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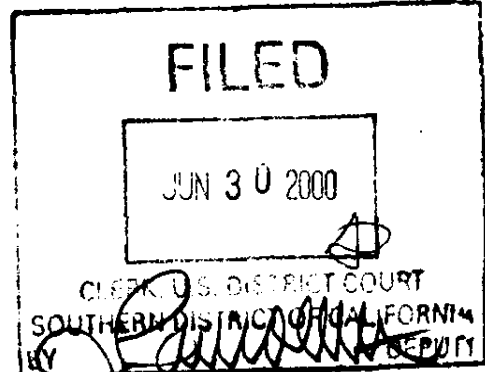
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3:00-CV-01317 OAKLEY INC V. MURRAY

1

CMP.

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 11 Attorneys for Plaintiff



12 IN THE UNITED STATES DISTRICT COURT
 13 FOR THE SOUTHERN DISTRICT OF CALIFORNIA

14 OAKLEY, INC., a Washington
 15 corporation,

16 Plaintiff,

17 vs.

18 ASHLEY MURRAY, individually and
 19 dba The Gift Zone and DAWN
 20 MURRAY, individually and dba The
 21 Gift Zone,

22 Defendants.

CIVIL ACTION NO.

00 CV 1317 JM (POR)

COMPLAINT FOR PATENT
 INFRINGEMENT

DEMAND FOR JURY TRIAL

23 Plaintiff Oakley, Inc. (hereinafter referred to as
 24 "Oakley") hereby complains of Defendants Ashley Murray and Dawn
 25 Murray (hereinafter collectively referred to as "Murray") and
 26 alleges as follows:

27 JURISDICTION AND VENUE

28 1. Jurisdiction over this action is founded upon 15
 U.S.C. § 1121, and 28 U.S.C. §§ 1331, 1333, and 1367. Venue is
 proper under 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. §

1 1400(b), this claim having arisen and Defendant doing business
2 in this district.

3 **THE PARTIES**

4 2. Plaintiff Oakley, Inc. is a corporation organized and
5 existing under the laws of the State of Washington, having its
6 principal place of business at One Icon, Foothill Ranch, CA
7 92610. Plaintiff Oakley is doing business within this judicial
8 district.

9 3. Defendants Murray is a corporation organized and
10 existing under the laws of the State of California having its
11 principal place of business located at 1886 ½ Pacific Coast
12 Highway, Redondo Beach, CA 90277. Defendants are currently
13 selling their sunglass products at the Del Mar Fair in San
14 Diego County, California.

15 **FACTUAL BACKGROUND**

16 4. In 1990, OAKLEY introduced a line of sunglasses under
17 the trade name "M Frame" which has enjoyed substantial
18 commercial success which OAKLEY expects will continue.

19 5. In 1993, Oakley introduced a line of sunglasses under
20 the trade name "e Wires". The "e Wires" have enjoyed
21 substantial success, which is also expected to continue.

22 6. In 1998, Oakley introduced a line of sunglasses under
23 the trade name "Minutes" which has also enjoyed substantial
24 commercial success which Oakley also expects will continue.

25 7. Oakley is the owner by assignment of U.S. Patent No.
26 D331,587 duly and lawfully issued on December 8, 1992
27 describing and claiming the invention entitled "EYEGLASS FRAME"
28 protecting the sunglass frame design marketed by Oakley under

1 the name "M Frame". A correct copy of U.S. Patent No. D331,587
2 is attached hereto as Exhibit 1.

3 8. Oakley is the owner by assignment of U.S. Patent No.
4 5,208,614 duly and lawfully issued on May 4, 1993, describing
5 and claiming the invention entitled "CONCAVELY INDENTED LENSES
6 FOR EYEWEAR" protecting the sunglasses marketed by Oakley under
7 the trade name "M Frame". A correct copy of U.S. Patent No.
8 5,208,614 is attached hereto as Exhibit 2.

9 9. Oakley is the owner by assignment of U.S. Design
10 Patent No. D324,528 duly and lawfully issued on March 10, 1992,
11 describing and claiming the invention entitled "EYEGLASSES"
12 protecting a sunglass design marketed by Oakley under the trade
13 name "M Frame". A correct copy of U.S. Patent No. D324,528 is
14 attached hereto as Exhibit 3.

15 10. Oakley is the owner by assignment of U.S. Design
16 Patent No. D331,763 duly and lawfully issued on December 15,
17 1992, describing and claiming the invention entitled "UNITARY
18 EYEGLASS LENS" protecting a sunglass lens design marketed by
19 Oakley under the trade name "M Frame". A correct copy of U.S.
20 Patent No. D331,763 is attached hereto as Exhibit 4.

21 11. Oakley is the owner by assignment of U.S. Patent No.
22 4,867,550 duly and lawfully issued on September 19, 1989,
23 describing and claiming the invention entitled "TOROIDAL LENS
24 FOR EYEWEAR" protecting the sunglasses marketed by Oakley under
25 the name "M Frame". A correct copy of U.S. Patent No.
26 4,867,550 is attached hereto as Exhibit 5.

27 12. Oakley is the owner by assignment of U.S. Patent No.
28 5,054,903 duly and lawfully issued on October 8, 1991,

describing and claiming the invention entitled "EYEWEAR TRACTION DEVICE" protecting the sunglasses marketed by Oakley under the name "M Frame". A correct copy of U.S. Patent No. 5,054,903 is attached hereto as Exhibit 6.

13. Oakley is the owner by assignment of U.S. Patent No. D328,468 duly and lawfully issued on August 4, 1992, describing and claiming the invention entitled "UNITARY EYEGLASS LENS" protecting the sunglass lense design marketed by Oakley under the name "M Frame". A correct copy of U.S. Patent No. D328,468 is attached hereto as Exhibit 7.

14. Oakley is the owner by assignment of U.S. Patent No. D330,903 and lawfully issued on November 10, 1992, describing and claiming the invention entitled "EYEGLASSES" protecting the sunglasses marketed by Oakley under the name "M Frame". A correct copy of U.S. Patent No. D330,903 is attached hereto as Exhibit 8.

15. Oakley is the owner by assignment of U.S. Patent No. D374,884 duly and lawfully issued on October 22, 1996 describing and claiming the invention entitled "EARSTEMS" protecting the earstem design marketed by Oakley under the name "M Frame". A correct copy of U.S. Patent No. D374,884 is attached hereto as Exhibit 9.

16. Oakley is informed and believes and thereupon alleges "M Frame" copy sunglass models sold by Defendant embody the subject matter claimed in Oakley's design and utility patents referred to above without any license thereunder and is thereby infringing said patents.

... ..

1 17. Oakley is the owner by assignment of U.S. Patent No.
2 5,137,342 duly and lawfully issued on August 11, 1992,
3 describing and claiming the invention entitled "EYEWEAR
4 TRACTION DEVICE" protecting eyewear traction device technology
5 incorporated in sunglasses marketed by Oakley under many trade
6 names. A correct copy of U.S. Patent No. 5,137,342 is attached
7 hereto as Exhibit 10.

8 18. Oakley is informed and believes and thereupon alleges
9 that sunglasses sold by Defendant embody the subject matter of
10 Oakley's U.S. Patent No. 5,137,342 referred to above without
11 any license thereunder and is thereby infringing said patent.
12 Oakley is informed and believes and based thereon alleges that
13 Defendant supplied said imitation Oakley sunglasses to various
14 distributors, retailers, and retail customers.

15 19. Oakley is the owner by assignment of U.S. Patent No.
16 D365,591 duly and lawfully issued on December 26, 1995
17 describing and claiming the invention entitled "EYEGLASSES"
18 protecting the sunglasses marketed by Oakley under the name "e
19 Wire". A correct copy of U.S. Patent No. D365,591 is attached
20 hereto as Exhibit 11.

21 20. Oakley is the owner by assignment of U.S. Design
22 Patent No. D376,381 duly and lawfully issued on December 10,
23 1996, describing and claiming the invention entitled "PAIR OF
24 SPECTACLES WITHOUT EARSTEMS", protecting the sunglass design
25 marketed by Oakley under the name "e Wire". A correct copy of
26 U.S. Patent No. D376,381 is attached hereto as Exhibit 12.

27 21. Oakley is informed and believes and thereupon alleges
28 that "e Wire" copy sunglass sold by Defendant embodies the

1 subject matter claimed in Oakley's design patent referred to
2 above without any license thereunder and is thereby infringing
3 said patent. Oakley is informed and believes and based thereon
4 alleges that Defendant supplied said imitation Oakley
5 sunglasses to various distributors, retailers, and retail
6 customers.

7 22. Oakley is the owner by assignment of U.S. Design
8 Patent No. D415,188 duly and lawfully issued on October 12,
9 1999, describing and claiming the invention entitled
10 "EYEGLASSES", protecting the sunglass design marketed by Oakley
11 under the name "Minutes". A correct copy of U.S. Patent No.
12 D415,188 is attached hereto as Exhibit 13.

13 23. Oakley is informed and believes and thereupon alleges
14 that "Minutes" copy sunglass sold by Defendants embodies the
15 subject matter claimed in Oakley's design patent referred to
16 above without any license thereunder and is thereby infringing
17 said patent. Oakley is informed and believes and based thereon
18 alleges that Defendants supplied said imitation Oakley
19 sunglasses to various distributors, retailers, and retail
20 customers.

21 24. Defendant has received written notice of Oakley's
22 proprietary rights in its "M Frame", "e Wire", and "Minutes"
23 design and utility patents by way of actual written notice.
24 Further, Defendants have received constructive notice of
25 Oakley's patents in that Oakley has caused said patent numbers
26 to be placed plainly on the product and/or packaging. Despite
27 said actual and constructive knowledge, Defendant has continued
28

1 to infringe Oakley's rights. On information and belief, such
2 infringement by Defendant has been willful and wanton.

3 25. Since 1990, Oakley has expended large sums of money
4 in the promotion of its "M Frame", "e Wire", and "Minutes"
5 lines of sunglasses. As a result of said promotional efforts,
6 said sunglass lines have become and are now widely known and
7 recognized in this District and elsewhere as emanating from and
8 authorized by Oakley.

9 26. Oakley's product lines are inherently distinctive in
10 appearance, and have become, through widespread public
11 acceptance, a distinctive designation of the source of origin
12 of goods offered by Oakley and an asset of incalculable value
13 as a symbol of Oakley and its quality goods and good will.

14 27. Oakley is informed and believes and thereupon alleges
15 that the Defendants' copies are designed, manufactured,
16 packaged, advertised, displayed and sold expressly to deceive
17 customers desirous of purchasing products authorized by Oakley
18 or to profit from the demand created by Oakley for the
19 ornamental and inherently distinctive features of the Oakley
20 sunglasses.

21 28. Oakley is informed and believes and based thereon
22 alleges that Defendants' copy sunglasses are inferior products
23 to the authentic Oakley sunglasses. Oakley is further informed
24 and believes and thereupon alleges that as a result of the
25 inferior quality of the "M Frame", "e Wire", and "Minutes"
26 sunglasses, they are sold in the marketplace at a lower price
27 than are the authentic Oakley sunglasses. As a result, Oakley
28 has been damaged significantly in the sunglass market.

1 29. Oakley is further informed and believes and thereupon
2 alleges that the presence of Defendants's sunglass copies in
3 the marketplace damages the value of Oakley's exclusive rights.
4 The presence of the copies in the marketplace are likely to
5 diminish the apparent exclusivity of the genuine Oakley
6 products thereby dissuading potential customers who otherwise
7 would have sought the distinctive Oakley sunglass designs.
8 Upon information and belief, such deception has misled and
9 continues to mislead and confuse many of said purchasers to buy
10 the products sold by Defendants and/or has misled non-
11 purchasers to believe the sunglass copies emanate from or are
12 authorized by Oakley.

13 30. Oakley is informed and believes and thereupon alleges
14 that the sale of the copy sunglasses has resulted in lost
15 sales, has reduced the business and profit of Oakley, and has
16 greatly injured the general reputation of Oakley due to the
17 inferior quality of the copies, all to Oakley's damage in an
18 amount not yet fully determined, but that is in excess of
19 \$75,000.00.

20 31. The exact amount of profits realized by the
21 Defendants as a result of its infringing activities, are
22 presently unknown to Oakley, as are the exact amount of damages
23 suffered by Oakley as a result of said activities. These
24 profits and damages cannot be accurately ascertained without an
25 accounting. Further, Defendants' actions are irreparably
26 injuring Oakley and will continue unless and until enjoined by
27 this court.

28

FIRST CLAIM FOR RELIEF

32. The allegations of paragraphs 1 through 31 are replied and realleged as though fully set forth herein.

33. This is a claim for patent infringement, and arises under 35 U.S.C. Sections 271 and 281.

34. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and 1338.

35. Oakley is the owner of U.S. Design Patent No. D331,587 which protects, among others, the product sold by Oakley under the trade name "M Frame". A true and correct copy of U.S. Patent No. D331,587 is attached hereto as Exhibit 1.

36. By statute, the patent is presumed to be valid and enforceable under 35 U.S.C. § 282.

37. Defendants, through their agents, employees, and servants, manufactured, imported and sold sunglasses which fall within the scope and claim contained in and without any rights or license under U.S. Patent No. D331,587.

38. Oakley is informed and believes and thereupon alleges that Defendants have willfully infringed upon Oakley's exclusive rights under said patent, with full notice and knowledge thereof. Defendants are presently selling such infringing sunglass, have refused to cease the sale thereof, and will continue to do so unless restrained therefrom by this court, all to the great loss and injury of Oakley.

39. Oakley is informed and believes and thereupon alleges that Defendants have derived, received and will continue to derive and receive from the aforesaid acts of infringement, gains, profits and advantages in an amount not presently known

1 to Oakley. By reason of the aforesaid acts of infringement,
2 Oakley has been, and will continue to be, greatly damaged.

3 40. Defendants will continue to infringe U.S. Patent No.
4 D331,587 to the great and irreparable injury of Oakley, for
5 which Oakley has no adequate remedy at law unless said
6 Defendants is enjoined by this court.

7 **SECOND CLAIM FOR RELIEF**

8 41. The allegations of paragraphs 1 through 31 are replied
9 and realleged as though fully set forth herein.

10 42. This is a claim for patent infringement, and arises
11 under 35 U.S.C. Sections 271 and 281.

12 43. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
13 1338.

14 44. Oakley is the owner of U.S. Design Patent No.
15 5,208,614 which protects, among others, the product sold by
16 Oakley under the trade name "M Frame". A true and correct copy
17 of U.S. Patent No. 5,208,614 is attached hereto as Exhibit 2.

18 45. By statute, the patent is presumed to be valid and
19 enforceable under 35 U.S.C. § 282.

20 46. Defendants, through their agents, employees, and
21 servants, manufactured, imported and sold sunglasses which fall
22 within the scope and claim contained in and without any rights
23 or license under U.S. Patent No. 5,208,614.

24 47. Oakley is informed and believes and thereupon alleges
25 that Defendants have willfully infringed upon Oakley's
26 exclusive rights under said patent, with full notice and
27 knowledge thereof. Defendants are presently selling such
28 infringing sunglass, have refused to cease the sale thereof,

1 and will continue to do so unless restrained therefrom by this
2 court, all to the great loss and injury of Oakley.

3 48. Oakley is informed and believes and thereupon alleges
4 that Defendants have derived, received and will continue to
5 derive and receive from the aforesaid acts of infringement,
6 gains, profits and advantages in an amount not presently known
7 to Oakley. By reason of the aforesaid acts of infringement,
8 Oakley has been, and will continue to be, greatly damaged.

9 49. Defendants will continue to infringe U.S. Patent No.
10 5,208,614 to the great and irreparable injury of Oakley, for
11 which Oakley has no adequate remedy at law unless said
12 Defendants is enjoined by this court.

13 **THIRD CLAIM FOR RELIEF**

14 50. The allegations of paragraphs 1 through 31 are repled
15 and realleged as though fully set forth herein.

16 51. This is a claim for patent infringement, and arises
17 under 35 U.S.C. Sections 271 and 281.

18 52. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
19 1338.

20 53. Oakley is the owner of U.S. Design Patent No.
21 D324,528 which protects, among others, the product sold by
22 Oakley under the trade name "M Frame". A true and correct copy
23 of U.S. Patent No. D324,528 is attached hereto as Exhibit 3.

24 54. By statute, the patent is presumed to be valid and
25 enforceable under 35 U.S.C. § 282.

26 55. Defendants, through their agents, employees, and
27 servants, manufactured, imported and sold sunglasses which fall
28

1 within the scope and claim contained in and without any rights
2 or license under U.S. Patent No. D324,528.

3 56. Oakley is informed and believes and thereupon alleges
4 that Defendants have willfully infringed upon Oakley's
5 exclusive rights under said patent, with full notice and
6 knowledge thereof. Defendants are presently selling such
7 infringing sunglass, have refused to cease the sale thereof,
8 and will continue to do so unless restrained therefrom by this
9 court, all to the great loss and injury of Oakley.

10 57. Oakley is informed and believes and thereupon alleges
11 that Defendants have derived, received and will continue to
12 derive and receive from the aforesaid acts of infringement,
13 gains, profits and advantages in an amount not presently known
14 to Oakley. By reason of the aforesaid acts of infringement,
15 Oakley has been, and will continue to be, greatly damaged.

16 58. Defendants will continue to infringe U.S. Patent No.
17 D324,528 to the great and irreparable injury of Oakley, for
18 which Oakley has no adequate remedy at law unless said
19 Defendants is enjoined by this court.

20 **FOURTH CLAIM FOR RELIEF**

21 59. The allegations of paragraphs 1 through 31 are repled
22 and realleged as though fully set forth herein.

23 60. This is a claim for patent infringement, and arises
24 under 35 U.S.C. Sections 271 and 281.

25 61. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
26 1338.

27 62. Oakley is the owner of U.S. Design Patent No.
28 D331,763 which protects, among others, the product sold by

1 Oakley under the trade name "M Frame". A true and correct copy
2 of U.S. Patent No. D331,763 is attached hereto as Exhibit 4.

3 63. By statute, the patent is presumed to be valid and
4 enforceable under 35 U.S.C. § 282.

5 64. Defendants, through their agents, employees, and
6 servants, manufactured, imported and sold sunglasses which fall
7 within the scope and claim contained in and without any rights
8 or license under U.S. Patent No. D331,763.

9 65. Oakley is informed and believes and thereupon alleges
10 that Defendants have willfully infringed upon Oakley's
11 exclusive rights under said patent, with full notice and
12 knowledge thereof. Defendants are presently selling such
13 infringing sunglass, have refused to cease the sale thereof,
14 and will continue to do so unless restrained therefrom by this
15 court, all to the great loss and injury of Oakley.

16 66. Oakley is informed and believes and thereupon alleges
17 that Defendants have derived, received and will continue to
18 derive and receive from the aforesaid acts of infringement,
19 gains, profits and advantages in an amount not presently known
20 to Oakley. By reason of the aforesaid acts of infringement,
21 Oakley has been, and will continue to be, greatly damaged.

22 67. Defendants will continue to infringe U.S. Patent No.
23 D331,763 to the great and irreparable injury of Oakley, for
24 which Oakley has no adequate remedy at law unless said
25 Defendants is enjoined by this court.

26 **FIFTH CLAIM FOR RELIEF**

27 68. The allegations of paragraphs 1 through 31 are repled
28 and realleged as though fully set forth herein.

1 69. This is a claim for patent infringement, and arises
2 under 35 U.S.C. Sections 271 and 281.

3 70. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
4 1338.

5 71. Oakley is the owner of U.S. Design Patent No.
6 4,867,550 which protects, among others, the product sold by
7 Oakley under the trade name "M Frame". A true and correct copy
8 of U.S. Patent No. 4,867,550 is attached hereto as Exhibit 5.

9 By statute, the patent is presumed to be valid and
10 enforceable under 35 U.S.C. § 282.

11 72. Defendants, through their agents, employees, and
12 servants, manufactured, imported and sold sunglasses which fall
13 within the scope and claim contained in and without any rights
14 or license under U.S. Patent No. 4,867,550.

15 73. Oakley is informed and believes and thereupon alleges
16 that Defendants have willfully infringed upon Oakley's
17 exclusive rights under said patent, with full notice and
18 knowledge thereof. Defendants are presently selling such
19 infringing sunglass, have refused to cease the sale thereof,
20 and will continue to do so unless restrained therefrom by this
21 court, all to the great loss and injury of Oakley.

22 74. Oakley is informed and believes and thereupon alleges
23 that Defendants have derived, received and will continue to
24 derive and receive from the aforesaid acts of infringement,
25 gains, profits and advantages in an amount not presently known
26 to Oakley. By reason of the aforesaid acts of infringement,
27 Oakley has been, and will continue to be, greatly damaged.

28

1 75. Defendants will continue to infringe U.S. Patent No.
2 4,867,550 to the great and irreparable injury of Oakley, for
3 which Oakley has no adequate remedy at law unless said
4 Defendants is enjoined by this court.

5 || SIXTH CLAIM FOR RELIEF

6 76. The allegations of paragraphs 1 through 31 are replied
7 and realleged as though fully set forth herein.

8 77. This is a claim for patent infringement, and arises
9 under 35 U.S.C. Sections 271 and 281.

10 78. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
11 1338.

79. Oakley is the owner of U.S. Design Patent No. 5,054,903 which protects, among others, the product sold by Oakley under the trade name "M Frame". A true and correct copy of U.S. Patent No. 5,054,903 is attached hereto as Exhibit 6.

16 By statute, the patent is presumed to be valid and
17 enforceable under 35 U.S.C. § 282.

80. Defendants, through their agents, employees, and servants, manufactured, imported and sold sunglasses which fall within the scope and claim contained in and without any rights or license under U.S. Patent No. 5,054,903.

