May 26, 1942. G. P. KIMMEL 2,284,524

OPHTHALMIC MOUNTING

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Fig. 1.

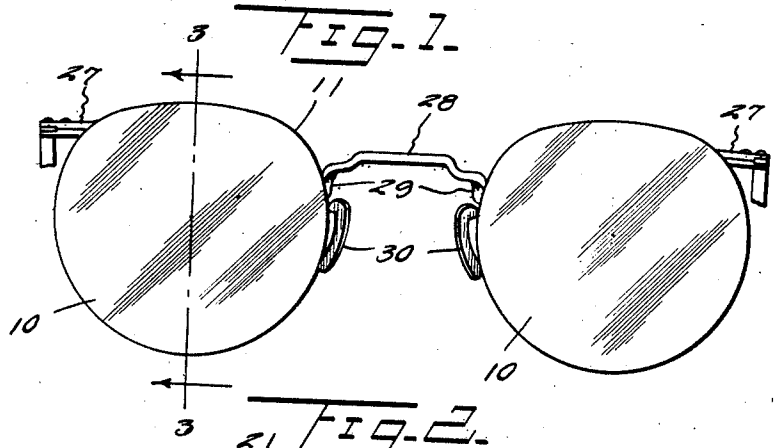


Fig. 2.

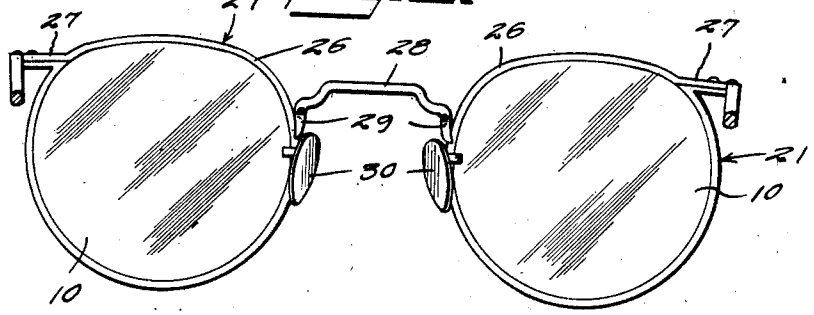


Fig. 3.

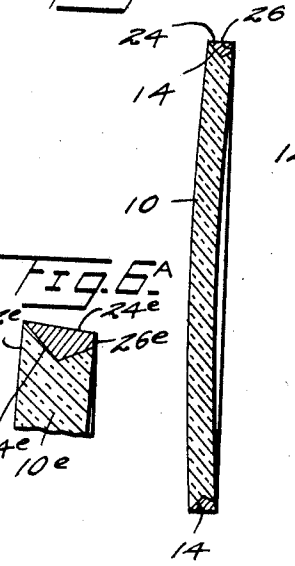


Fig. 4.

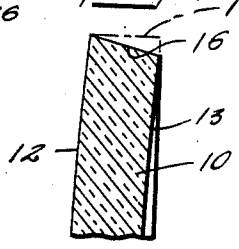


Fig. 5.

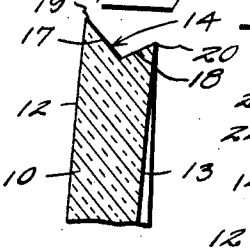


Fig. 6.

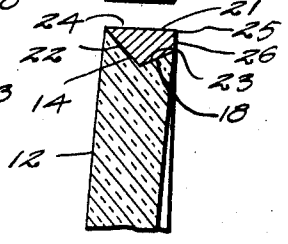


Fig. 6A.

Inventor

George P. Kimmel

By Kimmel & Crowell Attorneys

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Fig. 7.

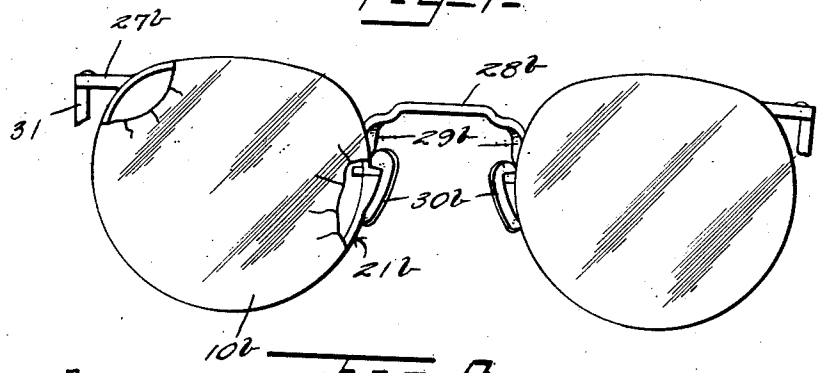


Fig. 8.

