ABSTRACT: An ophthalmic mounting is provided for tensionally securing ophthalmic lenses thereto by means which comprises tension spring members having at least three bendable bracket members extending therefrom and directed across the edge portion of the lens and bent over to engage a portion of the surface thereof and arranged thereon to tensionally engage opposite side portions of the lens, one of the side portions of the rim member having at least two bracket members which are arranged at points above and below the longest horizontal diameter of the lens and inwardly toward the opposite side portion thereof, the opposite side portion of the rim member having a bracket member arranged to rotationally engage a notch provided in that side portion of the lens, so that the last mentioned bracket member tensionally wedges the opposite side portion of the lens between the first mentioned bracket members thereon by virtue of the spring action of the rim member, whereby the lens is tensionally and releasably secured thereto and held against rock and wobble relative to the rim member and can be slidably removed therefrom by the wearer of the mounting.
This invention relates to ophthalmic mountings of the lenses of eyeglasses and more particularly it has reference to the type that has the lenses releasably attached thereto by means of resilient rim members. In ophthalmic mountings of the type that have resilient rim members and brackets or arms, the lenses are usually provided with at least two notches or a hole and a notch, and secured to the mounting by two arms engaging the notches in the lens or a screw passing through a hole in the lens and an arm engaging a notch in the lens respectively. Such mountings have the common fault that the notches in the lens must be exactly located therein to have the rim members in uniform peripheral alignment along the edge portion of the lens. The same is true when a hole and notch is employed. Another fault of the type of mounting in which the lens has two notches is that, in order to guard against the lens being accidentally dislodged from the mounting, the amount of tension of the rim member urging the arms or bracket members into engagement with the notches in the lens, tends to weaken the lens so that breakage or chipping of the lens occurs more frequently.

One of the principle objects of my invention is to overcome these faults and in addition provide other features and advantages. Another object of this invention is to provide a mounting in which lenses can be easily and safely removed and replaced by the wearer, whereby different types of lenses such as colored lenses, fashion tinted lenses, reading lenses, distant lenses, bifocal lenses and other types of special lenses all of which can be interchanged in the same mounting. Another object is to provide a mounting to which lenses can easily be mounted and adjustments can be made whereby the assembler does not require great skill or accuracy to obtain a better looking or more accurate assembly of the lenses to the mounting. Another object of my invention is to provide a mounting in which lenses of different sizes can be attached. The different sizes of the lens may be smaller or larger within a reasonable range of sizes, thus the optician is able to carry a smaller inventory. Another object is to provide a mounting in which the lenses will be less apt to chip or break, yet be firmly held against wobble since the lenses are secured by resilient rim members wedging a portion of the lenses between at least two bracket members attached to the rim members on the one side of the lens. Another object of my invention is to provide a modified form of my mounting for those persons who require only reading lenses in which case the distant vision is blurred through the lenses. Usually frames for this use have rims across the top of the lens which obstruct the vision when looking straight ahead. In my mounting the top edge of the lens where the eye changes its fixation from near to far is unobstructed.

These and other objects and advantages of my invention reside in the novel arrangement of the parts, and features of construction which will be more fully understood from the accompanying drawing and the following description and claims. Referring to the drawing:

FIG. 1 is a perspective view of a mounting embodying my invention.
FIG. 2 is a front view of a portion of the mounting with a lens attached.
FIG. 3 is a fragmentary enlarged sectional view taken on line 1-3 of FIG. 2.
FIG. 4 is a fragmentary enlarged sectional view taken on line 4-4 of FIG. 2.
FIG. 5 is a fragmentary enlarged sectional view of the bracket member and its relationship to the notch in the lens.
FIG. 6 is a front view of a portion of the mounting with a lens attached thereto in a modified form.
FIG. 7 is an another view similar to FIG. 6 of another modified form of the mounting, showing the dash line lens partially removed therefrom.
FIG. 8 is a front view of a portion of the mounting showing another modified form of my invention.