81. Oakley is informed and believes and thereupon alleges that Defendants have willfully infringed upon Oakley's exclusive rights under said patent, with full notice and knowledge thereof. Defendants are presently selling such infringing sunglasses, have refused to cease the sale thereof, and will continue to do so unless restrained therefrom by this court, all to the great loss and injury of Oakley.

1 82. Oakley is informed and believes and thereupon alleges
2 that Defendants have derived, received and will continue to
3 derive and receive from the aforesaid acts of infringement,
4 gains, profits and advantages in an amount not presently known
5 to Oakley. By reason of the aforesaid acts of infringement,
6 Oakley has been, and will continue to be, greatly damaged.

7 83. Defendants will continue to infringe U.S. Patent No.
8 5,054,903 to the great and irreparable injury of Oakley, for
9 which Oakley has no adequate remedy at law unless said
10 Defendants is enjoined by this court.

11 **SEVENTH CLAIM FOR RELIEF**

12 84. The allegations of paragraphs 1 through 31 are repled
13 and realleged as though fully set forth herein.

14 85. This is a claim for patent infringement, and arises
15 under 35 U.S.C. Sections 271 and 281.

16 86. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
17 1338.

18 87. Oakley is the owner of U.S. Design Patent No.
19 D328,468 which protects, among others, the product sold by
20 Oakley under the trade name "M Frame". A true and correct copy
21 of U.S. Patent No. D328,468 is attached hereto as Exhibit 7.

22 88. By statute, the patent is presumed to be valid and
23 enforceable under 35 U.S.C. § 282.

24 89. Defendants, through their agents, employees, and
25 servants, manufactured, imported and sold sunglasses which fall
26 within the scope and claim contained in and without any rights
27 or license under U.S. Patent No. D328,468.

28

1 90. Oakley is informed and believes and thereupon alleges
2 that Defendants have willfully infringed upon Oakley's
3 exclusive rights under said patent, with full notice and
4 knowledge thereof. Defendants are presently selling such
5 infringing sunglass, have refused to cease the sale thereof,
6 and will continue to do so unless restrained therefrom by this
7 court, all to the great loss and injury of Oakley.

8 91. Oakley is informed and believes and thereupon alleges
9 that Defendants have derived, received and will continue to
10 derive and receive from the aforesaid acts of infringement,
11 gains, profits and advantages in an amount not presently known
12 to Oakley. By reason of the aforesaid acts of infringement,
13 Oakley has been, and will continue to be, greatly damaged.

14 92. Defendants will continue to infringe U.S. Patent No.
15 D328,468 to the great and irreparable injury of Oakley, for
16 which Oakley has no adequate remedy at law unless said
17 Defendants is enjoined by this court.

18 **EIGHTH CLAIM FOR RELIEF**

19 93. The allegations of paragraphs 1 through 31 are repled
20 and realleged as though fully set forth herein.

21 94. This is a claim for patent infringement, and arises
22 under 35 U.S.C. Sections 271 and 281.

23 95. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
24 1338.

25 96. Oakley is the owner of U.S. Design Patent No.
26 D330,903 which protects, among others, the product sold by
27 Oakley under the trade name "M Frame". A true and correct copy
28 of U.S. Patent No. D330,903 is attached hereto as Exhibit 8.

1 97. By statute, the patent is presumed to be valid and
2 enforceable under 35 U.S.C. § 282.

3 98. Defendants, through their agents, employees, and
4 servants, manufactured, imported and sold sunglasses which fall
5 within the scope and claim contained in and without any rights
6 or license under U.S. Patent No. D330,903.

7 99. Oakley is informed and believes and thereupon alleges
8 that Defendants have willfully infringed upon Oakley's
9 exclusive rights under said patent, with full notice and
10 knowledge thereof. Defendants are presently selling such
11 infringing sunglass, have refused to cease the sale thereof,
12 and will continue to do so unless restrained therefrom by this
13 court, all to the great loss and injury of Oakley.

14 100. Oakley is informed and believes and thereupon alleges
15 that Defendants have derived, received and will continue to
16 derive and receive from the aforesaid acts of infringement,
17 gains, profits and advantages in an amount not presently known
18 to Oakley. By reason of the aforesaid acts of infringement,
19 Oakley has been, and will continue to be, greatly damaged.

20 101. Defendants will continue to infringe U.S. Patent No.
21 D330,903 to the great and irreparable injury of Oakley, for
22 which Oakley has no adequate remedy at law unless said
23 Defendants is enjoined by this court.

24 **NINTH CLAIM FOR RELIEF**

25 102. The allegations of paragraphs 1 through 31 are repled
26 and realleged as though fully set forth herein.

27 103. This is a claim for patent infringement, and arises
28 under 35 U.S.C. Sections 271 and 281.

1 104. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
2 1338.

3 105. Oakley is the owner of U.S. Design Patent No.
4 D374,884 which protects, among others, the product sold by
5 Oakley under the trade name "M Frame". A true and correct copy
6 of U.S. Patent No. D374,884 is attached hereto as Exhibit 9.

7 106. By statute, the patent is presumed to be valid and
8 enforceable under 35 U.S.C. § 282.

9 107. Defendants, through their agents, employees, and
10 servants, manufactured, imported and sold sunglasses which fall
11 within the scope and claim contained in and without any rights
12 or license under U.S. Patent No. D374,884.

13 108. Oakley is informed and believes and thereupon alleges
14 that Defendants have willfully infringed upon Oakley's
15 exclusive rights under said patent, with full notice and
16 knowledge thereof. Defendants are presently selling such
17 infringing sunglass, have refused to cease the sale thereof,
18 and will continue to do so unless restrained therefrom by this
19 court, all to the great loss and injury of Oakley.

20 109. Oakley is informed and believes and thereupon alleges
21 that Defendants have derived, received and will continue to
22 derive and receive from the aforesaid acts of infringement,
23 gains, profits and advantages in an amount not presently known
24 to Oakley. By reason of the aforesaid acts of infringement,
25 Oakley has been, and will continue to be, greatly damaged.

26 110. Defendants will continue to infringe U.S. Patent No.
27 D374,884 to the great and irreparable injury of Oakley, for
28

1 which Oakley has no adequate remedy at law unless said
2 Defendants is enjoined by this court.

3 **TENTH CLAIM FOR RELIEF**

4 111. The allegations of paragraphs 1 through 31 are repled
5 and realleged as though fully set forth herein.

6 112. This is a claim for patent infringement, and arises
7 under 35 U.S.C. Sections 271 and 281.

8 113. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
9 1338.

10 114. Oakley is the owner of U.S. Design Patent No.
11 5,137,342 which protects, among others, the product sold by
12 Oakley under the trade name "M Frame". A true and correct copy
13 of U.S. Patent No. 5,137,342 is attached hereto as Exhibit 10.

14 115. By statute, the patent is presumed to be valid and
15 enforceable under 35 U.S.C. § 282.

16 116. Defendants, through their agents, employees, and
17 servants, manufactured, imported and sold sunglasses which fall
18 within the scope and claim contained in and without any rights
19 or license under U.S. Patent No. 5,137,342.

20 117. Oakley is informed and believes and thereupon alleges
21 that Defendants have willfully infringed upon Oakley's
22 exclusive rights under said patent, with full notice and
23 knowledge thereof. Defendants are presently selling such
24 infringing sunglass, have refused to cease the sale thereof,
25 and will continue to do so unless restrained therefrom by this
26 court, all to the great loss and injury of Oakley.

27 118. Oakley is informed and believes and thereupon alleges
28 that Defendants have derived, received and will continue to

1 derive and receive from the aforesaid acts of infringement,
2 gains, profits and advantages in an amount not presently known
3 to Oakley. By reason of the aforesaid acts of infringement,
4 Oakley has been, and will continue to be, greatly damaged.

5 119. Defendants will continue to infringe U.S. Patent No.
6 5,137,342 to the great and irreparable injury of Oakley, for
7 which Oakley has no adequate remedy at law unless said
8 Defendants is enjoined by this court.

9 **ELEVENTH CLAIM FOR RELIEF**

10 120. The allegations of paragraphs 1 through 31 are replied
11 and realleged as though fully set forth herein.

12 121. This is a claim for patent infringement, and arises
13 under 35 U.S.C. Sections 271 and 281.

14 122. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
15 1338.

16 123. Oakley is the owner of U.S. Design Patent No.
17 D365,591 which protects, among others, the product sold by
18 Oakley under the trade name "e Wire". A true and correct copy
19 of U.S. Patent No. D365,591 is attached hereto as Exhibit 11.

20 124. By statute, the patent is presumed to be valid and
21 enforceable under 35 U.S.C. § 282.

22 125. Defendants, through their agents, employees, and
23 servants, manufactured, imported and sold sunglasses which fall
24 within the scope and claim contained in and without any rights
25 or license under U.S. Patent No. D365,591.

26 126. Oakley is informed and believes and thereupon alleges
27 that Defendants have willfully infringed upon Oakley's
28 exclusive rights under said patent, with full notice and

1 knowledge thereof. Defendants are presently selling such
2 infringing sunglass, have refused to cease the sale thereof,
3 and will continue to do so unless restrained therefrom by this
4 court, all to the great loss and injury of Oakley.

5 127. Oakley is informed and believes and thereupon alleges
6 that Defendants have derived, received and will continue to
7 derive and receive from the aforesaid acts of infringement,
8 gains, profits and advantages in an amount not presently known
9 to Oakley. By reason of the aforesaid acts of infringement,
10 Oakley has been, and will continue to be, greatly damaged.

11 128. Defendants will continue to infringe U.S. Patent No.
12 D365,591 to the great and irreparable injury of Oakley, for
13 which Oakley has no adequate remedy at law unless said
14 Defendants is enjoined by this court.

15 **TWELFTH CLAIM FOR RELIEF**

16 129. The allegations of paragraphs 1 through 31 are repled
17 and realleged as though fully set forth herein.

18 130. This is a claim for patent infringement, and arises
19 under 35 U.S.C. Sections 271 and 281.

20 131. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
21 1338.

22 132. Oakley is the owner of U.S. Design Patent No.
23 D376,381 which protects, among others, the product sold by
24 Oakley under the trade name "e Wire". A true and correct copy
25 of U.S. Patent No. D376,381 attached hereto as Exhibit 12.

26 133. By statute, the patent is presumed to be valid and
27 enforceable under 35 U.S.C. § 282.

28

1 134. Defendants, through their agents, employees, and
2 servants, manufactured, imported and sold sunglasses which fall
3 within the scope and claim contained in and without any rights
4 or license under U.S. Patent No. D376,381.

5 135. Oakley is informed and believes and thereupon alleges
6 that Defendants have willfully infringed upon Oakley's
7 exclusive rights under said patent, with full notice and
8 knowledge thereof. Defendants are presently selling such
9 infringing sunglass, have refused to cease the sale thereof,
10 and will continue to do so unless restrained therefrom by this
11 court, all to the great loss and injury of Oakley.

12 136. Oakley is informed and believes and thereupon alleges
13 that Defendants have derived, received and will continue to
14 derive and receive from the aforesaid acts of infringement,
15 gains, profits and advantages in an amount not presently known
16 to Oakley. By reason of the aforesaid acts of infringement,
17 Oakley has been, and will continue to be, greatly damaged.

18 137. Defendants will continue to infringe U.S. Patent No.
19 D376,381 to the great and irreparable injury of Oakley, for
20 which Oakley has no adequate remedy at law unless said
21 Defendants is enjoined by this court.

22 **THIRTEENTH CLAIM FOR RELIEF**

23 138. The allegations of paragraphs 1 through 31 are replied
24 and realleged as though fully set forth herein.

25 139. This is a claim for patent infringement, and arises
26 under 35 U.S.C. Sections 271 and 281.

27 140. Jurisdiction is founded upon 28 U.S.C. §§ 1331 and
28 1338.

1 141. Oakley is the owner of U.S. Design Patent No.
2 D415,188 which protects, among others, the product sold by
3 Oakley under the trade name "Minutes". A true and correct copy
4 of U.S. Patent No. D415,188 is attached hereto as Exhibit 13.

5 142. By statute, the patent is presumed to be valid and
6 enforceable under 35 U.S.C. § 282.

7 143. Defendants, through their agents, employees, and
8 servants, manufactured, imported and sold sunglasses which fall
9 within the scope and claim contained in and without any rights
10 or license under U.S. Patent No. D415,188.

11 144. Oakley is informed and believes and thereupon alleges
12 that Defendants have willfully infringed upon Oakley's
13 exclusive rights under said patent, with full notice and
14 knowledge thereof. Defendants are presently selling such
15 infringing sunglass, have refused to cease the sale thereof,
16 and will continue to do so unless restrained therefrom by this
17 court, all to the great loss and injury of Oakley.

18 145. Oakley is informed and believes and thereupon alleges
19 that Defendants have derived, received and will continue to
20 derive and receive from the aforesaid acts of infringement,
21 gains, profits and advantages in an amount not presently known
22 to Oakley. By reason of the aforesaid acts of infringement,
23 Oakley has been, and will continue to be, greatly damaged.

24 146. Defendants will continue to infringe U.S. Patent No.
25 D415,188 to the great and irreparable injury of Oakley, for
26 which Oakley has no adequate remedy at law unless said
27 Defendants is enjoined by this court.

28 WHEREFORE, Plaintiff Oakley, Inc. prays as follows:

1 1. That Defendants be adjudicated to have infringed
2 United States Patent No. D331,587 and that said patent is
3 valid, enforceable and is owned by Oakley;

4 2. That Defendants be adjudicated to have infringed
5 United States Patent No. 5,208,614 and that said patent is
6 valid, enforceable and is owned by Oakley;

7 3. That Defendants be adjudicated to have infringed
8 United States Patent No. D324,528 and that said patent is
9 valid, enforceable and is owned by Oakley;

10 4. That Defendants be adjudicated to have infringed
11 United States Patent No. D331,763 and that said patent is
12 valid, enforceable and is owned by Oakley;

13 5. That Defendants be adjudicated to have infringed
14 United States Patent No. 4,867,550 and that said patent is
15 valid, enforceable and is owned by Oakley;

16 6. That Defendants be adjudicated to have infringed
17 United States Patent No. 5,054,903 and that said patent is
18 valid, enforceable and is owned by Oakley;

19 7. That Defendants be adjudicated to have infringed
20 United States Patent No. D328,468 and that said patent is
21 valid, enforceable and is owned by Oakley;

22 8. That Defendants be adjudicated to have infringed
23 United States Patent No. D330,903 and that said patent is
24 valid, enforceable and is owned by Oakley;

25 9. That Defendants be adjudicated to have infringed
26 United States Patent No. D374,884 and that said patent is
27 valid, enforceable and is owned by Oakley;

28

1 10. That Defendants be adjudicated to have infringed
2 United States Patent No. 5,137,342 enforceable and is owned by
3 Oakley;

4 11. That Defendants be adjudicated to have infringed
5 United States Patent No. D365,591 and that said patent is
6 valid, enforceable and is owned by Oakley;

7 12. That Defendants be adjudicated to have infringed
8 United States Patent No. D376,381 and that said patent is
9 valid, enforceable and is owned by Oakley;

10 13. That Defendants be adjudicated to have infringed
11 United States Patent No. D415,188 and that said patent is
12 valid, enforceable and is owned by Oakley;

13 14. That Defendants, their agents, servants, employees
14 and attorneys and all those persons in active concert or
15 participation with them, be forthwith preliminarily and
16 thereafter permanently enjoined from making, using or selling
17 any sunglass which infringe United States Patent Nos. D331,587,
18 5,208,614, D324,528, D331,763, 4,867,550, 5,054,903, D328,468,
19 D330,903, D374,884, 5,137,342, D365,591, D376,381, and
20 D415,188;

21 15. That Defendants, their agents, servants, employees
22 and attorneys and all persons in active concert or
23 participation with them, be enjoined and restrained, during the
24 pendency of this action, and permanently thereafter from
25 infringing any of Oakley's exclusive rights in the
26 configuration of the Oakley "M Frame", "e Wire", and "Minutes"
27 sunglasses;

28

1 16. That Defendants be directed to file with this court
2 and serve upon Oakley within 30 days after the service of the
3 injunction, a report in writing under oath, setting forth in
4 detail the manner and form in which Defendants has complied
5 with the injunction;

6 17. That Defendants be required to account to Oakley
7 for any and all profits derived by them, and all damages
8 sustained by Oakley by reason of Defendants's infringement of
9 U.S. Patent Nos. D331,587, 5,208,614, D324,528, D331,763,
10 4,867,550, 5,054,903, D328,468, D330,903, D374,884, 5,137,342,
11 D365,591, D376,381, and D415,188 together with interest and
12 costs;

13 18. For all of Defendants's profits derived from its
14 infringement of Plaintiff's patent rights;

15 19. That patent infringement damages be awarded in an
16 amount equal to three times the amount of damages found or
17 assessed to compensate Oakley for the willful, deliberate and
18 intentional acts of infringement by Defendants, pursuant to 35
19 U.S.C. § 284;

20 20. For an order requiring Defendants to deliver up and
21 destroy all infringing sunglasses;

22 21. That an award of reasonable costs, expenses and
23 attorney's fees be awarded against Defendants pursuant to 35
24 U.S.C. § 285;

25

26


27

28

1 22. That Oakley have such other and further relief as the
2 circumstances of this case may require and as this court may
3 deem just and proper.

4 DATED: 6/30/00

WEEKS, KAUFMAN & JOHNSON


5 
6 GREGORY L. WEEKS
7 Attorney for Plaintiff

8 **JURY DEMAND**

9 Plaintiff Oakley, Inc. hereby requests a trial by jury in
10 this matter.

11 DATED: 6/30/00

WEEKS, KAUFMAN & JOHNSON

12 
13 GREGORY L. WEEKS
14 Attorney for Plaintiff

000D331587S

United States Patent [19]

Jannard et al.

[11] Patent Number: Des. 331,587

[45] Date of Patent: ** Dec. 8, 1992

[54] EYEGLASS FRAME

[75] Inventors: James H. Jannard, San Juan
Capistrano; Gregory F. Arnette,
South Laguna Beach, both of Calif.

[73] Assignee: Oakley, Inc., Irvine, Calif.

[**] Term: 14 Years

[21] Appl. No.: 743,568

[22] Filed: Aug. 9, 1991

Related U.S. Application Data

[62] Division of Ser. No. 502,496, Mar. 30, 1990, Pat. No. D. 324,394, which is a division of Ser. No. 397,091, Aug. 22, 1989, Pat. No. D. 323,333.

[52] U.S. Cl. D16/123

[58] Field of Search D16/102, 103, 105-107,
D16/110-112, 114, 116, 117, 121-123, 127;
D2/246; 351/44, 45, 47, 57, 59, 83, 87, 111, 118;
2/13, 199, 439, 448, 449

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The Optician, Advertisement, E. Bither, Ltd., p. 1, center
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The Optometric Weekly, Advertisement, right side of
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Primary Examiner—Bernard Ansher

Assistant Examiner—R. Barkai

Attorney, Agent, or Firm—Knobbe, Martens, Olson &
Bear

[57] CLAIM

The ornamental design for an eyeglass frame, as shown
and described.

DESCRIPTION

FIG. 1 is a frontal perspective view of the eyeglass
frame embodying the design of the present invention;
FIG. 2 is a rear perspective view of the eyeglass frame;
FIG. 3 is a front elevational view of the eyeglass frame;
FIG. 4 is a side elevational view of the eyeglass frame;
and
FIG. 5 is a top plan view of the eyeglass frame.