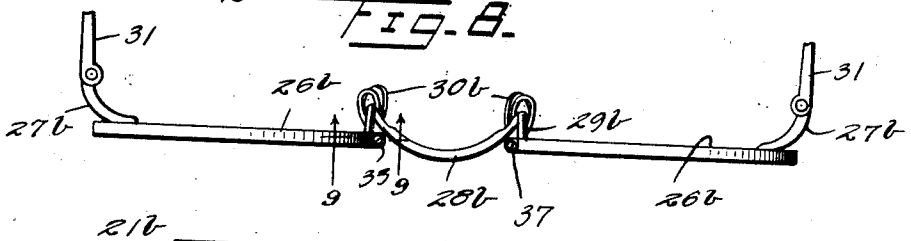


Fig. 9.

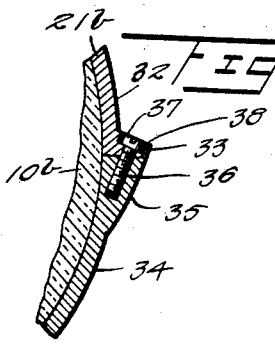
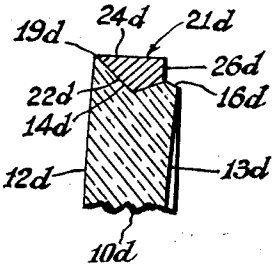


Fig. 10.



Inventor

George P. Kimmel

By Kimmel & Crowell

Attorneys

Patented May 26, 1942

2,284,524

UNITED STATES PATENT OFFICE

2,284,524

OPHTHALMIC MOUNTING

George P. Kimmel, Brookeville, Md., assignor to
The Ful-Vue Sales Company, Providence, R. I.

Application October 25, 1939, Serial No. 301,242

3 Claims. (Cl. 88—47)

This invention relates to an ophthalmic mounting and more particularly to a mounting in the form of an eyewire which is invisible from the front of the mounting.

This invention is a continuation in part of my co-pending application, Serial Number 298,485, filed October 7, 1939, for Ophthalmic mounting.

An object of this invention is to provide a substantially invisible eyewire which is so constructed that it will have sufficient strength to firmly hold the endpieces and bridge when such elements are secured to the eyewire.

Another object of the invention is to provide an eyewire having a polygonal configuration in transverse section with an acute edge thereof substantially flush with the front edge of the lens and extending rearwardly therefrom in such a manner as to be substantially invisible from the front.

A further object of this invention is to provide in combination an eyewire and a lens, the lens having a groove in the marginal edge thereof, provided with the forward edge of greater height than the rear edge, the eyewire having a width equal to the width of the marginal edge of the lens and extending rearwardly from the front face of the lens in a manner to substantially conceal the eyewire.

A still further object of this invention is to provide a concealed eyewire structure which is so constructed that the temples, endpieces and bridge or bridge attachments may be secured thereto.

A further object of this invention is to provide an eyewire which, when engaged with a lens, is substantially invisible from the front of the lens and which is so constructed that a standard form of groove may be formed in the edge of the lens to receive the eyewire irrespective of the width or thickness of the lens.

A further object of this invention is to provide an eyewire structure which may be connected with temples and bridges of different types, in certain types being connected to the temples through endpieces secured to the eyewire, and in certain others connected only to the bridge as where a resilient bridge is used.

Embodying the objects aforesaid and others which may hereinafter appear, the invention aforesaid consists of the novel construction, combination and arrangements of parts to be more specifically referred to and illustrated in the accompanying drawings, wherein are shown embodiments of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a detail front elevation of an ophthalmic mounting constructed according to an embodiment of this invention;

Figure 2 is a detail rear elevation of the mounting;

Figure 3 is a sectional view taken on line 3—3 of Figure 1;

Figure 4 is a sectional view of a lens showing the first step in the grooving operation;

Figure 5 is a sectional view showing the second step in the grooving operation;

Figure 6 is a fragmentary sectional view showing the eyewire or rim seated in the lens groove;

Figure 6—A is a fragmentary sectional view similar to Figure 6 wherein the outer face or long side of the eyewire is disposed at an acute angle relative to the outer or forward face of the lens;

Figure 7 is a detail front elevational view, partly broken away, of a modified form of ophthalmic mounting;

Figure 8 is a top plan of the mounting shown in Figure 7;

Figure 9 is an enlarged fragmentary sectional view, taken on the line 9—9 of Figure 8; and

Figure 10 is a fragmentary sectional view of a lens eyewire embodying this invention wherein the lens is wider than the width of the eyewire.