Referring to the drawing the same numbers designate similar parts in the different views. In FIG. 1, bridge 1 connects a pair of spaced resilient rim members 2, 3. A pair of temples 4 are attached to the temporal side portions thereof, and a pair of nose pads 5 are attached to the nasal portions of the rim members. Each of the rim members is provided with at least three bracket members 6, 7 and 8 extending forwardly therefrom. Said bracket members are supplied to the optician long enough to accommodate the thickest lens practical for this type of mounting. In all of the forms of my invention the rim members are formed so that the distance between each of the bracket members is less when the rim member is in its normal state than when a lens is attached thereto. The bracket members 6 and 7 are attached to the outer side surface of the rim member 2 as shown in FIG. 4, and at points above and below the longest horizontal diameter of the lens. The bracket member 8 is attached to a portion of the front surface of the rim member 2 as shown in FIG. 3, so that when the lens 9 is positioned against the front surface of the rim member 2 and held thereto by the bracket member 6, 7 and 8, the outer surface of the rim member 2 and the corresponding edge portion of the lens 9 are in substantial alignment when viewed from the front. The bracket member 8 is arranged to engage the notch formed in the temporal side portion of the lens 9 as shown in FIGS. 3 and 5. The notch 10 in the lens 9 is so formed so that the bracket member 8 can partially rotate therein without chipping that portion of the lens in contact therewith. In assembling the lens to the mounting, the lens is guided over the front surface of the rim member 2 between the bracket members 6 and 8 until the upper edge of the lens engages the bracket member 7. With the lens in position in relation to the rim member, the bracket members are marked for the thickness of the lens and the lens is secured for the location of the notch in the lens. The lens is removed from the mounting and the bracket members are bent over at an angle so as to engage the front surface of the lens as shown in FIGS. 3 and 4. The portion of the bracket members overlying the front surface of the lens is cut off as shown in the several views of the drawing. The exact location of the notch in the lens and the depth of the notch therein is difficult for some opticians not skilled in the art or for skilled technicians who are rushed by too much work. In my device adjustments can be made whereby a neat and satisfactory alignment of the outer surface of the rim member and the corresponding edge portion of the lens can be attained, should the notch in the lens be improperly formed since the bracket members 6 and 7 are not fixed to the edge portion of the lens in any one spot. By reshaping the rim member any portion thereon can be raised or lowered. In the several views the bracket member 6 and 7 are shown located at points below and above the longest horizontal diameter of the lens 9, so that the portion of the lens between the bracket members is wedged therebetween by the spring action of the resilient rim member 2 when the bracket member 8 is engaged in the notch 10 located in the opposite side edge portion of the lens 9. The lens 9 is removed from the mounting by holding the nasal portion of the mounting and rotating the lens upon the bracket member 8 while guiding the lens outwardly therefrom as shown in FIG. 7 by the dash line lens 12. The lens is attached by reversing the procedure. The inserting of the lens and removal of same from the mounting is so simple and safe that it can be accomplished by the wearer so that lenses for different purposes can be readily interchanged as desired.

A modified form of my invention is shown in FIG. 6. In this arrangement the rim member 3 is provided with at least two bracket members 6 and 7 on the temporal side and at least two bracket members 6 and 7 on the temporal side. Each of the bracket members are attached to the outer surface of the rim member and at points below and above the longest horizontal diameter of the lens as shown in the drawing. By virtue of the resilience of the rim member 3, the nasal and temporal side portions of the lens 11 are wedged between the respective bracket members in contact therewith. The lens can be
removed therefrom by rotating it anticlockwise, pulling and guiding it downwardly and out as shown in FIG. 7 by the dash line lens 12'. The lens is reinserted by reversing the procedure.

In FIG. 7, another modification is shown in which the rim member 3 is provided with three bracket members 6, 7 and 8. In this form of my invention the bracket members are attached to the rim member 3 at points so that the distance between any two bracket members is less than the diameter of the lens 12. The lens is interchanged in the same manner as described in the foregoing forms of my invention.

In FIG. 8 is shown another modification of my invention, wherein the resilient rim member 3 is arranged and formed so that the upper central portion of the lens 13 is unobstructed by the rim member 3. The rim member 3 is provided with bracket members 6 and 7 which extend forwardly therefrom and arranged to engage the front surface of the lens 13. The lens 13 is releasably secured to the resilient rim member 3 in the same manner described for the form of my invention shown in FIG. 6, except that the lens is removed from the rim member through the opening at the top thereof. In this form of my invention a bracket member such as the one shown in FIG. 2 at 8, and a notch such as the one shown in FIG. 5 at 10, in the edge portion of the lens 9 to receptacle the bracket member 8 can be provided in place of either set of side bracket members and 7. The bracket member 8 is attached to the rim member 3 at a point on the opposite side from the other bracket members 6, 7. In this form of my invention the mounting is used for presbyopes who need only reading or near vision prescriptions. With such prescriptions the distant vision is blurred through the lens so that an arrangement whereby the wearer can look over the top edge of the lens is advantageous and having the least possible obstruction for the eye to look over when the eye changes from distant vision to near vision is desirable. Obviously the arrangement shown in FIG. 8 overcomes the fault and disadvantages of a mounting having a rim member above the central portion of the lens and has the advantages described in FIG. 1 of my invention.

Applicant wishes to point out that in the forms of my invention using a notch in the lens, should the bracket member 8 be accidentally knocked out of the notch in the lens, the lens will still remain attached thereto until the bracket member can be returned to the notch in the lens.

In the several views applicant has shown the preferred arrangement of his invention and does not limit himself to these applications. It is understood that other modifications might be conceived embodying the general principles of this invention. From the foregoing and accompanying drawing it is apparent that I have provided an ophthalmic mounting in accordance with the objects of my invention.