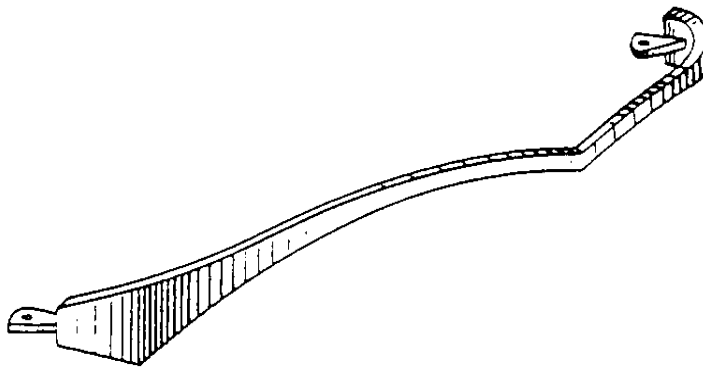


FIG. 1

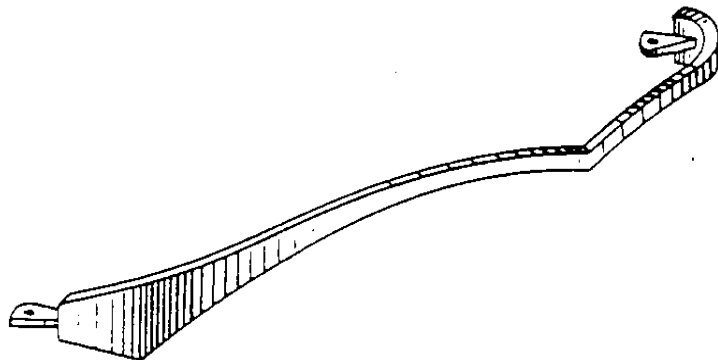


FIG. 2

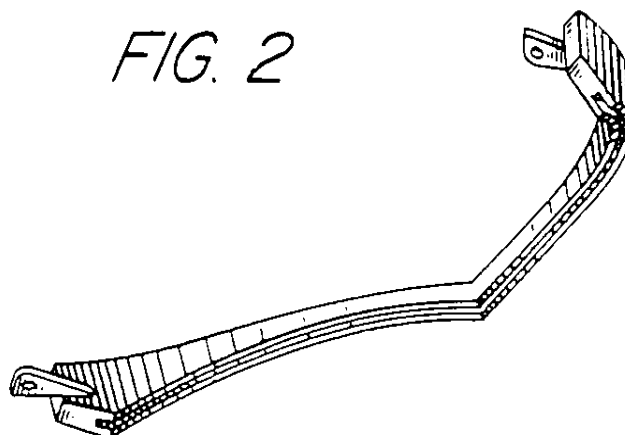


FIG. 3

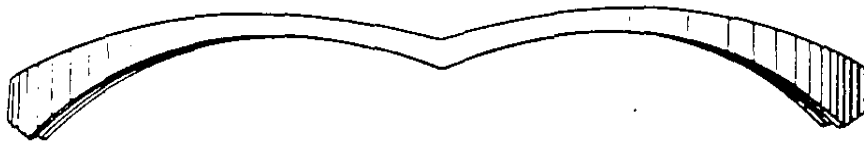
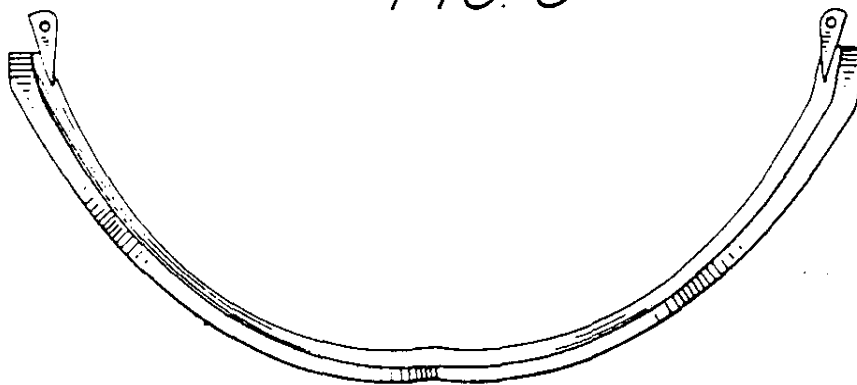


FIG. 4



FIG. 5



US005208614A

United States Patent [19]

[11] Patent Number: 5,208,614

Jannard

[45] Date of Patent: May 4, 1993

[54] CONCAVELY INDENTED LENSES FOR EYEWEAR

4,843,655 7/1989 Hegendorfer 2/449

[75] Inventor: James H. Jannard, San Juan Capistrano, Calif.

FOREIGN PATENT DOCUMENTS

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[73] Assignee: Oakley, Inc., Irvine, Calif.

OTHER PUBLICATIONS

[21] Appl. No.: 620,648

P. 46 of Runner's World, Jul., 1990.

[22] Filed: Nov. 30, 1990

Primary Examiner—Scott J. Sugarman

[51] Int. Cl.³ G02C 7/02

[57] ABSTRACT

[52] U.S. Cl. 351/41; 351/158; 351/159

[58] Field of Search 351/158, 159, 41, 43, 351/44

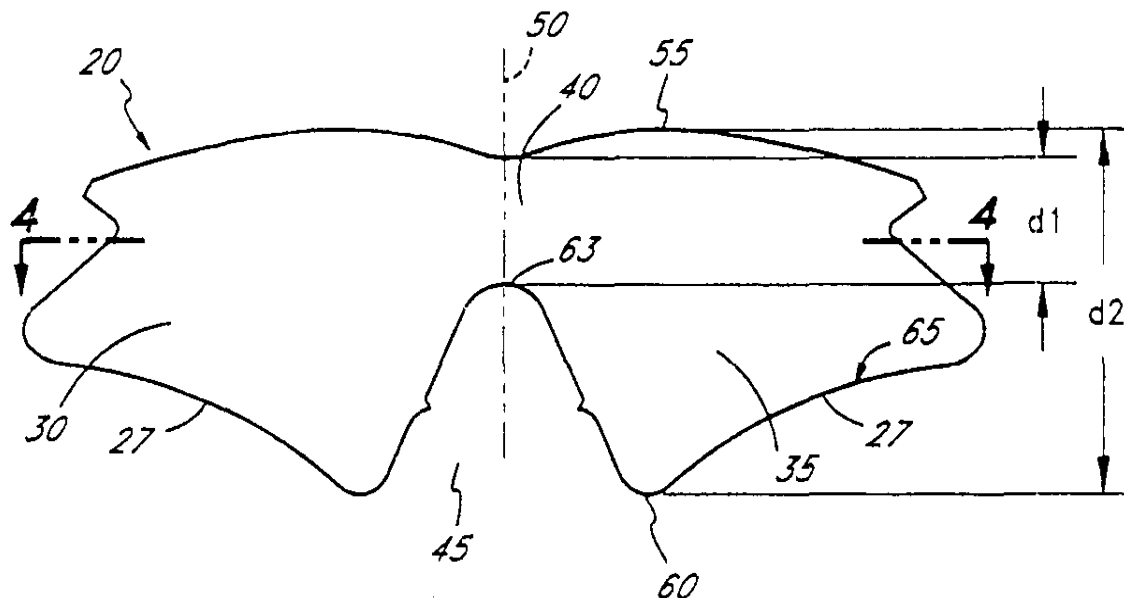
Disclosed is an arcuately molded lens for use in active eyewear, having along the bottom edge of each right and left lens regions at least one downwardly concave indented area. The indented area may extend across the entire bottom edge of each lens region or it may only extend along a portion of the lens region. Where there is only one concavity per lens region, it may be placed anywhere along the bottom edge of the lens, near the midpoint, center or periphery. The lens may also have multiple concave indentations along its bottom edge.

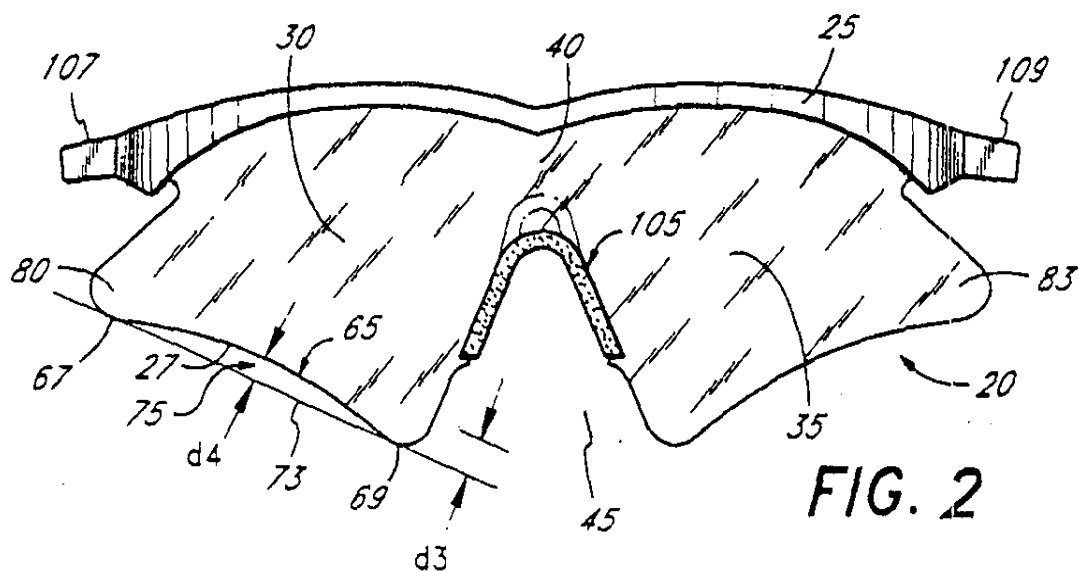
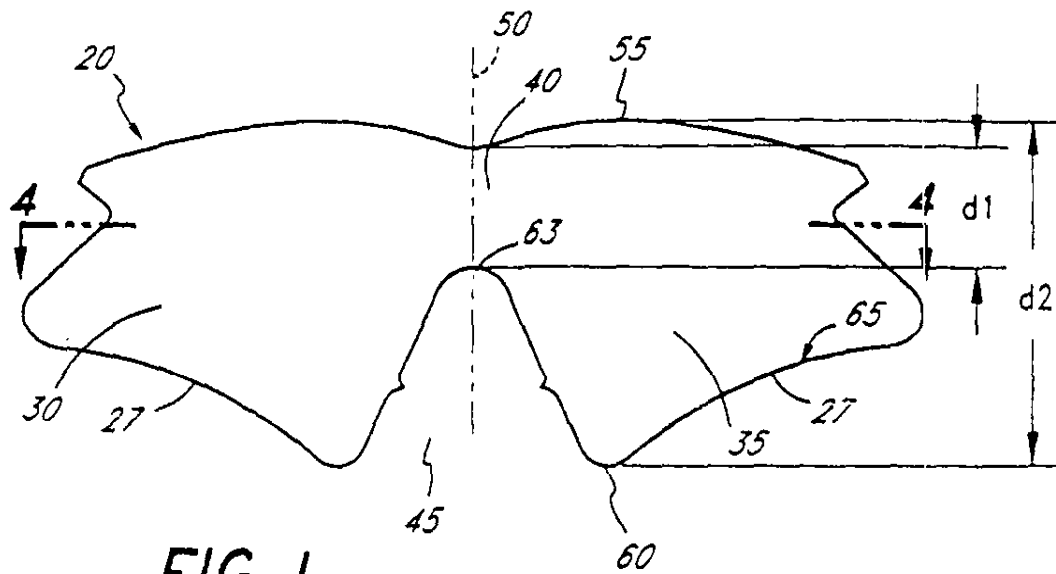
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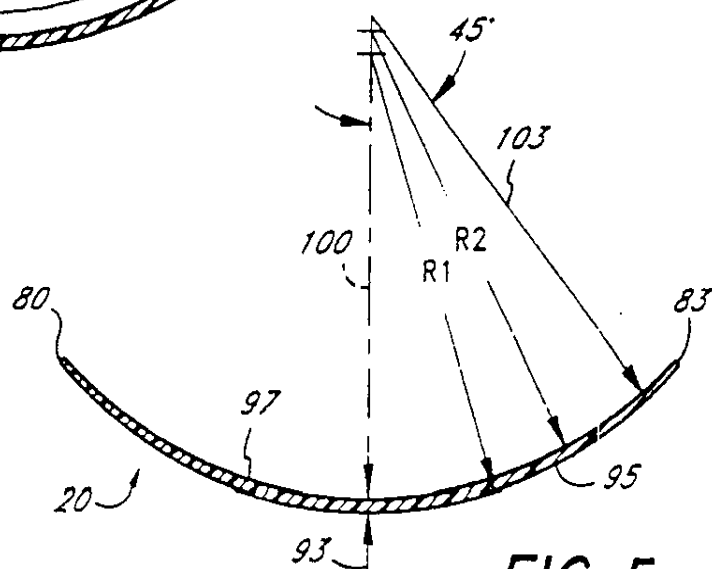
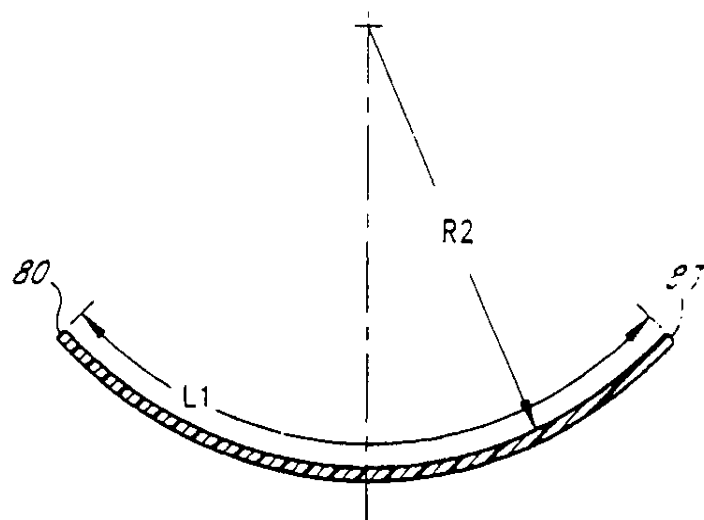
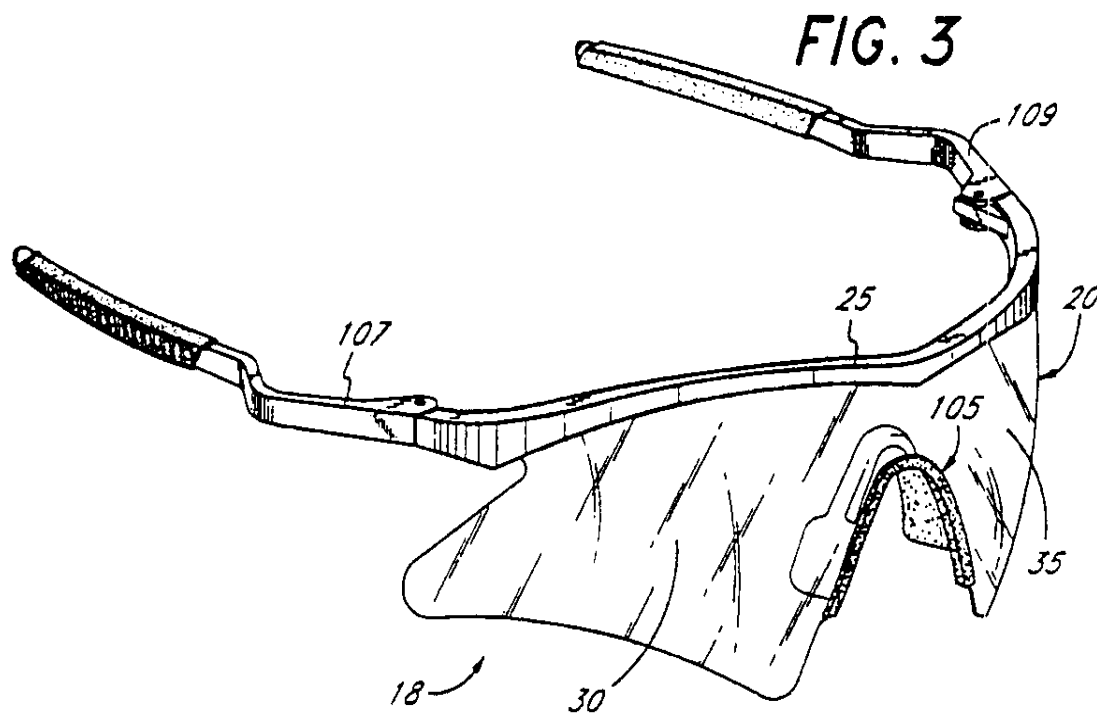
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25 Claims, 4 Drawing Sheets







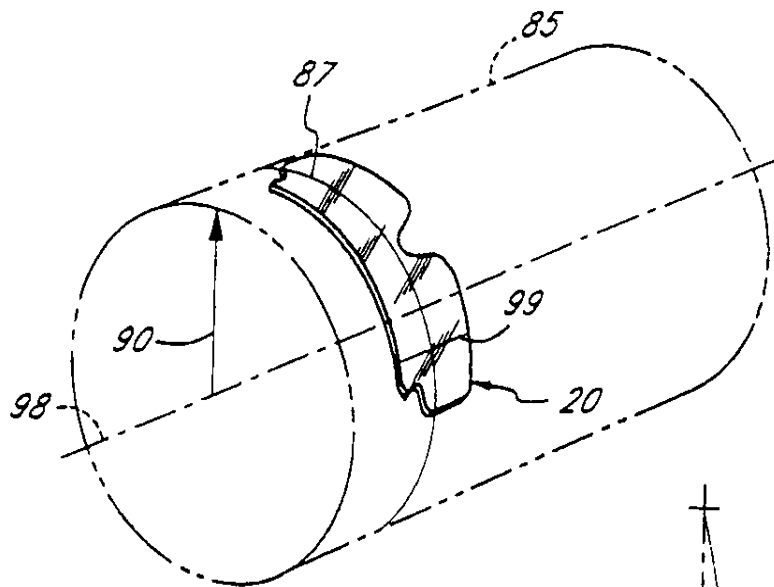


FIG. 6

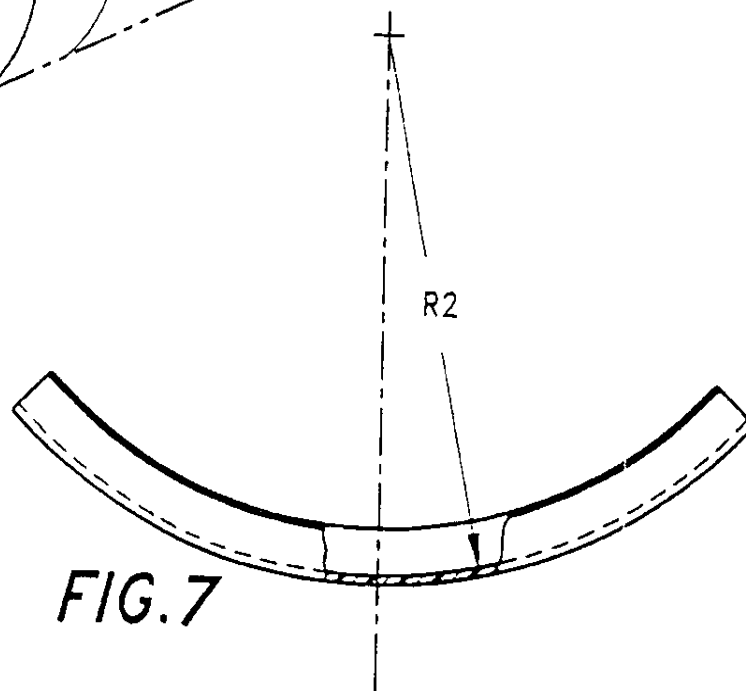


FIG. 7

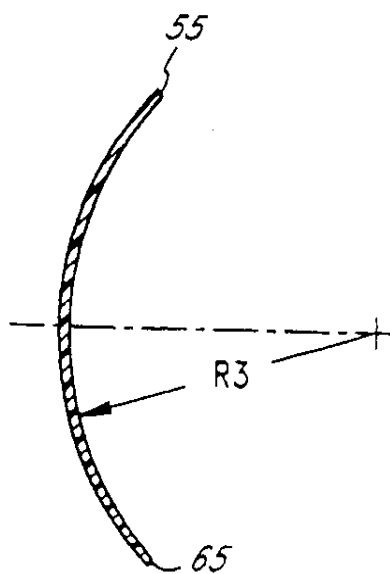


FIG. 8

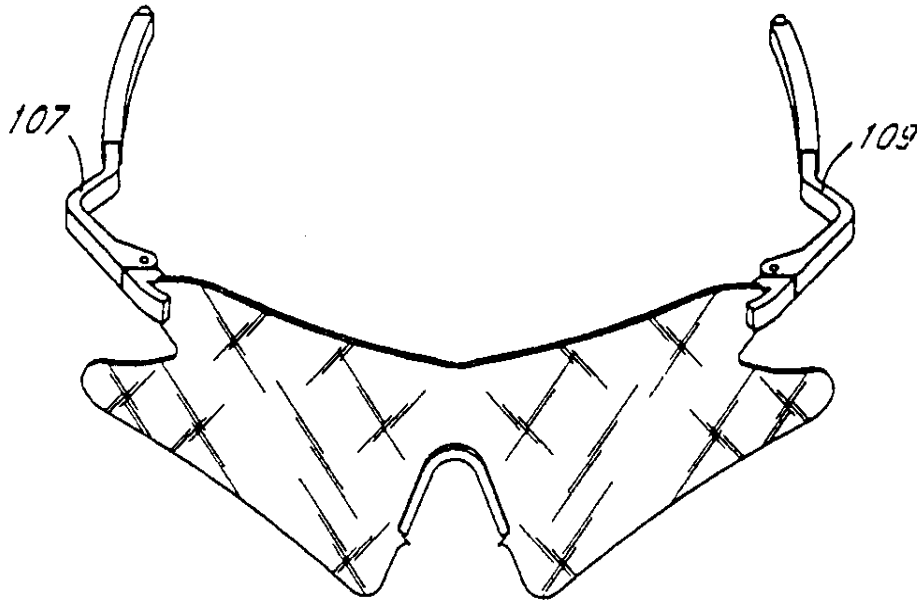


FIG. 9

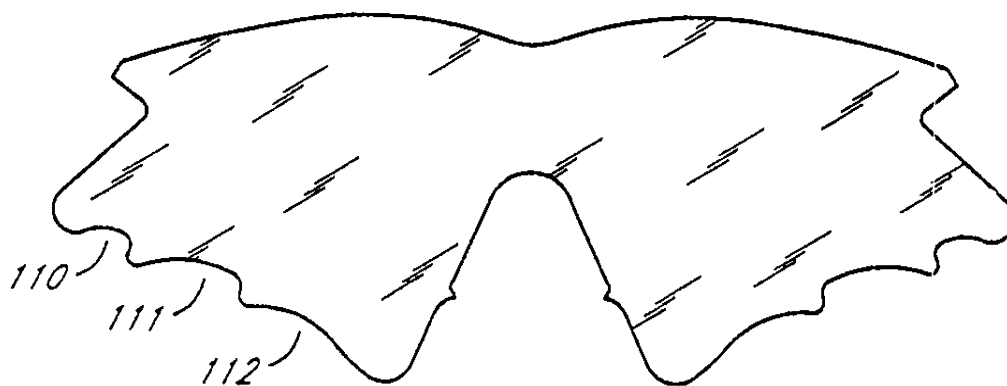


FIG. 10

5,208,614

1

CONCAVELY INDENTED LENSES FOR EYEWARE

BACKGROUND OF THE INVENTION

This invention relates generally to lenses used in eyewear suitable for active sports, and more particularly, to functional improvements attributable to the shape of the bottom edge of such lenses.