Referring to the drawings numeral 10 designates generally a lens which is mounted in a frame structure generally designated 11. The lens 10 may be provided with any suitable marginal configuration and between the front face 12 and the rear face 13 thereof the marginal edge of the lens 10 is formed with a groove, generally designated as 14. This groove 14, as shown in Figures 4 and 5, may be formed by grinding the lens edge in a known manner to provide a groove of a transverse cross sectional contour as shown or by initially grinding or cutting the square edge 15 of the lens on an angle so that an inclined face 16 will be provided which inclines inwardly from the outer face 12 of the lens. This inclined face 16 forms the inner face 13 of the lens with a substantially smaller area than the outer face 12. After the lens 10 has been ground or cut on the angle 16 a grooving tool is engaged with the inclined edge 16 so as to provide a groove substantially V-shaped in transverse section, with the outer side 17 thereof relatively longer than the inner side 18. The outer side 17 of the groove 14 forms

a relatively sharp front edge 19 and the shoulder face 18 of the groove 14 forms a relatively sharp inner edge 20. The angle between the face 18 and the inner face 13 of the lens is substantially greater than the angle between the outer face 17 of the groove 14 and the outer face 12 of the lens.

An eyewire 21 is adapted to engage in the groove 14 and this eyewire 21 is a polygonal configuration in transverse section, being provided with groove engaging faces 22 and 23 which are inclined relative to each other at substantially the same angle as the inclination of the faces 17 and 18 of the groove 14, so that the eyewire or rim 21 will snugly seat in the groove 14. The forward edge 24 of the eyewire 21 is substantially flush with the sharp edge 19 and the upper face 25 of the eyewire 21 extends rearwardly in substantially a horizontal plane so that when the rim or eyewire 21 is seated in the groove 14 the eyewire 21 will be substantially invisible from the front of the lens. The eyewire 21 is provided with a rear face 26 disposed at substantially right angles to the outer face 25 and this rear face provides an area to which the endpieces 27 may be secured in any suitable manner. Preferably, these endpieces 27 are soldered or otherwise firmly secured to the rear face 26 of the eyewire.

The bridge 28 is adapted to have the opposite ends 29 thereof secured to the rear face 26 of each eyewire 21 on the nasal side of the eyewire 21 and nose pieces 30 may also be secured to the rear face 26 of the rim or eyewire 21 below the lower ends 29 of the bridge 28.

In Figures 7, 8, and 9 there is disclosed an ophthalmic mounting comprising a bridge 28*b* which is secured at the opposite ends 29*b* thereof to the rear face 26*b* of the two eyewires 21*b*. These eyewires 21*b* are similar to the eyewires 21 and it is believed that the description of the eyewires 21 will apply equally as well to the eyewires 21*b*.

Endpieces 27*b* are secured at their inner ends to the rear faces 26*b* of the eyewires 21*b* and project outwardly and rearwardly being formed on a rearward curvature and temples 31 are adapted to be fixedly secured to the rear ends of the endpieces 27*b*. In the present instance the eyewire 21*b* is split at the nasal side thereof, as shown in Figure 9. One end 32 of the eyewire 21*b* is provided with an enlargement 33 and the other end 34 is also provided with an enlargement 35. The confronting ends of the eyewire members 32 and 34 are tightly secured together by means of a screw 36 which has the head 37 thereof counter-sunk in a socket 38 provided in the enlargement 33. Preferably, the screw 36 is disposed on an inclination to the vertical, as shown in Figure 9, being inclined inwardly with respect to the lens 10*b*. By splitting the eyewire 21*b* at the nasal side thereof, the endpieces 27*b* may be made of lighter construction and of streamline effect.

In Figure 10 there is disclosed an eyewire 21*d* which is similar in every detail to the eyewire 21, being of polygonal configuration in transverse section, and the obtusely related sides of the eyewire 21*d* are adapted to snugly engage in a V-shaped groove 14*d* which is formed in the marginal edge of the lens 10*d*. In the present instance the eyewire 21*d* is relatively narrower in width than the thickness of the lens 10*d*. The apex of the angle formed between the sides 22*d* and 24*d* of the eyewire 21*d* is adapted to be substantially flush with the edge 19*d* of the lens 10*d*. The rear face or small side 26*d* of the eyewire 21*d* is positioned forwardly of the rear face 13*d* of a lens 10*d* and in the grinding or formation of the groove 14*d* the marginal edge of the lens 10*d* is initially ground on a bevel after the manner shown in Figure 4. Due to the fact that the eyewire 21*d* is of a width such that the long side 24*d* thereof will not extend from the front face 12*d* to the rear face 13*d*, thus leaving a bevelled edge portion 16*d* extending rearwardly from the short side or rear face 26*d* of the eyewire 21*d*, it will, therefore, be apparent that the eyewire 21*d* may be made of a size for use with lenses of normal thickness but that with lenses of greater thickness than the width of the eyewire, the eyewire can, nevertheless, be snugly engaged with the lens and when mounted on the lens will be substantially invisible from the front thereof. This is due to the fact that in grinding or cutting the groove 14*d* in a thick lens the grinding tool is arranged to cut the groove in such a manner that the apex of the angle between the sides 22*d* and 24*d* of the eyewire will be flush with the marginal edge 19*d* of the lens 10*d*.

