection being slightly less than the diameter of said bore of the tubular connection member, said tubular connection member having a piece of solder therein contiguously overlying the end of said projection and having portions thereof melted to fill the area between the peripheral surface of said projection and the internal wall surface of the tubular connection member so as to secure said projection with the tubular connection member, and the opposed end of said tubular connection member being flared to overlie the opposed surface of said section of the supporting structure so as to maintain said plate-like portion in connected relation with the supporting structure.

2. A reinforcing plaque for securing in overlying relation with an elongated section of a spectacle frame for supporting the lenses of an ophthalmic mounting, said elongated section having spaced connection openings therein, and the plaque comprising an elongated plate-like member having spaced relatively short projections on its rear surface and tubular connection members adapted to be positioned within said opening of the section of the supporting structure, said relatively short projections extending into the bore of each tubular connection member and being slightly less than the diameter of the bore of said tubular connection member, said tubular connection member having a piece of solder therein contiguously related with the end of said projection and having portions thereof melted to fill the area between the peripheral surface of said projection and the internal wall surface of the tubular connection member so as to secure said projection with the tubular connection member, and the opposed ends of said tubular connection members being hollow whereby they may be flared to overlie the opposed surface of said section of the supporting structure so as to maintain said plate-like portion in connected relation with the supporting structure.

EDWARD M. SPLAINE.

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