Eyewear typically worn during active sports such as hiking, skiing and bicycle racing is commonly designed to conform closely to the front and sides of the wearer's head. It is advantageous in such low profile eyewear to use arcuately molded lenses. Notwithstanding certain advantages attributable to the close fit, such as peripheral light interception and aerodynamic efficiency, sufficient ventilation may be impaired, resulting in the wearer being uncomfortable and possibly having impaired vision from fogging of the eyewear lenses. Prior efforts to alleviate this problem have been disclosed in U.S. Pat. Nos. 4,859,048 and 4,867,550, but they are by no means exclusive. The present invention offers an additional means to achieve the desired goals of providing comfort and optimum visibility without diminishing the advantages attendant in arcuately formed eyewear used for participation in active sports.

SUMMARY OF THE INVENTION

There has been provided, in accordance with one aspect of the present invention, an arcuately molded lens for use in eyewear suitable for participation in active sports. The lens has a top edge and a bottom edge having a nose opening for mounting the lens on the nose of a wearer and for defining a right and a left lens region. In one embodiment, there is a nose piece disposed in the nose opening. Over the nose opening in the lens there is a bridge portion. The distance separating the lower edge of the bridge portion and the top edge of the lens is defined as d1 and the distance separating the top edge of the lens and the lowest bottom edge of the lens is defined as d2. d1 is in the range of about $\frac{1}{4}$ inch to $1\frac{1}{2}$ inches, and d2 is in the range of about $1\frac{1}{4}$ inches to 3 inches. The lens also has an arcuate horizontal cross sectional configuration, wherein its arc length (L1) is in the range of from about 5 inches to about 7 inches. The bottom edge of each right and left lens region is concavely indented. There may be more than one concave indentation per each lens region. The concavely indented regions have a depth dimension within the range of about $1/32$ inch to about $1\frac{1}{4}$ inches. The sum of the areas of the indentations in a given lens pane in this embodiment may be between approximately 1% and 50% of the remaining area of the surface of that lens pane.

The lens of the present invention has an inner concave surface and an outer convex surface and a thickness there between. The thickness of the lens may be substantially constant throughout or may in at least one portion of each distal region be less than the thickness of the lens in its central region. The thickness of the lens at the midpoint of the central region may taper gradually to a reduced thickness in the distal regions.

In one embodiment of the present invention, the arcuate cross sectional configuration of the lens in its molded condition substantially conforms to the surface of a cylinder. The radius from the axis of the cylinder to an arc defining the inner concave surface of the lens is a substantially constant radius in the range of from

2

about $2\frac{1}{4}$ inches to about $4\frac{1}{4}$ inches. The radius of curvature of the lens along a horizontal plane may be defined by R2, and the radius of curvature along a vertical plane through the lens may have a radius defined by R3, and R2 may be equal to or less than R3. In another embodiment, R2 is in the range of from about two inches to about four inches, and R3 is greater than or equal to 1.10 R2.

The lenses of the present invention may be mounted in a pair of eyeglasses, by pivotably attaching a right and a left earstem to each lens region. Alternatively, the lenses of the present invention may be secured to an upper frame, and earstems are pivotably secured to that frame.

In a further embodiment of the present invention, the lenses described above may be adapted to be used in a dual lens eyewear system suitable for participation in active sports.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of a lens of the present invention in a flattened condition;

FIG. 2 is a front elevational view of a lens of the present invention, having a frame attached and showing a measurement of the extent of indentation;

FIG. 3 is a front perspective view showing a lens of the present invention as part of an eyewear system;

FIG. 4 is a section along lines 4—4 of FIG. 1 normal to the vertical axis of the lens, in its normal arcuate configuration.

FIG. 5 is a sectional view like FIG. 4, of a tapered thickness embodiment of the lens of the present invention;

FIG. 6 is a perspective view of an arcuate lens of the present invention shown conforming to the surface of a cylinder;

FIG. 7 is a top plan view of a lens of the present invention with the R2 radius less than R3;

FIG. 8 is an elevational sectional view of the non-cylindrical embodiment of the lens illustrated in FIG. 7;

FIG. 9 is a front perspective view of assembled eyewear in accordance with one aspect of the present invention.

FIG. 10 is a front elevational view of a lens of the present invention having more than one concavity per lens pane.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1-3, there has been provided in accordance with one aspect of the present invention a lens 20 for mounting in a frame 25 to form eyewear 18 (FIG. 3), conformed to extend in the path of the wearer's left and right eye fields of vision. In particular, the invention relates to the indented or concave opening downward shape of the lower edge of the lens. The shape of one embodiment of the lens of the present invention is best understood by reference to FIG. 1, which illustrates a relatively smoothly curved, single, concave indentation 27 in each lens pane 30, 35. However, lenses of many other shapes may be envisioned having irregularly shaped indentations or multiple concave indentations for each eye pane (see FIG. 10), which will accrue the advantages of the present invention.

Lenses in accordance with the present invention can be manufactured by any of a variety of processes well

known in the art. Preferably, the lens is injection molded and comprises a relatively rigid and optically acceptable material such as polycarbonate. The indentation 27 can be formed in the molding, cutting, or stamping process used to form the lens, or, preferably, is machined into a previously molded lens blank.

Alternatively, the lens can be stamped or cut from flat sheet stock and bent into a curved configuration. This curved configuration can then be maintained by the use of a relatively rigid, curved frame, or by heating the curved sheet to retain its curved configuration, as is well known in the thermoforming art.

A first eye pane 30 and a second eye pane 35 are located in front of the wearer's right and left eyes, respectively. A bridge portion 40 is provided to merge the first and second eye panes into a single lens. Beneath the bridge 40 there is provided a generally triangular nose opening 45. In another embodiment, the first and second panes are not merged into a single lens eyewear system, rather they consist of two separate lenses 20 adapted for use in a dual lens system.

It is understood that the eye panes 30 and 35 will, in the preferred embodiment, be essentially mirror images of each other about a central vertical axis 50 (FIG. 1), and the discussion in connection with one is intended to apply to both. The maximum height d_2 of the lens 20 (see FIG. 1) of the present invention, measured from the top edge 55 of the lens 20 to the lowest point 60 along the bottom edge 65, may be varied to optimize aesthetic and functional considerations, but will typically fall within the range of from about 1 to 3 inches, preferably from about $1\frac{1}{2}$ to about 2 $\frac{1}{2}$ inches, and most preferably between about $1\frac{1}{2}$ to about $1\frac{3}{4}$ inches. The height d_1 of the lens 20, measured from the center of top edge 55 of the lens to the lower edge 63 of the bridge portion 40, may also vary, but preferably it is within the range of from about $\frac{1}{2}$ inch to $\frac{3}{4}$ inches and more preferably between about $\frac{1}{2}$ and $\frac{3}{4}$ inch.

The bottom edge 65 of lens 20 is provided with at least one region 27 which is concave, opening in a downward direction. One embodiment of such a concave region is illustrated in FIG. 2 as extending between the lowest points of the concavity 67 and 69. As illustrated therein, the bottom edge 65 is concave in relation to an imaginary straight line 73 drawn between relative low points 67 and 69. Thus, the bottom edge 65 can be seen as diverging away from straight line 73 for a distance d_3 which is greater than zero at at least one point.

Thus, by "concave downward," "indented," "diverging away" and the like terms herein used, it is meant that an imaginary straight line 73 drawn between the two lowest points of a concave indentation 27, for example 67 and 69, defines a regular or irregular enclosure having an area 75 of greater than 0 square inches. A lens in which no straight line 73 can be positioned so as to define a closed area 75 thus does not have a "concavity" as intended herein. This is true of continuously convex prior art lenses, in which case the imaginary line 73 can only be drawn as a tangent to some point along the lower edge 65 of the lens. In a lens having a perfectly straight lower edge, line 73 can only be parallel or coextensive with the lower edge 65, thereby failing to produce a closed space having a positive area 75.

In a dual lens system, there are two distinct lenses, or lens panes, as is well understood. In connection with single lens systems, the singular terms "eye pane" or "lens pane" herein will refer to precisely half of the area of the overall single lens. Thus, a single lens system will

be deemed for the present purpose to be comprised precisely of two equal eye panes.

The extent of the indentation 27 can be characterized in terms of the ratio of the area 75 to the remaining area of the associated eye pane. For example, the area 75 of the concavity preferably is within the range of from about 1% to about 100% of the remaining area of the eye pane. Thus, in the latter instance, the area 75 is precisely the same as the area of the associated eye pane. Preferably, the area of the concavity will be within the range of about 1% to about 30% of the remaining area of the associated eye pane, and more preferably within the range of from about 3% or 4% to about 10% of the area of the associated eye pane.

An alternative way to characterize the indentation 27 in the lens of the present invention is by the depth d_3 thereof along an axis perpendicular to the axis of the imaginary straight line 73. Since the indentation 27 by definition requires a distance between straight line 73 and the bottom edge 65 of the lens, the depth d_3 can be measured along a perpendicular line drawn between straight line 73 and at least some point along bottom edge 65. Since the depth d_3 will vary across the length of the concavity, it is convenient to measure the maximum depth d_4 for each concavity. The maximum depth d_4 is the deepest part of the concavity measured by a line drawn perpendicularly to straight line 73.

In a single concavity embodiment such as illustrated in FIG. 2, the depth d_4 is generally within the range of from about $1/64$ of an inch to about one inch. Preferably, the depth will be in the range of from about $1/32$ inch to about $\frac{1}{2}$ inch, and most preferably between about $\frac{1}{4}$ inch and about $3/16$ inch, although in a design for applications where maximizing ventilation is deemed desirable, a minimum depth of at least about $3/16$ inch will be used, and a minimum of at least about $\frac{1}{2}$ inch or even $\frac{3}{4}$ inch may be desired.

The ventilation function will be maximized by a combination of factors, as will be understood by one of skill in the art in view of the teachings of this disclosure. For example, a lens with a relatively large vertical coverage of the face will tend to require a deeper d_4 dimension to achieve meaningful ventilation as compared to a relatively vertically narrow lens, the lower edge of which is already generally at or above the cheek bone. In a lens which has multiple concavities along the bottom edge of a single lens pane (FIG. 10), the depth d_4 of each individual concavity 110, 111, 112 will generally be less than the depth d_4 of the concavity in a single concavity lens pane.

The precise geometric profile of the indented regions may vary, and where there are more than one indented region per eye pane, they need not repeat the same shape (see FIG. 10).

In an embodiment where lower lens edge 65 defining the concave indentation 27 in the lens 20 has a curve of substantially constant radius throughout its arc length between low points 67 and 69, the radius of curvature is preferably within the range of from about 1 to about 12 inches, or more preferably from about $1\frac{1}{2}$ to about 6 inches.

and contained by the axis 98 (FIG. 6) of the cylinder defined by the panes. The lens 20 has a horizontal length dimension L_1 (FIG. 4) between the generally rearwardly extending distal ends 80 and 83 which measures in the range of from about 5 inches to about 7 inches. The lens is further characterized by a radius R_2 , detailed infra.

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5,208,614

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In the preferred embodiment of the present invention, the lens pane, be it single or adapted for use in a dual lens system, is arcuately formed. For example, the embodiments depicted in FIGS. 4, 5 and 6 exhibit cylindrical curvature along the horizontal plane, preferably imparted from the molding process. Note that panes 30 and 35 and distal ends 80 and 83 wrap backwardly or rearwardly to extend in the paths of the wearer's peripheral fields of vision, without such abruptly changing curvature as would distort the light passing through the side wrapping portions of the panes.

FIG. 6 depicts a unitary lens of the present invention substantially conforming to the exterior surface of a cylinder 85. The benefits derived from a cylindrically shaped unitary lens are expounded in U.S. Pat. No. 4,859,048, which is incorporated herein by reference. Thus, one embodiment of the lens of the present invention is preferably provided with a substantially uniform curve, such that a line 87 (FIG. 6) drawn along the surface of the lens 20 in a circumferential direction defines an arc of substantially uniform radius 90. A line 99 drawn along the surface of the lens 20 in an axial direction is substantially parallel to the axis 98 of a cylinder 85.

Although a variety of radii might accrue the advantages of the present invention, the lens is preferably provided with a radius 90 within the range of from about 2½ to about 4½ inches, and preferably within the range of from about 3½ to 4 inches. The foregoing radius dimensions represent the distance from the axis 98 to the interior, concave surface of the lens.

The lens of the present invention may alternatively be curved along each of two substantially perpendicular axes to produce a lens, for example, which conforms to the surface of generally toroidal configuration. Thus, a cross-section of the lens taken along a horizontal plane (not illustrated) midway from the bottom edge 65 of the lens to the top edge 55 will reveal an arcuate cross-sectional configuration, characterized by a first radius dimension R_2 as shown in FIG. 7. Unlike the cylindrical lens, however, a vertical cross-section through the lens reveals a curvature from top edge 55 to bottom edge 65 characterized by a second radius dimension R_3 , as shown in FIG. 8. Where R_2 equals R_3 , the lens will conform to the surface of a sphere. Where R_2 is less than R_3 , the lens will conform to the surface of a toroid. Such toroidal lenses are the subject of U.S. Pat. No. 4,867,550 which is incorporated herein by reference.

The lens of the present invention has sufficient thickness that it is not accurately defined as having only a single radius. Instead, referring to FIG. 5, the lens 20 has a thickness or depth dimension 93 along its entire arc length which causes the arc defined by the outer, convex surface 95 to have an additional radius R_1 to the radius R_2 defined by the inner, concave surface 97 of lens 20. In an embodiment where the lens is of substantially uniform thickness throughout, and the axes are coincident, the radius R_1 of the convex surface 95 is essentially equal to the sum of the radius R_2 of the concave surface 97 and the depth 93 of the lens.

In accordance with another embodiment of the present invention, there has been provided a unitary lens substantially as any of those described above, with one following modification. Referring to the horizontal sectional view illustrated in FIG. 5, there is disclosed a lens 20 defined between an outer convex surface 95, having a radius R_1 , and an inner concave surface 97, having a radius R_2 . The principal difference from the

previously detailed embodiment is that the thickness of the lens 20 at each of the distal ends 80 and 83 is less than the average thickness of the lens at every point intermediate the two distal ends 80 and 83. In addition, the thickness of lens 20 measured at at least one point intermediate the two ends 80 and 83 is greater than the thickness at each of those ends.

The invention can best be understood by reference to FIG. 5, which illustrates the relationship between the lens thickness and angular position along the arc length of a lens. Since the arc length of a lens can be varied considerably, although it is preferably within the range of from about 5½ to 7 inches, reference points will arbitrarily be selected at the centerline 100 and at the 45° line 103. Since the distance from centerline 100 to reference line 103 is ¼ of 360°, the reference arc length for a radius of 3 inches is about 4.7 inches, which is below the preferred range, thus defining a reference point on the lens.

In accordance with the tapered lens embodiment of the present invention, the thickness of the lens at reference line 103 is preferably from about 40% to about 99% of the thickness at centerline 100. Thus, for example, a lens having a centerline thickness 100 of about 0.060 inches will preferably have a thickness of within the range of about 0.024 to about 0.059 inches at reference line 103, and a thickness near the distal end 83 of the lens within the range of about 0.020 to about 0.055 inch. The thickness of the lens at the midpoint is preferably within the range of from about 0.055 to about 0.070 inch.

Preferably, the thickness of the lens tapers at a substantially even rate from the widest region which is centered about the centerline 100, to narrower regions near each of the distal ends 80 and 83. In this manner, optical distortion is minimized. By even rate it is meant that the taper results from the convergence of an arc defining the outer convex surface 95 of lens 20, and an arc defining the inner concave surface 97 of lens 20, each arc characterized by constant radii R_1 and R_2 , respectively. Although the surfaces need not be perfectly uniform arcs, as in the previously discussed embodiment, conformation of the lens surface to a substantially constant radius curve accrues optical advantages. The foregoing may be accomplished in a variety of ways, such as, for example, by making radius R_1 equal to radius R_2 and displacing the center points from each other. Alternatively, radius R_1 may be greater or lesser than radius R_2 , so long as the converging geometry results.

In the production lens, of course, the distal ends 80 and 83 are formed well before the continuation of the arcs defining surfaces 95 and 97 converge. In a cylindrical lens produced in accordance with this embodiment, for example, and having a centerline thickness of approximately 0.060 inches, the thickness at a point proximate either distal end 80 or 83 will generally be within the range of from about 0.040 to about 0.055 inch.

Finally, since a portion of the lens 20 near the distal ends 80 and 83 serves primarily to block peripheral light and is likely outside of the wearer's direct line of vision, it is less important that the radius of curvature be constant in this area. Thus, the lens may be provided with a smooth taper only up to a certain transition point intermediate the reference line 103 in FIG. 5 and the distal end 83. From that transition point until the distal end 83, the lens 20 may be provided with a relatively constant thickness or a taper of a different rate.

5,208,614

7

Referring to FIG. 3, the lens of the present invention may be provided with a top frame 25 extending along and bounding the upper edge 55 of the lens, and secured by conventional means. Alternatively, the frame can bound the lower edge of the lens, the entire lens, or any other portion of the base as will be evident to those of skill in the art.

Preferably, the lens of the present invention is mounted in eyewear having no lower frame, thereby leaving the lower edge of the lens exposed. This reduces the weight and bulk of the eyewear, and allows maximization of ventilation through concavity 27. At the same time, the vertical height of the lens can be minimized while still optimizing the vertical field of view without obstruction from the lower frame. The frame advantageously consists of any of a variety of relatively rigid, molded thermoplastic materials which are well known in the art, and may be transparent or dyed any of a variety of colors.

A nosepiece 105 may be provided, as illustrated in FIGS. 2 and 3, which bounds the pane in the region of the nose opening 45. The nosepiece 105 preferably comprises a relatively soft elastomeric material having a coefficient of sliding friction that increases when the material is wetted. Such a material is preferably hydrophilic, and tends to retain the eyewear in position on the wearer's upper nose area as the wearer perspires or encounters moisture as during skiing. Also, the preferred material is soft, for comfort. One such material is KRATON G, a product of Shell Oil Company.

Finally, referring to FIGS. 2, 3 and 9, eyewear embodying the lens of the present invention are provided with a pair of earstems 107, 109. Earstems 107, 109 may be formed in the same manner as upper frame 25. Earstems 107, 109 may be pivotably secured to the lateral ends of an upper frame 25 (FIGS. 2 and 3) or to a frame which also or alternatively bounds the lower edge of the lens (not illustrated). Earstems 107, 109 may also be pivotably secured directly to the lens (FIG. 9) without the use of a conventional frame.

Although this invention has been described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art are also within the scope of this invention. Accordingly, the scope of this invention is intended to be limited only by the appended claims.

What is claimed is:

1. An arcuately molded lens for eyeglasses for participation in active sports, such as biking and skiing, said lens comprising:
 - a top edge and a bottom edge, said bottom edge having a nose opening therein for mounting said lens on the nose of a wearer and for defining a right and a left lens region;
 - said lens having a bridge portion over said nose opening, the distance separating the lower edge of said bridge portion and the top edge of the lens being defined as d_1 and the distance separating the top edge of the lens and the lowest bottom edge of the lens being defined as d_2 , wherein d_1 is in the range of about $\frac{1}{4}$ inch to about $1\frac{1}{4}$ inches, and d_2 is in the range of about $1\frac{1}{2}$ inches to about 3 inches;
 - said lens having an arcuate horizontal cross sectional configuration, wherein the arc length (L1) of said lens is in the range of from about five inches to about seven inches;
 - wherein the bottom edge of each of said right and left lens regions is concavely indented, open in the

8

downward direction, with a maximum indentation depth of no less than about $1/16$ of an inch.

2. An arcuately molded lens for eyeglasses as in claim 1, wherein each of said concavely indented regions has a maximum depth within the range of from about $1/16$ inch to about $\frac{1}{4}$ inch.

3. An arcuately molded lens for eyeglasses as in claim 1, wherein at least two concavely indented regions are provided in each of said right and left lens regions.

4. The lens of claim 1, wherein the sum of the areas of the indentations in any one of said lens regions is between approximately 1% and 50% of the remaining area of said lens region.

5. An arcuately molded lens for eyeglasses as in claim 4, wherein each of said concavely indented regions has a depth within the range of about $1/32$ inch to about $1\frac{1}{2}$ inches.

6. A pair of eyeglasses, comprising a right and left earstem pivotably attached to an arcuately molded lens, wherein said lens comprises a top edge and a bottom edge;

said bottom edge having a nose opening therein for mounting said lens on the nose of a wearer and for defining a right and a left lens region;

said lens having a bridge portion over said nose opening, the distance separating the lower edge of said bridge portion and the top edge of the lens being defined as d_1 and the distance separating the top edge of the lens and the lowermost bottom edge of the lens being defined as d_2 , wherein d_1 is in the range of $\frac{1}{4}$ to about $1\frac{1}{4}$ inches, and d_2 is in the range of about $1\frac{1}{2}$ inches to about 3 inches,

said lens having an arcuate horizontal cross sectional configuration, wherein the arc length (L1) of said lens is in the range of from about five inches to about seven inches,

wherein the bottom edge of each of said right and left lens regions is concavely indented, open in the downward direction, with a maximum indentation depth of no less than about $1/16$ inch.

7. A pair of eyeglasses as in claim 6, further comprising an upper frame, wherein said earstems are pivotably secured to said upper frame and said upper frame is secured to said lens.

8. A pair of eyeglasses as in claim 6, further comprising an upper and a lower frame, wherein said earstems are pivotably secured to said upper frame and said upper frame is secured to said lens.

9. A pair of eyeglasses as in claim 6, further comprising a frame which surrounds said lens, wherein said earstems are pivotably secured to said frame and said frame is secured to said lens.