In Figure 6—A there is disclosed an eyewire similar to the eyewire 21 shown in Figure 6, but in this form the outer side 24*e* is disposed at an acute angle relative to the plane of the forward face 12*e* of the lens 10*e*. The rear face or short side 26*e* projects outwardly of the groove 14*e* a sufficient distance so that the bridge, nose pads and temple endpieces may be attached thereto.

By inclining the outer side of the eyewire at an acute angle relative to the plane of the forward face of the lens, as shown in Figure 6—A the eyewire is more completely concealed when viewed from the front.

In the use of this mounting structure the eyewire 21 may, if desired, be initially split and secured together in the conventional manner at the endpiece 27. As hereinbefore stated the area of the rear face 13 will be substantially less than the area of the front face 12.

The bridge 28 has the opposite ends 29 thereof soldered or otherwise fixedly secured to the exposed rear face 26 of the eyewire which projects upwardly from the corner 20. The arms of the nose pads 30 may also be secured to the eyewire 21 below the bridge 28 and still the eyewire 21 may be secured within the groove of each lens 10.

With a construction of this kind the front face of each lens 10 will substantially conceal the eyewire 21 so that the mounting structure herein disclosed will provide a structure wherein the eyewires forming the frame of the mounting will be substantially invisible from the front.

A mounting, constructed according to this invention, will provide a strong mounting due to the fact that the eyewire 21 may be made sufficiently thick to hold the endpieces, bridge and nose pieces.

What I claim is:

1. In spectacles, eyeglasses and the like, in combination a pair of lenses, a pair of eyewires, temple connections, and a bridge, said lenses each having front and rear faces, top, bottom, nasal and temporal side portions, the marginal edge of each lens being formed with a groove having the front edge thereof substantially higher than the rear edge, said groove having a portion below the inner edge of the lens, said eye-

wires having an outer side extending substantially horizontally rearwardly from the front edge of said groove, each eyewire having a rear side extending above and substantially coplanar with the rear face of a lens to thereby provide a surface to which said temple connections and bridge may be secured, and each eyewire being of a cross section complementary to that of the lens groove whereby the lens will be connected to the eyewire when encircled thereby.

2. In spectacles, eyeglasses and the like, of the type having a pair of lenses, eyewires, a bridge and temple connections, with the lenses having front and rear surfaces and a grooved edge, the front edge of the groove being higher than the rear edge and the groove having a portion below the rear edge of the lens; an eyewire having a cross-section complementary to a lens groove of the character aforesaid, for encircling said lens to thereby connect the lens to the eyewire, the said eyewire having an inner surface for contacting the lens edge in the groove thereof, an outer surface and a rear surface, said rear surface being substantially co-planar with the rear surface of a lens when connected therewith and of an extent above the rear edge of a said lens substantially equal to the difference in height between the front and the rear surfaces of the lens, said rear surface of said eyewire thereby providing a surface to which temple connections and a bridge may be secured rearwardly of said lenses.

3. In spectacles, eyeglasses and the like, of the type having a pair of circumferentially grooved lenses in which the front surface of the lens has a greater area than the rear surface, eyewires, a bridge and temple connections, with the eyewires being complementary to the groove in cross-section and having an inner surface, for contacting the lens edge in the groove thereof, an outer surface and a rear surface substantially co-planar with the rear surface of a lens when connected therewith, said rear surface being equal substantially to the difference in the area of the front and rear surfaces of said lens and extending above the rear edge of said lens groove; a circumferentially grooved lens, said groove having a pair of walls of unequal height, the height of the front wall being greater than that of the rear wall and a portion of said groove extending below the rear wall whereby when said lenses are encompassed by the said eyewires they will be retained therein and the said rear surfaces of said eyewires will be exposed for the attachment thereto of the said endpieces rearwardly of said lenses.

GEORGE P. KIMMEL.