I claim:

1. An ophthalmic mounting comprising a pair of spaced tension spring rim members connected by a bridge member, each of said rim members being formed so as to extend partially along the periphery of a lens, said lens being positioned against the front surface of said rim member, each of said rim members having means tensionally securing the nasal portion and means tensionally securing the temporal side portion of said lens thereto, one of said means comprising at least two bracket members extending forwardly therefrom to engage the edge portion of said lens and bent over to engage a portion of the surface thereof and attached to said rim member at points above said points of attachment of said bracket members to said rim members being such that a portion of the lens extends laterally substantially beyond the outer surface of the bracket members and below the longest horizontal diameter of said lens so that the portion of said lens in contact with and between said bracket members is tensionally engaged therein by the tension of said rim member, each of said lenses being releasably secured to said rim members by virtue of the spring of said rim members, whereby the lenses can be slideably removed therefrom and interchanged with lenses for different purposes as desired by the wearer.

2. An ophthalmic mounting as set forth in claim 1, one of said means comprising at least two bracket members extending forwardly of said rim member so as to engage the edge portion of said lens and bent over at an angle to overlie the front surface thereof, said bracket members being connected to said rim members at points above and below the longest horizontal diameter of said lens, the other of said means comprising a bracket member attached to the opposite side portion of said rim member and arranged to tensionally and rotatably engage a notch formed in the edge portion of said lens, whereby the portion of said lens in contact between said first mentioned bracket members is releasably wedged therebetween, so that said lenses can be slideably removed therefrom by rotating the lenses about the bracket member engaging the notch in the lens and guiding the lens therefrom.

3. An ophthalmic mounting as set forth in claim 2, the bracket members engaging the edge portion of said lens being attached to the outer surface of said rim member and the bracket member engaging the notch in the lens being attached to a portion of the front surface of said rim member so that the edge portion of said lens and the corresponding outer surface of said rim member are in substantial alignment when viewed from the front.

4. An ophthalmic mounting as set forth in claim 1, each of said means comprising bracket members extending forwardly from the nasal and temporal side portions thereof so as to engage the edge portion of said lens at points above and below the longest horizontal diameter of the lens, and arranged so that the nasal and temporal side portions of the lens are releasably wedged therebetween by the tension of said rim member.

5. An ophthalmic mounting as set forth in claim 1, each of said rim members being provided with at least three bracket members, said bracket members being arranged to releasably hold the edge portion of said lens, the distance between any of said bracket members being less than any diameter of said lens, whereby said lens is releasably secured therein and the distance between two of said bracket members can be increased by springing the end portions thereof apart so that said lens can be slideably removed therefrom and replaced by another lens, such as changing from white lenses to colored lenses.

6. An ophthalmic mounting as set forth in claim 1, each of said rim members being positioned against the rear surface of said lens adjacent the edge portion thereof and arranged so that the upper central portion of said lens is unobstructed by said rim member, whereby the eye can change its fixation from through the lens to above the lens without interference from said rim member, such being adapted particularly for presbyopic corrections.

7. An ophthalmic mounting as set forth in claim 1, each of said rim members being positioned rearwardly of and extending along the nasal, lower, temporal and a portion of the upper edges of said lens, so that only two spaced portions of said rim member are along the upper edge of the lens, whereby the edge portion of the lens between the two spaced portions of said rim member is unobstructed, bracket members extending from the nasal and temporal side portions of said rim member and arranged to releasably engage the edge portion of said lens at points above and below the longest diameter thereof, so that the portion of said lens between said bracket members is releasably wedged therebetween.

8. An ophthalmic mounting as set forth in claim 1, each of said rim members being provided with means for releasably securing the nasal and temporal side portions of a lens thereto, at least one of said means extending forwardly from said rim member and arranged to engage a notch formed in the edge portion of said lens and bent over at an angle to overlie a portion of the front surface of the lens, said rim member being positioned against the rear surface of the lens and formed to extend along a portion of the upper periphery thereof, so that the upper central portion of said lens is unobstructed by said rim member, whereby the wearer's eye can change its fixation
from looking through the lens to looking over the lens without interference from said rim member, such being particularly adapted for presbyopic corrections.

9. An ophthalmic mounting as set forth in claim 1, each of said rim members being positioned rearwardly of and extending along the nasal, lower, temporal and a portion of the upper edges of a lens, so that only two spaced portions of said rim member are along the upper edge of said lens, whereby the edge portion of said lens between the two spaced end portions of said rim member is unobstructed, bracket members extending forwardly from one of the side portions of said rim member over the edge of said lens and bent over at an angle to engage the front surface thereof, said bracket members being attached to said rim member at points above and below the longest horizontal diameter of said lens, the opposite side portion of said rim member having a bracket member extending forwardly therefrom and arranged to tensionally and releaseably engage a notch formed in the side edge portion of said lens, whereby said lens is tensionally and releasably wedged between the first mentioned bracket members.