10. A lens for eyeglasses, said lens being suitable for participation in active sports, such as biking and skiing, comprising:

an upper edge and a lower edge, said lower edge having a nose piece opening therein for mounting said lens on the nose of a wearer and for defining a right and a left lens region,

said lens having an arcuate horizontal cross sectional configuration in its molded condition,

said lens having an inner concave surface and an outer concave surface and a thickness there between,

wherein the lower edge of each of said right and left lens regions is provided with at least one indentation having a depth no less than about $1/16$ inch,

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5,208,614

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thereby facilitating ventilation below and behind the lens.

11. The lens of claim 10, wherein said arcuate horizontal cross-sectional configuration of said lens is comprised of a central region and a first and second adjacent, distal regions, the thickness of said lens in at least one portion of each of said distal regions being less than the thickness of said lens in said central region.

12. The lens of claim 11, wherein the thickness of said lens at the midpoint of said central region tapers gradually to a reduced thickness in said distal regions.

13. The lens of claim 10, wherein the sum of the areas of said indentations in either of said left or right lens regions is between approximately 1% and 50% of the remaining area of said left or right lens region.

14. The lens of claim 13, wherein no more than one indentation is provided in each of said right and left lens regions.

15. The lens of claim 10, wherein said lens has an arcuate horizontal cross-sectional configuration in its molded condition which substantially conforms to the surface of a cylinder.

16. The lens of claim 15, wherein the radius from the axis of said cylinder to the inner concave surface of said lens is a substantially constant radius in the range of from about $2\frac{1}{4}$ inches to about $4\frac{1}{4}$ inches.

17. The lens of claim 10, wherein the radius of curvature of said lens along a horizontal plane is defined by R_2 , the radius of curvature along a vertical plane through said lens has a radius defined by R_3 , and wherein R_2 is equal to or less than R_3 .

18. A lens as in claim 17, wherein R_2 is in the range of from about 2 inches to about 4 inches, and R_3 is greater than or equal to $1.10 R_2$.

19. A pair of eyeglasses, comprising:

a lens having an upper edge and a lower edge,

said lower edge having a nose piece opening therein for mounting said lens on the nose of the wearer and for defining a right and left lens region,

said lens having an arcuate horizontal cross sectional configuration in its molded condition,

said lens having an inner concave surface and an outer concave surface and a thickness therebetween,

wherein the lower edge of each of said right and left lens regions is provided with at least one indentation having a depth no less than about

$1/16$ inch, thereby facilitating ventilation below and behind the lens; and

a right and a left earstem pivotably attached to the lens.

20. A pair of eyeglasses as in claim 19, further comprising an upper frame, wherein said earstems are pivotably secured to said upper frame and said upper frame is secured to said lens.

21. A pair of eyeglasses as in claim 19, further comprising a nose piece disposed in the nose piece opening formed on the lower edge of said lens.

22. A pair of eyeglasses as in claim 19, further comprising a frame which surrounds said lens, wherein said earstems are pivotably secured to said frame and said frame is secured to said lens.

23. An eyeglass lens of the type adapted to be used in a dual lens eyewear system suitable for participation in active sports, such as biking and skiing, said lens comprising a top edge and bottom edge wherein the bottom edge of said lens is indented upwardly to form at least one downward facing concavity for facilitating ventilation between the bottom edge of the lens and the face of a wearer when said lens is mounted on a frame to form a pair of eyeglasses.

24. An arcuately molded lens for eyeglasses comprising a top edge and a bottom edge, said bottom edge having a nose piece opening formed therein for mounting said lens on the nose of a wearer and for defining a right and a left lens region, the improvement comprising at least one concave ventilation indentation in the bottom edge of each of said right and left lens regions.

25. An arcuately molded lens for eyeglasses comprising a lens having a top edge and a bottom edge, said bottom edge having a nose piece opening formed therein for mounting said lens on the nose of a wearer and for defining a right and a left lens region, and wherein said lens has a bridge portion over said nose piece opening, the distance separating the lower edge of said bridge portion and the top edge of the lens being defined as d_1 and the distance separating the top edge of the lens and the bottom edge of the lens being defined as d_2 , wherein D_1 is in the range of about 178 inch to $1\frac{1}{4}$ inches, and d_2 is in the range of about $1\frac{1}{4}$ inches to $2\frac{1}{4}$ inches, and said lens has an arcuate cross-sectional configuration, wherein the arc length (L1) of said lens is in the range of from about $5\frac{1}{4}$ inches to 7 inches, the improvement comprising at least one concave ventilation indentation in the bottom edge of each of said right and left lens regions.

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US00D324528S

United States Patent [19]

(11) Patent Number: Des. 324,528

Jannard

(45) Date of Patent: Mar. 10, 1992

[54] EYEGLASSES

[75] Inventor: James H. Jannard, San Juan Capistrano, Calif.

[73] Assignee: Oakley, Inc., Irvine, Calif.

[**] Term: 14 Years

[21] Appl. No.: 495,295

[22] Filed: Mar. 16, 1990

[52] U.S. Cl. D16/102

[58] Field of Search D16/102, 111, 112, 116, 117, 127, 101; 351/41, 44, 49, 111, 112, 114

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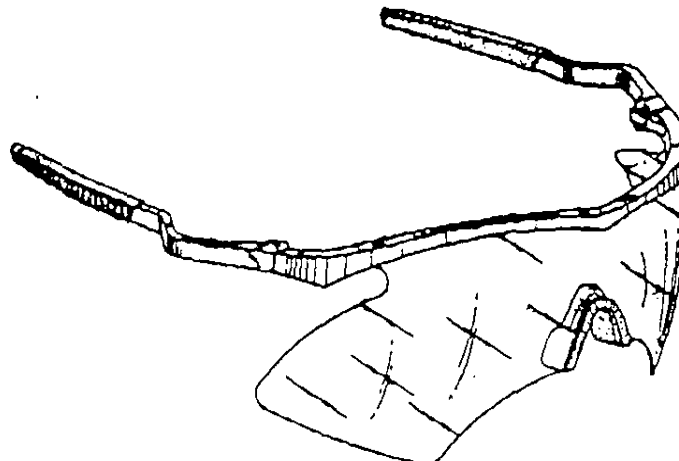
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Primary Examiner—Bernard Ansher
 Assistant Examiner—R. Barkai
 Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear

[57] CLAIM

The ornamental design for eyeglasses, as shown and described.



Des. 324,328

Page 2

DESCRIPTION

FIG. 1 is a frontal perspective view of eyeglasses showing my new design;

FIG. 2 is a rear perspective view thereof;

FIG. 3 is a top plan view thereof;

FIG. 4 is a bottom plan view thereof;

FIG. 5 is a front elevational view thereof;

FIG. 6 is a rear elevational view thereof; and

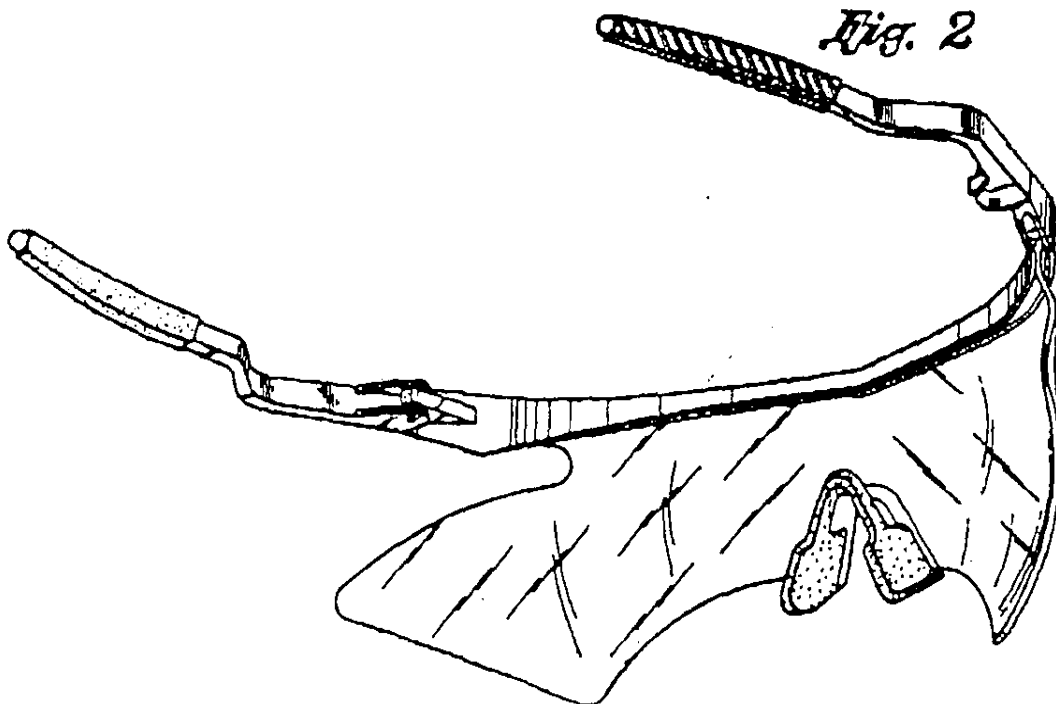
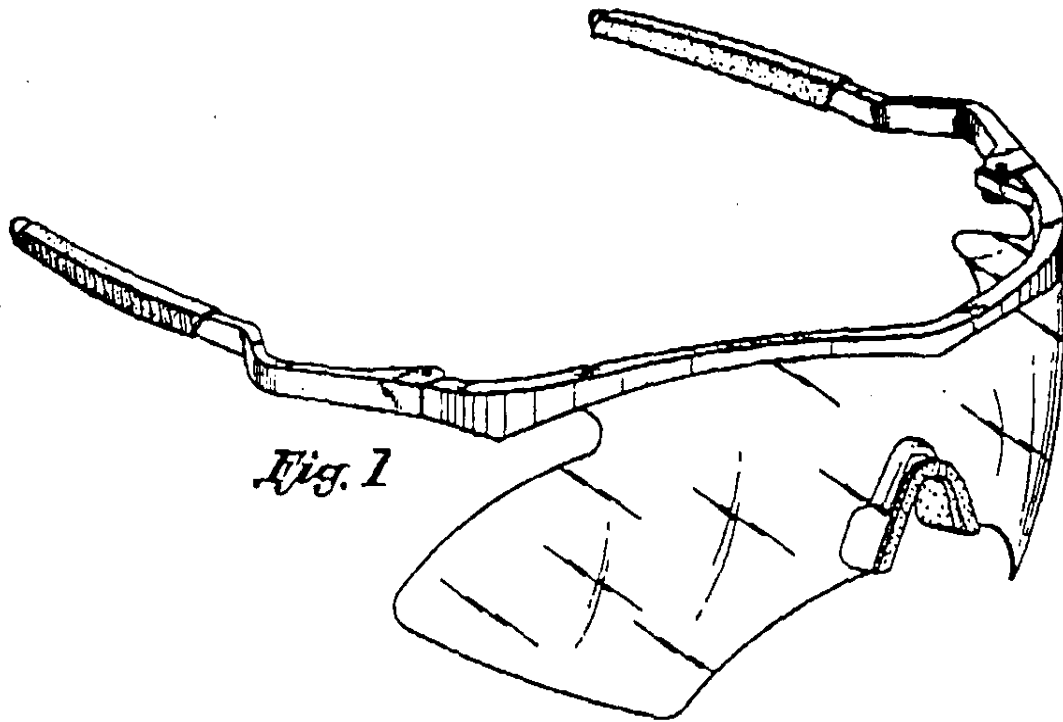
FIG. 7 is a left side elevational view thereof, the right side elevational view being a mirror image.

U.S. Patent

Mar. 10, 1992

Sheet 1 of 3

Des. 324,528



U.S. Patent

Mar. 10, 1992

Sheet 2 of 3

Des. 324,528

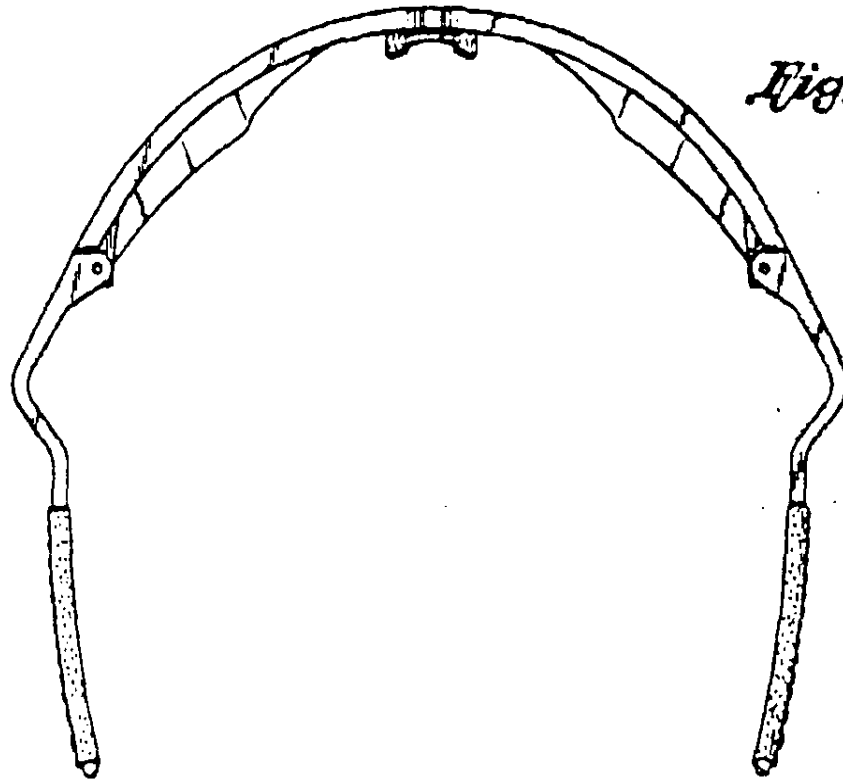


Fig. 3

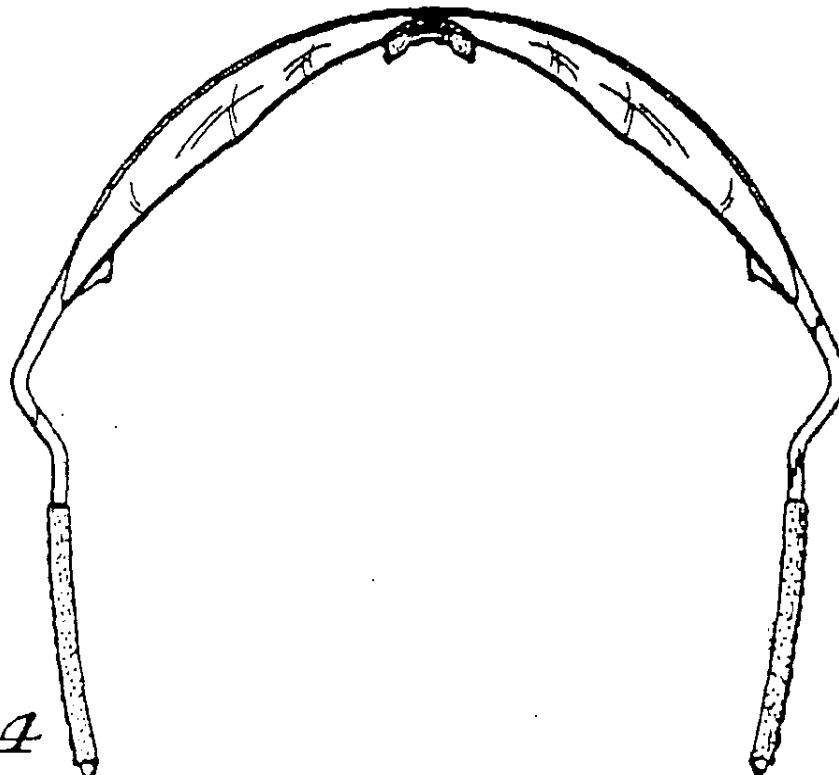


Fig. 4

U.S. Patent

Mar. 10, 1992

Sheet 3 of 3

Des. 324,528

Fig. 5

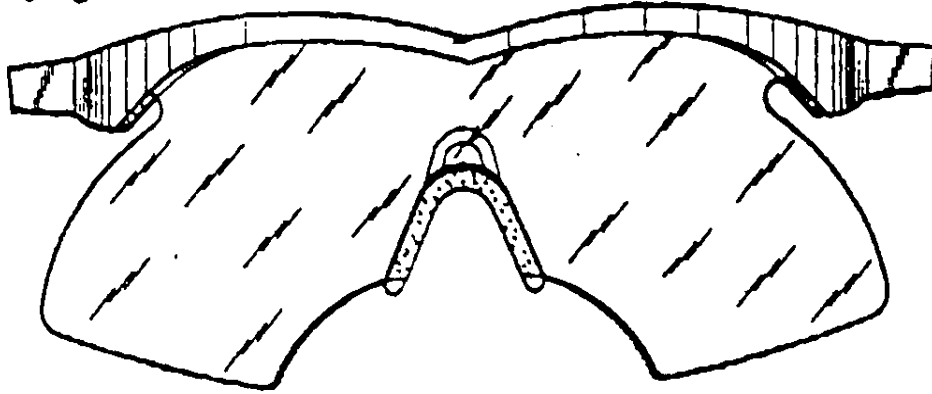


Fig. 6

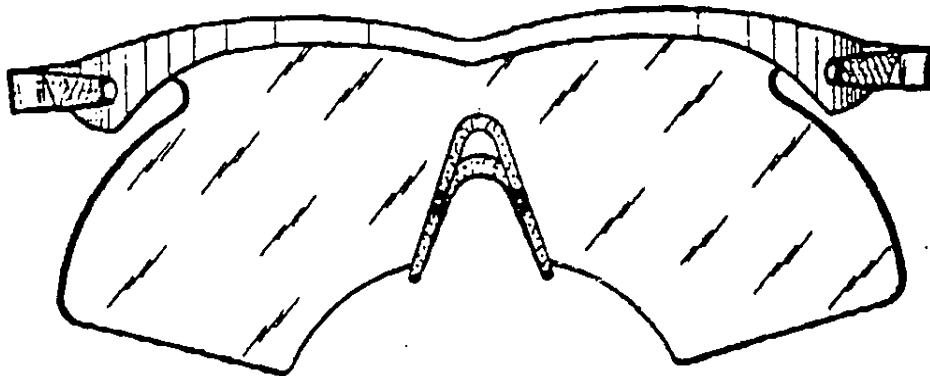
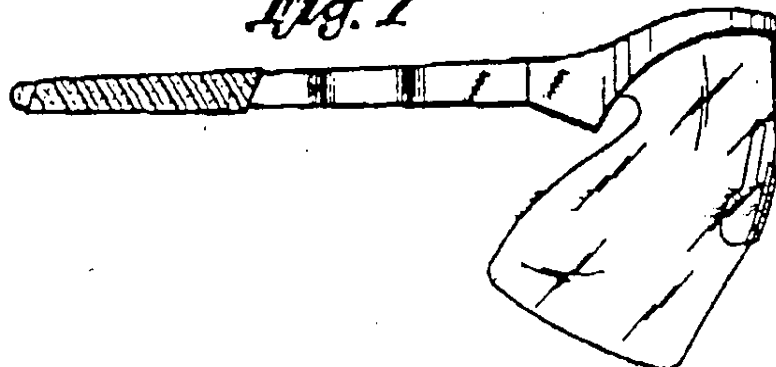


Fig. 7





US00D331763S

United States Patent [19]

[11] Patent Number: Des. 331,763

Jannard

[45] Date of Patent: ** Dec. 15, 1992

[54] UNITARY EYEGLASS LENS

[75] Inventor: James H. Jannard, San Juan Capistrano, Calif.

[73] Assignee: Oakley, Inc., Irvine, Calif.

[*] Notice: The portion of the term of this patent subsequent to Aug. 4, 2006 has been disclaimed.

[**] Term: 14 Years

[21] Appl. No.: 574,007

[22] Filed: Aug. 28, 1990

[52] U.S. Cl. D16/101

[58] Field of Search D16/102, 111, 112, 116, 114
D16/117, 127, 101; 351/41, 44, 49, 111, 112, 114

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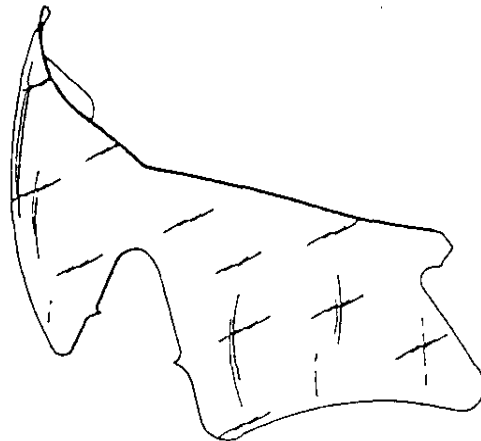
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Primary Examiner—Bernard Ansher
 Assistant Examiner—R. Barkai



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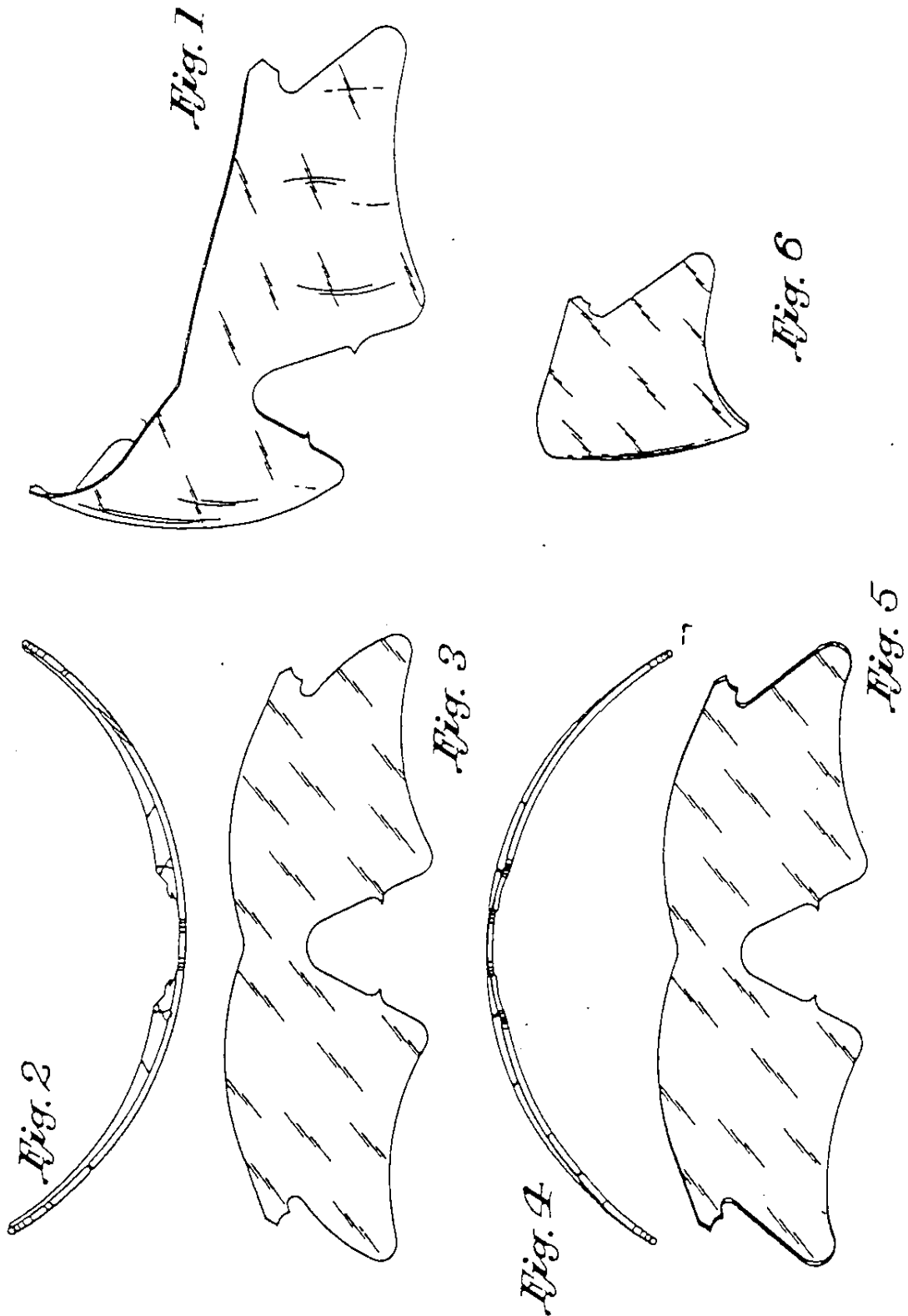
Attorney, Agent, or Firm—Knobbe, Martens, Olson &
Bear

DESCRIPTION

FIG. 1 is a frontal perspective view of a unitary eyeglass lens showing my new design;
FIG. 2 is a top plan view thereof;
FIG. 3 is a front elevational view thereof;
FIG. 4 is a bottom plan view thereof;
FIG. 5 is a rear elevational view thereof; and,
FIG. 6 is a right side elevational view thereof, the left side elevational view being a mirror image.

[57] CLAIM

The ornamental design for a unitary eyeglass lens, as shown and described.



United States Patent [19]

Jannard

[11] Patent Number: 4,867,550

[45] Date of Patent: * Sep. 19, 1989

[54] TOROIDAL LENS FOR SUNGLASSES

[75] Inventor: James H. Jannard, Laguna Niguel, Calif.

[73] Assignee: Oakley, Inc., Irvine, Calif.

[*] Notice: The portion of the term of this patent subsequent to Jun. 23, 2004 has been disclaimed.

[21] Appl. No.: 151,173

[22] Filed: Feb. 1, 1988

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 893,091, Aug. 4, 1986, abandoned, which is a continuation-in-part of Ser. No. 787,242, Oct. 15, 1985, Pat. No. 4,730,915, which is a continuation-in-part of Ser. No. 690,642, Jan. 11, 1985, Pat. No. 4,674,851.

[51] Int. CL⁴ G02C 9/00
 [52] U.S. CL 351/47; 351/44
 [58] Field of Search 351/44, 47, 62, 103,
 351/109, 158, 159; 2/426, 429

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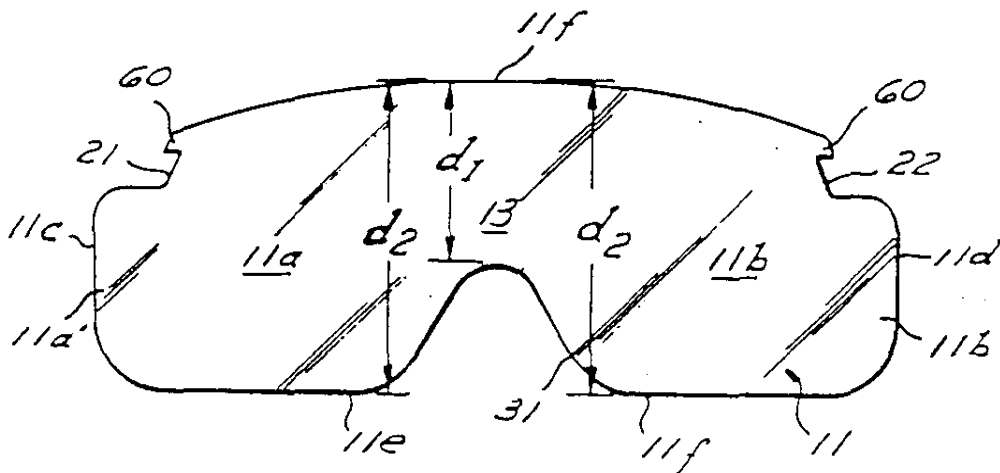
Picture of Oakley Blades as First Worn 8/27/85.

Primary Examiner—Rodney B. Bovernick
 Assistant Examiner—R. M. Dzierzynski
 Attorney, Agent, or Firm—Knobbe, Marten, Olson & Bear

[57] ABSTRACT

Disclosed is a toroidal lens for use in a pair of sunglasses, comprising a unitary pane of transparent material which is curved about each of two substantially perpendicular axes, each having a substantially constant radius such that the lens defines a portion of the surface of a toroid. A cross-section taken along the horizontal axis of the lens reveals an arcuate configuration which may be characterized as having a radius R_1 . A cross-section taken along a vertical axis reveals an arcuate configuration through the lens having a radius designated R_2 . Optimally, $R_2 \geq 1.10 R_1$, and the length of the lens along the horizontal arcuate cross-section is in the range of from about $5\frac{1}{2}$ inches to about 7 inches. The lens may have either a uniform thickness throughout, or may taper from a greater thickness in a region centered about the midpoint, generally above the nose of a wearer, to a lesser thickness near the peripheral ends of the lens.

13 Claims, 4 Drawing Sheets

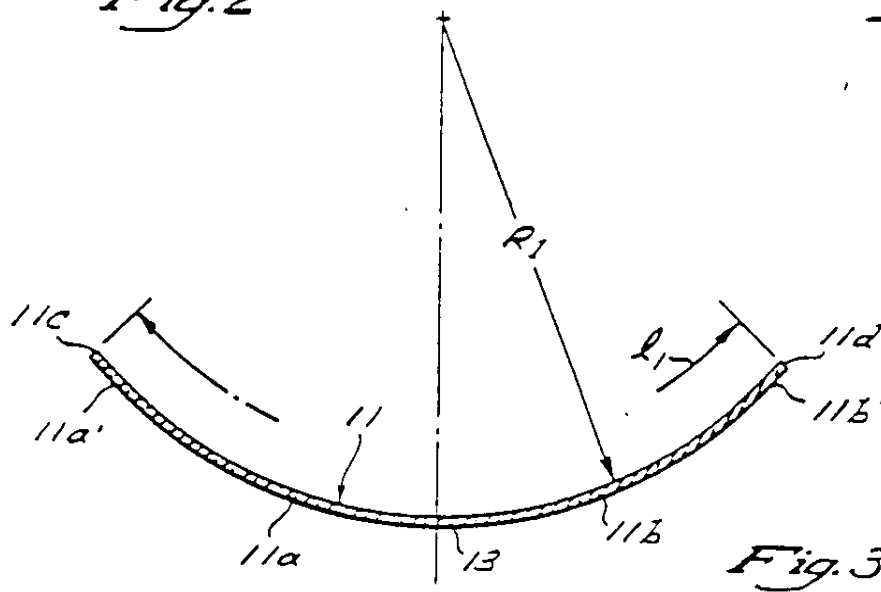
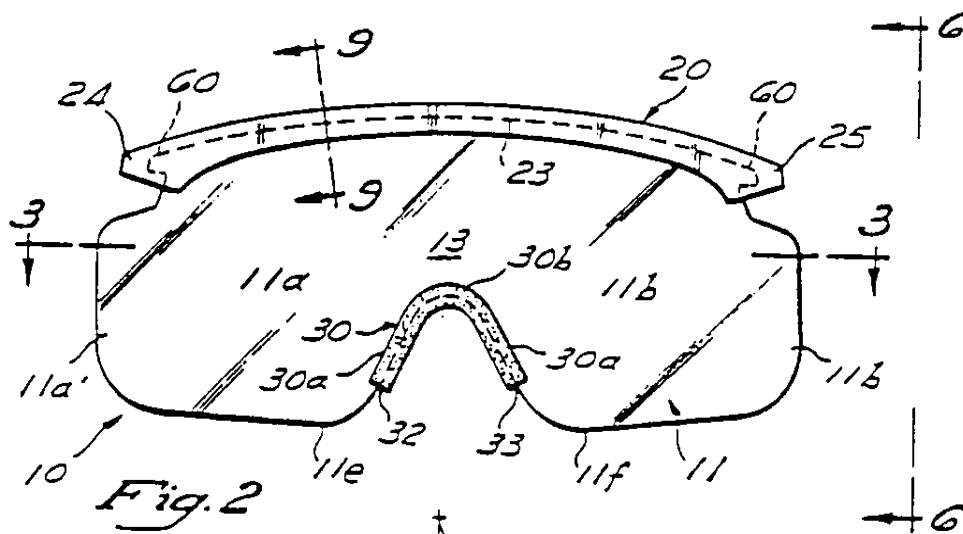
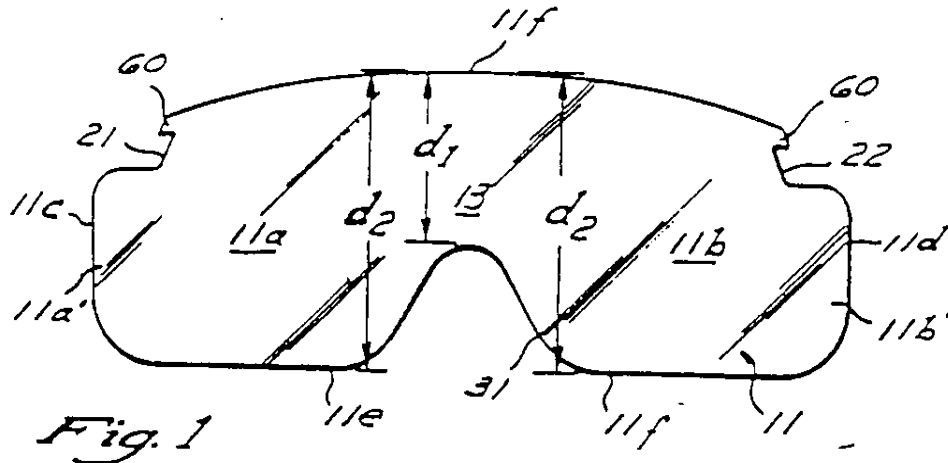


U.S. Patent

Sep. 19, 1989

Sheet 1 of 5

4,867,550



U.S. Patent

Sep. 19, 1989

Sheet 2 of 5

4,867,550

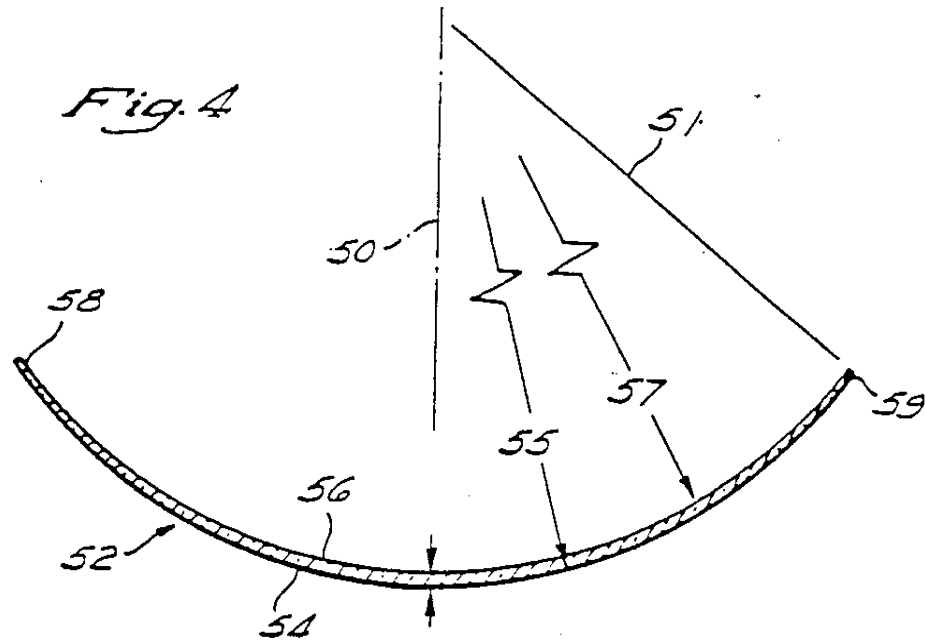
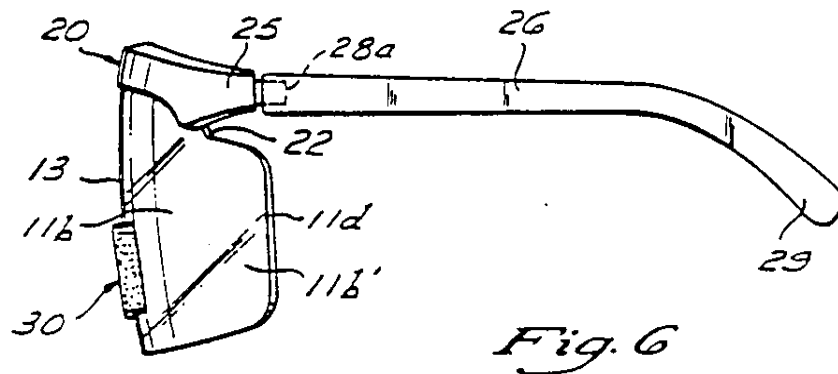
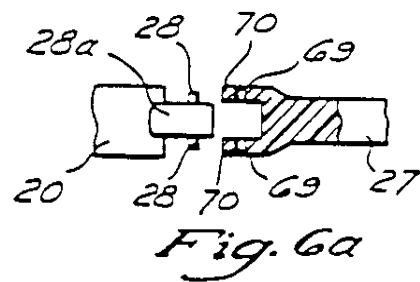
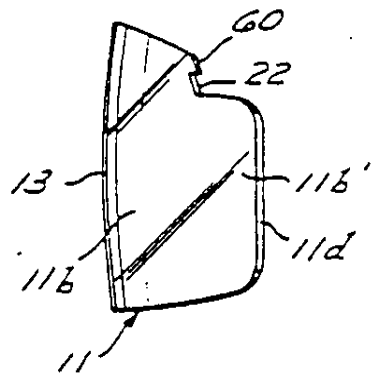


Fig. 5



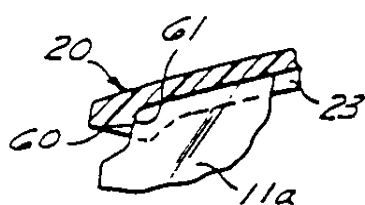
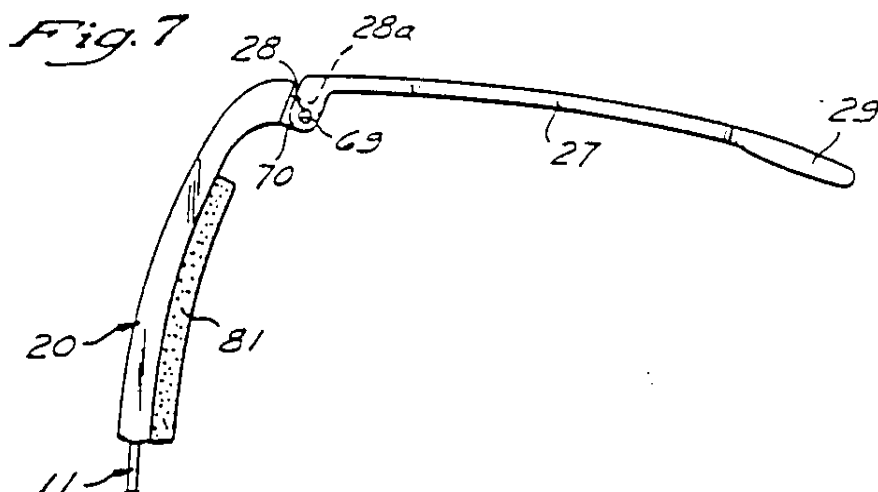


Fig. 8

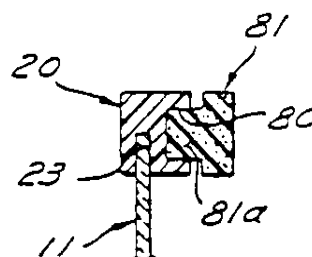


Fig. 9

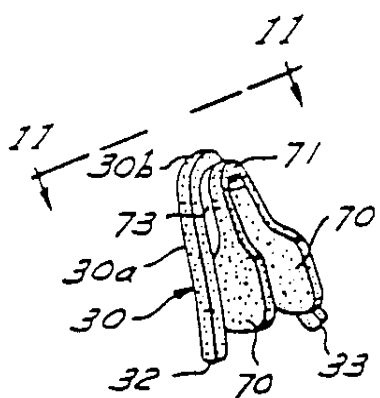
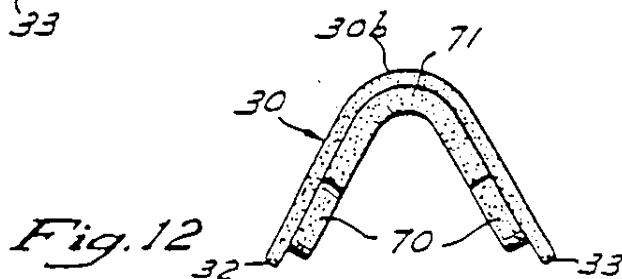
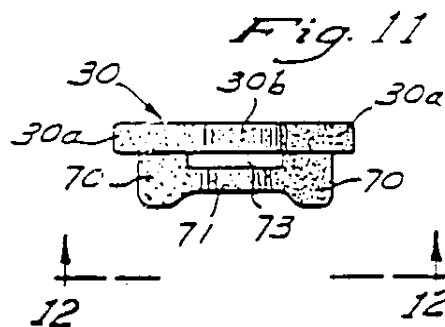


Fig. 10



U.S. Patent Sep. 19, 1989

Sheet 4 of 5

4,867,550

Fig. 13

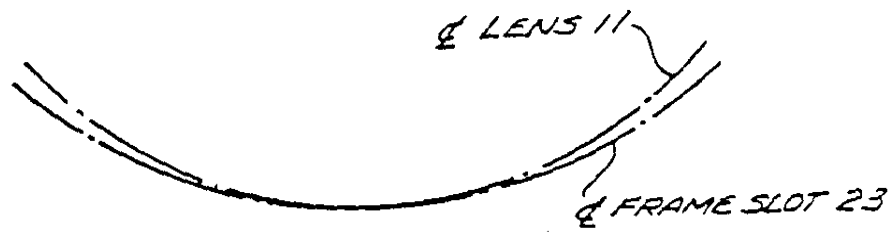


Fig. 14

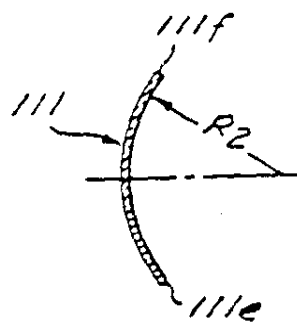
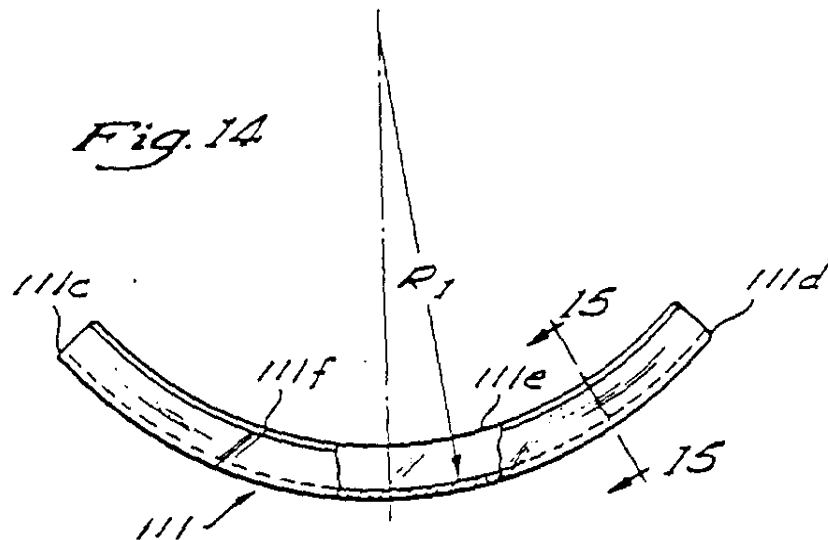


Fig. 15

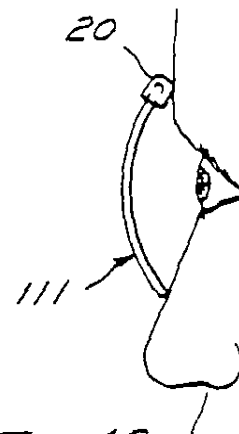


Fig. 16

U.S. Patent

Sep. 19, 1989

Sheet 5 of 5

4,867,550

Fig. 17



Fig. 19

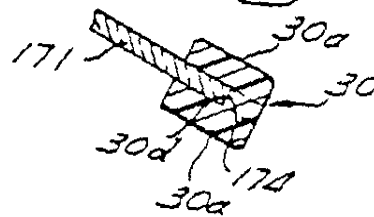


Fig. 18

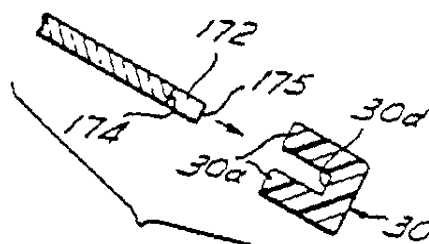
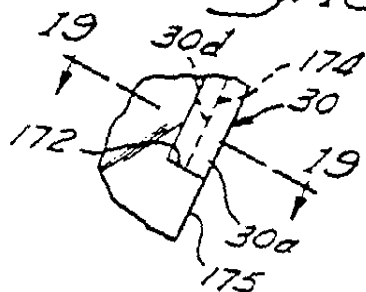


Fig. 20

Fig. 21

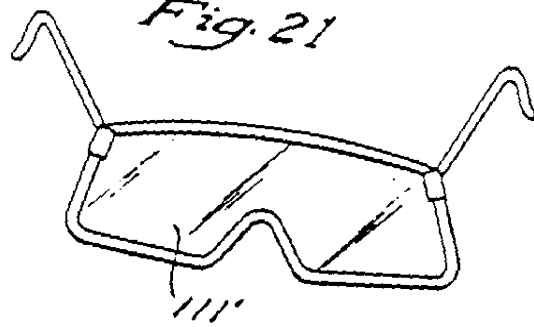
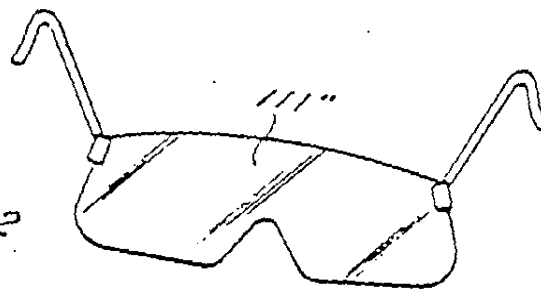


Fig. 22



4,867,550

1

2

TOROIDAL LENS FOR SUNGLASSES

BACKGROUND OF THE INVENTION

This application is a continuation-in-part of Ser. No. 893,091, now abandoned filed Aug. 4, 1986, which is a continuation-in-part of Ser. No. 787,242, filed Oct. 15, 1985 now U.S. Pat. No. 4,730,915, which is a continuation-in-part of Ser. No. 690,642, filed Jan. 11, 1985, issued June 23, 1987, as U.S. Pat. No. 4,674,851.

The present invention relates to a lens for sunglasses and, more particularly, to a unitary, high quality lens having exceptional optical clarity, and which extends substantially unobstructed throughout the wearer's entire angular range of vision. The lens of the present invention maximizes the interception of peripheral light and, due to the unique toroidal configuration of the lens, maximizes the distance from the eye to the lens while at the same time retaining good aerodynamic properties.

In addition to permitting sufficient ventilation to remain comfortable and resist fogging, the lens of the present invention also permits construction of sunglasses which conform closely to the front and sides of the wearer's head. The resulting low profile glasses utilizing the lens of the present invention are particularly suited for such situations as competition skiing or bicycle racing which require precise optical resolution and aerodynamic efficiency. The toroidal lens of the present invention may also be advantageously used in eyewear design for underwater use, which also requires close conformation of the lens to the front and sides of the wearer's head, and also adequate clearance between the eye and the lens.

The lineage of current generation specialty eyewear began with the dual lens system, wherein a separate lens was provided for each eye generally cut from a spherical or planar blank. Efforts to eliminate peripheral light and make other improvements to the spherical or planar dual lens systems are described in my co-pending application Ser. No. 65,345, which is incorporated by reference herein.

The unitary, molded, frusto-conical lens blank was then developed, such as that disclosed in U.S. Pat. No. 4,515,448 to Tackles. Although diffraction gradients were minimized by molding the lens with a predetermined curvature, the unitary frusto-conical lens remains unsatisfactory for several reasons.

The next improvement in specialty eyewear utilized a unitary lens curved about an axis having a substantially constant radius throughout, such that the lens defined a portion of the wall of a cylinder. This lens is the subject of my co-pending application Ser. No. 65,345.

Notwithstanding the advantages of the cylindrical lens system for certain applications, there remains a need for a specialty lens having both excellent optical and aerodynamic properties and interception of peripheral light, yet at the same time having a low profile, adequate ventilation and sufficient room between the eye and the lens to maximize comfort.

SUMMARY OF THE INVENTION

There has been provided, in accordance with one aspect of the present invention, a unitary curved lens for mounting in a frame to form a pair of eyeglasses, conformed to extend in the path of the wearer's left and right eye fields of vision. The unitary lens of the present invention is curved along each of two substantially perpendicular axes to produce a lens of generally toroi-

dal configuration. Thus, a cross-section of the lens taken along a horizontal plane midway from the bottom of the lens to the top of the lens will reveal an arcuate cross-sectional configuration characterized by a first radius dimension R_1 . Similarly, a vertical cross-section through the lens will reveal an arcuate configuration characterized by a second radius dimension R_2 . Preferably, R_1 is in the range of from about 2 inches to about 4 inches, and $R_2 \geq 1.10 R_1$.

The lens is adapted to be removably secured to an eyeglass frame, which comprises a left and right ear stem for supporting the frame on the wearer's head. The lens may alternatively be mounted directly to the ear stems alone. In addition, the lens is provided with an upwardly humped lower edge to permit the lens to be further supported upon the wearer's nose.

In a further embodiment of the lens of the present invention, the unitary lens comprises a central region which is substantially symmetrically located with respect to the nose opening, and a pair of distal regions adjacent either side of the central region, wherein the thickness of the lens is greater in the central region than it is at any point within at least one of the distal regions. Optimally, the thickness of the lens at a point approximately 45° along the horizontal arc characterized by R_1 from the midpoint of the lens is from about 40% to about 99% of the thickness of the lens at the midpoint.

Further objects, features and advantages of the present invention will become apparent from the detailed description of preferred embodiments which follows, when considered together with the attached figures and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of a unitary pane of the present invention in flattened condition;

FIG. 2 is a front elevational view of sunglasses incorporating the invention;

FIG. 3 is a section on lines 3—3 of FIG. 2 normal to the vertical axis of the lens, showing a first embodiment thereof;

FIG. 4 is a sectional view like FIG. 3, of a different embodiment of the lens of the present invention;

FIG. 5 is a side view of the lens of the present invention in as-molded condition;

FIG. 6 is a side view of the assembled sunglasses on lines 6—6 of FIG. 2;

FIG. 6a is an inner side view of the ear stem detached from the top frame;

FIG. 7 is a partial top plan view showing the frame, padding and stem hinge structure;

FIG. 8 is an enlarged fragmentary section showing tang interfit of the unitary pane and top frame;

FIG. 9 is an enlarged section taken on lines 9—9 of FIG. 2 to show frame slots for both the pane and padding;

FIG. 10 is a perspective view of a nose piece with attached elastomeric pads to engage the sides of the wearer's nose;

FIG. 11 is a top plan view on lines 11—11 of FIG. 10;

FIG. 12 is a front view on lines 12—12 of FIG. 11;

FIG. 13 is a diagram to show mismatch between interfits of the pane and top frame;

FIG. 15 is a top plan view of the lens of the present invention with the R_2 radius less than R_1 for the purpose of illustration;



4,867,550

3

FIG. 16 is a section taken on lines 16—16 of FIG. 15 with R_2 shortened for the purpose of illustration;

FIG. 17 is a schematic view, like FIG. 16, but showing fit of the lens to a wearer's face at an eye location, and having R_2 shortened for the purpose of illustration;

FIG. 18 is a fragmentary front view of a modified lens sheet;

FIG. 19 is an enlarged frontal view showing fit of a nose piece to the FIG. 18 lens sheet;

FIG. 20 is an enlarged section taken on lines 20—20 of FIG. 19;

FIG. 21 is a view, like FIG. 20, but showing inward retraction of a grooved nose piece from the lens sheet edge for removal of the nose piece;

FIG. 22 is a frontal view of a lens sheet, as in FIGS. 15 and 16, but with a full frame fitted to the lens sheet; and

FIG. 23 is a frontal view of a lens sheet, as in FIGS. 15 and 16, but with ear stems directly connected to the lens sheet.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, there has been provided in accordance with one aspect of the present invention a unitary curved lens 11 for mounting in a frame 20 to form a pair of eyeglasses 10, conformed to extend in the path of the wearer's left and right eye fields of vision.

The unitary lens 11 of the present invention is curved along each of two substantially perpendicular axes to produce a lens of generally toroidal configuration. The toroidal configuration accrues the styling and aerodynamic advantages described above, as well as providing sufficient clearance within the lens so that the wearer's eyelashes do not come in contact with the interior surface thereof. Such contact can be a significant disadvantage during demanding activities like skiing or bicycle racing, or with the use of low profile underwater goggles which are difficult to clear when in use.

As shown in FIG. 3, the curvature of the present lens 11 permits it to conform closely from side-to-side to the wearer's face, thus maximizing the interception of sun and light from other strong sources, while at the same time providing comfort, aerodynamic stability and pleasing aesthetic characteristics. The unitary aspect of the lens of the present invention eliminates the need for multiple frame support mechanisms and enhances the unobstructed field of the wearer's vision.

The lens of the present invention may be conveniently described by reference to a front elevational view, such as in FIG. 1, in which an arc along the horizontal length L of the lens, i.e., from a first ear stem to a second ear stem is defined by a radius designated R_1 in FIGS. 3 and 15. An arc along the vertical extent of the lens is characterized by the radius R_2 . See FIG. 16, which illustrates the lens as having a greater curvature, i.e., shorter R_2 radius than actual, for the purpose of illustration. The relationship of the radii R_1 to R_2 is important to accruing the advantages of the present invention, and will be detailed, infra.

Optimally, the lens 11 has a radius of curvature R_1 in the "as-molded" condition which is substantially unchanged by mounting the lens 11 in a pair of eyeglass frames 20. It has been determined that optical properties of a lens are detrimentally affected by deviations from the as-molded condition. For example, bending a lens cut from flat sheet stock or a flat molded blank to provide a curved pane inherently results in minor varia-

4

tions in the radius along the arc length of the lens. Variations in the light diffraction properties of the lens result, which introduce distortion. In addition, bending a lens can also result in stress fractures or other compression or expansion induced flaws which can impair the optical qualities of the lens.

Thus, the lens is preferably pre-molded to the desired configuration. Although a variety of radii might accrue the advantages of the present invention, the lens is preferably molded to a radius R_1 which is within the range of from about 2.00 to about 4.00 inches, and preferably within the range of from about 2.75 to 3.50 inches.

The radius R_2 will always be greater than the radius R_1 . Preferably, R_2 will exceed R_1 by at least 10% and, more preferably, R_2 will exceed R_1 by at least about 15%. For example, R_2 is generally within the range of from about 110% to about 400% R_1 and, preferably, R_2 is within about 150%—300% R_1 .

The foregoing radius dimensions represent the distance from an axis to the arc which defines the interior, concave surface of the lens, such as radius 57 in FIG. 4. The lens of the present invention has sufficient thickness that it is not accurately defined as having only a single radius. Instead, the lens has a thickness or depth dimension along its entire arc length which causes the arc defined by the outer convex surface 54 to have a different radius 55 than the radius 57 of the arc defined by the inner concave surface 56 of the lens. Hence, in an embodiment where the lens is of substantially uniform thickness throughout, and the axes are coincident, the radius of the outer convex surface is essentially equal to the sum of the radius of the inner concave surface and the depth or thickness of the lens in the foregoing embodiment.

In accordance with another aspect of the present invention, there has been provided a unitary lens substantially as described above, with the following modification. Referring to the horizontal sectional view of the present embodiment, as illustrated in FIG. 4, there is disclosed a lens 52 defined between an outer convex surface 54, having a radius 55 and an inner concave surface 56, having a radius 57. The principal difference from the previously detailed embodiment is that the thickness of the lens 52 at each of the distal ends 58 and 59 is less than the average thickness of the lens at every point intermediate the two distal ends 58 and 59. In addition, the thickness of lens 52 measured at at least one point intermediate the two ends 58 and 59 is greater than the thickness at each of those ends.

The invention can best be understood by reference to FIG. 4, which illustrates the relationship between the lens thickness and the angular position along the horizontal arc length of a lens. Since the arc length L of a lens can be varied considerably, although it is preferably within the range of from about 5.50 to 7 inches, reference points will arbitrarily be selected at the center line 50 and at the 45° line 51. Thus, since the distance from center line 50 to reference line 51 is $\frac{1}{4}$ of 360°, the reference arc length for a radius of 3 inches is about 4.7 inches, which is below the preferred minimum arc length, and thus will define a point on the lens.

In accordance with the tapered lens embodiment of the present invention, the thickness of the lens at reference line 51 is preferably from about 40% to about 99% of the thickness at center line 50. Thus, for example, a lens having a center line thickness of about 0.060 inch will preferably have a thickness of within the range of about 0.024 to about 0.059 inch at reference line 51, and



4,867,550

5

a thickness near the distal end within the range of about 0.020 to about 0.055 inch. The thickness of the lens at the midpoint is preferably within the range of from about 0.050 to about 0.090 inch.

Preferably, the thickness of the lens tapers at a substantially even rate from the widest region which is centered about center line 50 to narrower regions near each of the distal ends 58 and 59. In this manner, optical distortion is minimized, as has previously been discussed. By even rate of taper, it is meant that the taper results from the convergence of an arc defining the outer surface 54 of lens 52 and an arc defining the inner surface 56 of lens 52, each arc characterized by substantially constant radii 55 and 57, respectively. Conformation of the lens surfaces to substantially constant radius curves accrues important optical advantages.

The foregoing may be accomplished in a variety of ways, such as, for example, by making radius 55 equal to radius 57 and displacing the center points from each other. Alternatively, radius 55 may be greater or lesser than radius 57, so long as the converging geometry results.

In the production lens, of course, the distal ends 58 and 59 are formed well before the continuation of the arcs defining surfaces 54 and 56 converge. In a toroidal lens produced in accordance with this embodiment, for example, and having a center line thickness of approximately 0.060 inch, the thickness at either distal end 58 and 59 will generally be within the range of from about 0.040 to about 0.055 inch.

Finally, since a portion of the lens 52 near the distal ends 58 and 59 serves primarily to block peripheral light and is likely outside of the wearer's line of vision, it is less crucial that the radius of curvature be constant in this area. Thus, the lens may be provided with an even rate of taper only up to a certain point intermediate the reference line 51 in FIG. 4 and the distal end 59. From near that point until the distal end 59, the lens 52 may be provided with a relatively constant thickness or a taper of a different rate. Perhaps less desirable from a manufacturing standpoint, this embodiment could still accrue the advantages of the present invention.

The preceding discussion pertains to the contour of the lens, as distinguished from its shape, which will now be discussed. The shape of one embodiment of the lens may be best understood by reference to FIGS. 1 and 2, although many other shapes can be envisioned which will accrue the advantages of the present invention.

A first eye pane 11a and a second eye pane 11b are located directly in front of the wearer's right and left eyes, respectively, and are merged together with a unitary bridge portion 13. In addition, the distal portion 11a' of eye pane 11a, for example, continues along the arc path of the lens 11, as discussed above in connection with FIG. 3, such that it preferably traverses the entire angular range of vision for the corresponding eye. Similarly, the distal portion 11b' of eye pane 11b extends substantially all the way across the wearer's angular range of vision for the other eye. In this manner, a substantial amount of light which approaches the eye from a peripheral direction will travel through the lens before reaching the wearer's eyes.

The objective of shielding against peripheral light is best accomplished in a lens having a radius within the above-stated ranges, if the arc length of the lens is within the range of from about 5.50 to about 7 inches. The arc length of the lens is the length along the surface

6

of the lens from a first distal end 11c to a second distal end 11d, as illustrated in FIGS. 1 and 3.

Another aspect of the lens of the present invention is that not only does it effectively block peripheral light, but it still permits sufficient ventilation to remain comfortable and to resist fogging. Referring to FIG. 16, it can be seen that the uppermost edge 111f and lowermost edge 111e will lie on the surface of a cylinder. Thus, the toroid lens can accrue the advantages associated with substantially cylindrical unitary lenses. A top frame 20 can be provided for supporting the lens 11 which closely conforms to the shape of the wearer's forehead. This provides a seal against wind which, for example, in the case of the bicycle rider, is directed at a downward angle between the lens and the wearer's forehead. In addition, a band of an absorbent material 80 can be disposed between the frame 20 and the forehead to prevent perspiration from entering the wearer's eyes. See, for example, FIGS. 7 and 9. Alternatively, a frame may be provided which only borders the sides and/or bottom edge of the lens, (not illustrated), or which completely surrounds the lens. See FIG. 22. Finally, the ear stems may be secured directly to the lens, as in FIG. 23, without any frame at all.

At the same time, an imaginary secant drawn between edges 111f and 111e (FIG. 16), parallel to the vertical axis of the lens, gradually increases in distance from top to bottom away from the receding profile of the wearer's face, which is roughly defined by a frusto-conical curve. Thus, a ventilation gap results between the lower edges 11e and 11f of eye panes 11a and 11b, respectively (FIG. 1), and the wearer's face. This is a significant advantage over prior art frusto-conical lenses. For a lens dimensioned as described herein, the ventilation gap will be roughly from about 3/16 to about 5/16 inch greater than the corresponding gap, if any, in the frusto-conical system. The lens of the present invention additionally is advantageous over the cylindrical lens system since, in addition to accruing the ventilation advantages thereof, the lens of the present invention provides sufficient space between the eye and the lens to avoid eyelash contact.

The size of the ventilation gap will also depend in part upon the height d_2 of the lens, illustrated on eye pane 11b of FIG. 1 for convenience. It is understood that the height of the eye panes 11a and 11b will be essentially the same, and the discussion in connection with one is intended to apply to both. The height d_2 of the lens 11 of the present invention, measured from the top 11f of the lens 11 to the bottom edge 11e may be varied to optimize various functional and aesthetic considerations, but will typically fall within the range of from about 1.75 to about 3 inches, and preferably between about 2 and 2.75 inches. As previously discussed the two eye panes 11a and 11b merge into a unitary lens by way of a connecting bridge portion 13. The distance d_1 from the top 11f of the lens to the lower edge of the bridge portion 13 may also vary, but preferably is within the range of from about 0.75 to about 1.50 inches.

Referring to FIG. 2, the lens of the present invention may be provided with a top frame 20 extending along and bounding the upper edge of the lens or pane 11, which may be either the substantially constant thickness lens illustrated in FIG. 3 or the tapered thickness lens illustrated in FIG. 4. Frame 20 preferably bounds the upper edge of lens 11 along the area between the notched areas 21 and 22 formed immediately above the individual eye panes 11a and 11b. The frame advanta-

4,867,550

7

geously consists of relatively rigid molded plastic material, which may be transparent or dyed any of a variety of colors.

The top frame 20 is shown as being removably attached to the top edge of the lens 11. For this purpose, a slot 23 is formed upwardly therein from the bottom of the frame 20, with the curvature generally matching that of the lens to tightly, yet removably receive the lens upper edge. The curvature of the slot 23 may be slightly different than the as-molded R_1 curvature of the lens, to provide a mismatch, to grip the pane, which then resiliently co-acts with the frame to very slightly deform the pane and enhance a friction engagement. See FIG. 13. Note that the lens upper edge is shown to have slight upward convexity, as illustrated in FIGS. 1 and 2.

Fastening means such as one or more tangs 60 integral with the pane 11 on each end thereof and projecting over notched areas 21 and 22 fit in corresponding shallow recesses such as 61 illustrated in FIG. 8, in the frame, at opposite ends of the slot 23, to help retain the pane in position.

The top frame has enlarged end terminals at 24 and 25, portions of which extend in notched areas 21 and 22. In addition, terminals 24 and 25 are movably attached to two stems or arms 26 and 27 adapted to extend rearwardly to the wearer's ears. See FIGS. 6 and 7. Attachment may be, for example, by trunnions 28 or tongues 28a integral with top frame 20, and the bearings or openings 69 in flanges 70 integral with the stem, illustrated in FIG. 6a. These elements may be of molded, resilient plastic construction and designed to forcibly interfit, and to allow forcible "pull-away" as during impact, for the safety of the wearer. Stems 26 and 27 hook at 29 over the wearer's ears, and may also consist of molded plastic material.

A nose piece 30 may be provided as illustrated in FIGS. 6 and 10-12, which bounds the pane upwardly humped lower edge 31 (FIG. 1). The nose piece is provided with terminals 32 and 33 which are laterally spaced apart to be located along the edge 31 of the pane. The nose piece has upwardly extending sections 30a which taper toward one another, in matched relation to the pane edge 31. An upwardly convex section 30b interconnects the sections 30a. The nose piece has a slot formed therein to extend along upside down V or wave-shaped length of the nose piece for removable interfit with the upwardly humped lower edge 31 of pane 11.

FIGS. 20 and 21 show the nose piece 30 as channel-shaped in cross section, with flanges 30a that taper towards one another, to be spread apart upon reception of the pane, as seen in FIG. 20, providing a removable grip or retention of these elements.

The nose piece 30 preferably comprises a relatively soft elastomeric material having a coefficient of sliding friction that increases when the material is wet. Such a material is preferably hydrophilic and tends to retain the nose piece in position on the wearer's upper nose area as the wearer perspires, or encounters moisture as during skiing. Also, the preferred material is soft, for comfort. One such material is KROTON G, a product of Shell Oil Company.

FIGS. 10-12 show the provision of elastomeric pads 70 connected to the nose piece 30, and adapted to flex and closely fit the opposite sides of the wearer's nose. A V-shaped elastomeric connector 71 joins the pads to reinforce them and yieldably resist pad flexing. Connector 71 parallels the curvature of the nose piece at 30b,

8

and they define a ventilation slot 73 therebetween to pass air to the rear side of the pane 11 bridge section 13, to resist fogging.

The nose piece 30 and attached pads 70 may be removed relatively downwardly, and replaced with a selected substitute having different size, shape or color to meet the needs of the wearer. The top frame may also be easily removed upwardly from the pane and replaced with a different size or color frame. Alternatively, the pane itself may be replaced with a substitute having different sun blocking shading or composition, color, etc. Thus, the wearer or user may assemble his sunglasses from a large number of different components, as provided on a rack or other display, to result in an assembled sunglasses truly best fitted and best suited, component-wise, in every respect to the requirements of the wearer.

The notches or notched areas 21 and 22 that extend downwardly proximate the attachments of the hinged connections of the arms to the top frame also open sidewardly due to the curvature of the lens. It is found such upper notches draw discharge moisture collecting on the rearward surfaces of the pane and below the top frame (which projects rearwardly from the top of the pane). Such discharge is believed due to an aspirating affect of air directed laterally toward the notches at the front of the pane during forward movement of the wearer (as for example, a skier). Also, air turbulence at the rear side of the pane is reduced due to presence of the notches. Accordingly, the wearer's eyes are further protected from air turbulence and moisture, and during skiing, wind surfing, etc.

The frame 20 may also be provided with a second slot 80 sunk in its rearward side (see FIG. 9) to receive a tongue portion 81a of a foam pad strip 81. Padding 81 is adapted to engage the wearer's forehead, for comfort, whereby the sunglasses are yieldably supported on the wearer's nose by flexing elastomeric pads 70, and by engagement of pad 80 with the wearer's forehead, as during force application to the sunglasses toward the wearer's face.

FIG. 18 shows the nose portion 170 of a modified lens sheet 171 which is otherwise constructed as is lens sheet 11. It has an inverted V-shaped lower edge and upwardly facing shoulders 172 that act to block downward displacement of the lower ends 32 and 33 of the V-shaped nose piece 30, seen in FIG. 10. The lens sheet has two pairs of edges, each shoulder 172 extending between the edges 174 and 175 of each pair. As the nose piece 30 is pushed upwardly into position, its leg sections 30a ultimately snap outwardly away from one another so that the lowermost end of each leg section engages a shoulder 172. Note that each leg section is grooved, as at 30d, to receive the edge extent of the lens sheet. To remove the nose piece, the leg sections are press-deflected toward one another so that the lower ends of the leg sections clear the shoulders 172, and the nose piece is then removed downwardly.

Although this invention has been described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art are also within the scope of this invention. Accordingly, the scope of this invention is intended to be limited only by the appended claims.

What is claimed is:

1. A lens for eyeglasses, said lens adapted for mounting on a wearer by means of an eyeglass frame having a lens receiving portion and a pair of ear stems, said lens

4,867,550

9

being suitable for participation in active sports, such as biking, skiing and the like, said lens comprising:

a unitary pane having an upper edge and a lower edge, said lower edge having a nose piece opening formed therein for mounting said lens on the nose of the wearer, thereby mounting said lens in cooperation with the eyeglass frame on the head on the wearer, said upper edge of said lens having a generally upwardly arcuate configuration to maximize the surface area of said lens above the eye level of said wearer in order to intercept light rays incident from above,

said nose piece opening having an upper extremity, the distance separating the upper extremity of the nose piece and the upper edge of the pane being defined as d_1 , and the distance separating the upper edge of the pane and the lower edge of the pane being defined as d_2 , wherein d_1 is in the range between about $\frac{1}{2}$ -inch and $1\frac{1}{2}$ inches, and d_2 is in the range from about $1\frac{1}{2}$ inches to $2\frac{1}{2}$ inches, said dimensions providing optimum interception of light rays while allowing sufficient ventilation around the face of the wearer while participating in active sports,

said lens having a first arcuate cross-sectional configuration in a horizontal direction from a first ear stem to a second ear stem, having a radius designated R_1 , wherein the arc length (L) of said lens is in the range of about $5\frac{1}{4}$ inches to about 7 inches,

said lens having a second arcuate cross-sectional configuration in a vertical direction, having a radius designated R_2 ; and

means for mounting said lens on said lens-receiving portion of said frame, wherein $R_1 < R_2$, and R_1 is in the range of about 2 inches to about 4 inches.

2. The lens of claim 1, wherein the ratio of d_2 to L is in the range of about 0.30 to about 3.50.

3. The lens of claim 1, wherein R_1 is in the range of from about 2.75 inches to about 3.50 inches.

4. The lens of claim 1, wherein $R_2 \geq 1.10 R_1$.

5. The lens of claim 1, wherein said horizontal arc length L comprises a central region which is substantially symmetrically located with respect to said nose piece and a pair of distal regions adjacent either side of said central region, said thickness of said lens being in at least one point in said central region greater than the thickness of said lens at any point within at least one of said distal regions.

6. The lens of claim 5, wherein said central region is symmetrically located with respect to the midpoint along said arc length L, and wherein the thickness of said lens at said midpoint is between about 0.050 and about 0.090 inch.

7. The lens of claim 6, wherein the thickness of said lens at a point approximately 45° along said arc length L from said midpoint is from about 40% to about 99% of the thickness of said lens at said midpoint.

8. The lens of claim 6, wherein the thickness of said lens at a point about 45° along said arc length of said

10

lens from said midpoint is about 75% to about 98% of the thickness of said lens at said midpoint.

9. The lens of claim 5, wherein the thickness of said lens at said midpoint is between about 0.060 to about 0.070 inch, and the thickness of said lens in each of said distal regions is between about 0.040 and about 0.050 inch.

10. A lens for eyeglasses for participation in active sports, such as biking, skiing and the like, said lens comprising:

a single pane, unitary lens having an upper edge and a lower edge, said lower edge having a nose piece opening formed therein for mounting said lens on the nose of the wearer,

said nose piece opening having an upper extremity, the distance separating the nose piece upper extremity and the upper edge of the lens being defined as d_1 , and the distance separating the upper edge of the lens and the lower edge of the lens being defined as d_2 , wherein d_1 is in the range of about $\frac{1}{2}$ -inch to $1\frac{1}{2}$ inches, and d_2 is in the range of about $1\frac{1}{2}$ inches to $2\frac{1}{2}$ inches, said dimensions providing optimum interception of light rays while allowing sufficient ventilation around the face of the wearer while participating in active sports,

said lens having an arcuate horizontal cross-sectional configuration wherein the arc length (L) of said lens is in the range of from about $5\frac{1}{4}$ inches to 7 inches, and wherein the radius of said arc is defined by R_1 ,

said lens having an arcuate vertical cross-sectional configuration having a radius defined by R_2 , wherein $R_1 < R_2$ and R_1 is within the range of about 3 inches to 4 inches.

11. A lens for eyeglasses, said lens being suitable for participation in active sports, such as biking, skiing and the like, said lens comprising:

a single pane, unitary lens having an upper edge and a lower edge, said lower edge having a nose piece opening formed therein for mounting said lens on the nose of the wearer,

said lens having an arcuate cross-sectional configuration along a horizontal plane with a radius R_1 ,

said lens having an arcuate cross-sectional configuration along a vertical plane with a radius R_2 , wherein R_1 is in the range of about 2 inches to about 4 inches, and $R_2 \geq 1.10 R_1$.

12. The lens of claim 11, wherein said arcuate cross-sectional configuration of said lens along said horizontal plane is comprised of a central region and a pair of adjacent, distal regions, the thickness of said lens in said distal regions being less than the average thickness of said lens in said central region.

13. The lens of claim 12, wherein the thickness of said lens at the midpoint of said central region tapers substantially evenly to a reduced thickness in said distal regions.

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United States Patent [19][11] Patent Number: **5,054,903**

Jannard et al.

[45] Date of Patent: **Oct. 8, 1991**[54] **EYEWEAR TRACTION DEVICE**[73] Inventors: **James H. Jannard, San Juan Capistrano; Gregory F. Arnette, South Laguna Beach, both of Calif.**[73] Assignee: **Oakley, Inc., Irvine, Calif.**[21] Appl. No.: **436,474**[22] Filed: **Nov. 20, 1989**[51] Int. Cl.³ **G02C 5/14**[52] U.S. Cl. **351/123; 351/111;****351/122**[58] Field of Search **351/122, 123, 111, 119,**
351/121[56] **References Cited****U.S. PATENT DOCUMENTS**

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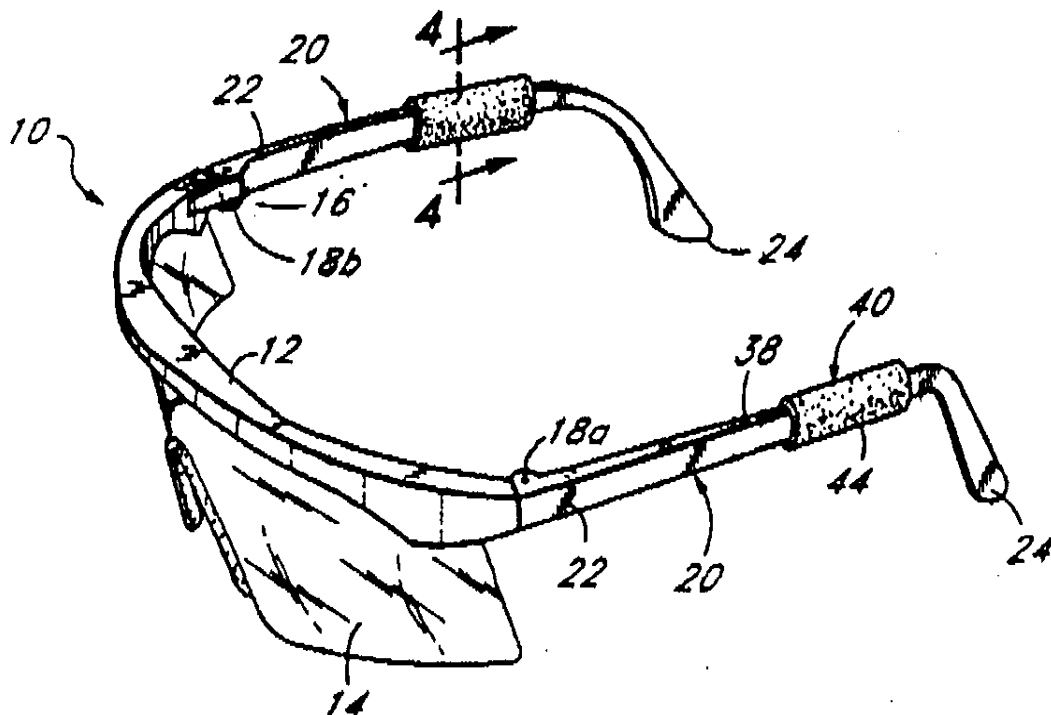
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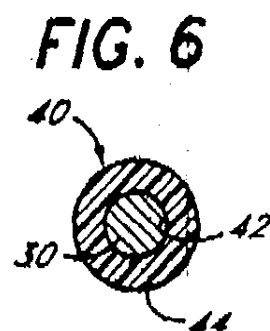
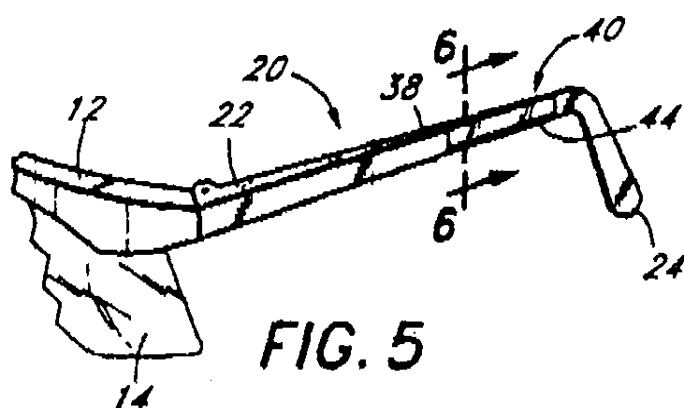
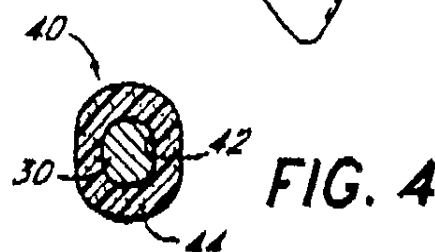
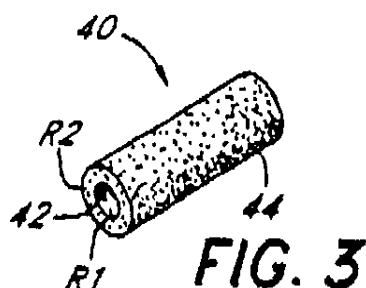
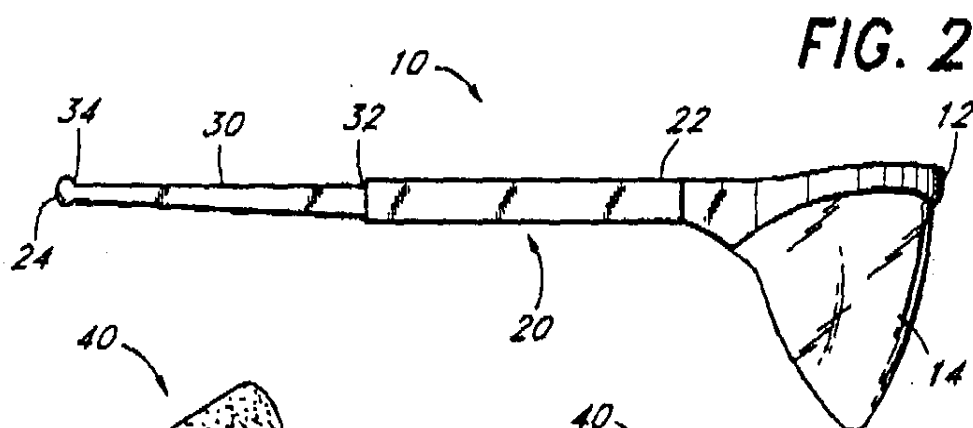
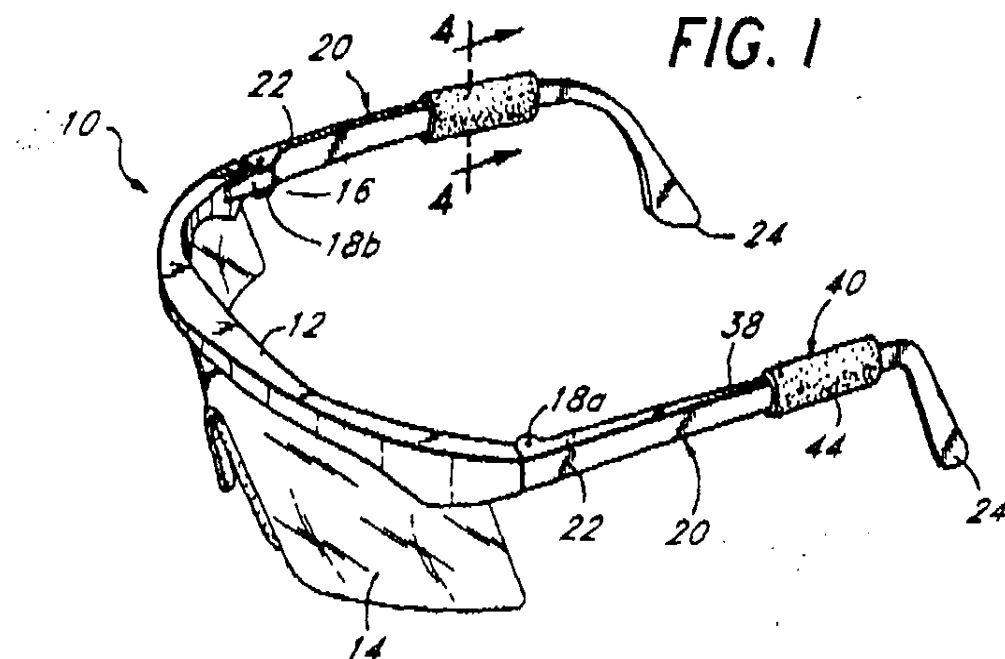
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[57]

ABSTRACT

In eyewear employing temples, a substantially cylindrical elastomeric traction member is disposed in a recessed seat which extends along a length of each temple to provide a contact area between the temple and the head. The traction member and seat may be sized so that the traction member is substantially flush with the adjacent temple or alternatively, the traction member may extend beyond the periphery of the temple. In either configuration, the traction device extends substantially parallel to the length of the temple.

9 Claims, 1 Drawing Sheet



EYEWEAR TRACTION DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to eyewear and, more particularly, to a selectively attachable traction device for improving the retention of the eyewear about the head and a method for using the same.

While corrective lenses are specifically crafted to accommodate the unique vision defects of an individual, the frames used to retain the lenses are typically a standard size and not crafted to conform to the particular contours of an individual's head. Lenses which are employed in filtering eyewear such as sunglasses are also typically retained in stock frames. However, it is virtually impossible to mass produce stock frames which fit every individual's head; therefore, stock frames are constructed to conform to an idealized "standard" adult head.

As a result, such frames often result in a fit which is either too tight or too loose about the head of an individual. A tight fitting frame may cause localized pain and headaches, while a loose fitting frame may allow the eyewear to fall from the head and damage the frame or the lens. This is particularly disadvantageous for protective eyewear such as sunglasses which are to be used in active sports, such as bicycle racing or skiing. Additionally, in the event that corrective lenses vary in weight between the lenses, the uneven weight distribution may cause frames to locally abrade the skin.

A variety of means have been employed to improve the securing of eyewear to the head. These devices have included the use of loose strings which connect the temples of the eyewear around the back of the wearer's head, thereby preventing the glasses from becoming completely displaced from the body. Alternatively, an elastic strap connecting the temples has been employed to engage the wearer's head and secure the eyewear in the desired position.

Perhaps most frequently used, temples have been

with a hook at the posterior end for engaging the wearer behind the ears. However, due to the significant variation among individuals in the distance from the appropriate position of an eyeglass lens and the back of the ear, the traditional ear hook is frequently either too far back or too far forward of the appropriate position on the wearer's ear. This causes either a painful or irritating friction if the hook is too far forward, or a loose fit if too far back.

The prior attempts to improve the retention of eyewear about the wearer's head have also included the use of rubber or rubber-like plastic boots applied to the free ends of the temples for increasing the friction between the eyeglasses and the head, such as shown in U.S. Pat. No. 3,684,356 to Bates. The Bates device, however, appears somewhat clumsy and awkward and, therefore, detracts from the appearance of the eyewear. In addition, the Bates device is limited in that it may not be adjusted relative to the eyewear; that is, the closed end of the boot prevents forward adjustment to a more anterior point of contact between the temples and the head, while an unsupported length of boot extending beyond the earpiece is undesirable.

Another prior attempt to improve eyewear retention is disclosed in the Nelson patent (U.S. Pat. No. 2,561,402), which discloses use of relatively complicated fluid chambers at the interface of the free end of the temples and the head. Nelson uses the fluid cham-

bers in an effort to evenly distribute pressure between the temple and the head. As the fluid chambers of Nelson are permanently affixed to the temple in a predetermined orientation, modification for specific individuals is unavailable. In addition, the fluid retained within the chambers adds an undesired weight to the eyewear. Further, even if the fluid chambers were removable, such removal would substantially alter the fit of the eyewear, rendering the eyewear substantially unwearable.

Notwithstanding the foregoing, there remains a need for providing a means of improving the compatibility of eyewear and the wearer so as to improve retention of the eyewear. Preferably, the eyewear retention means will enable one size to comfortably and securely fit a much larger population than can one size eyewear having the traditional ear hook.

A need also exists for a device which improves retention of eyewear without permanently altering the configuration of the eyewear. A further need exists for a retaining device which may be easily disengaged or recombined with the eyewear without drastically changing the functioning or the appearance of the eyewear. In addition to the functional requirements of the traction device, an aesthetic requirement exists so that the device may be employed as a portion of eye wear in either an unobtrusive or distinctive, but attractive, mode.

SUMMARY OF THE INVENTION

There is provided in accordance with one aspect of the present invention an improved eyewear temple of the type for retaining a pair of eyeglasses on the head of the wearer, by extending from the eyeglass frame in a posterior, i.e., distal, direction over the top of the ears of the wearer. The improved eyeglass temple of the present invention permits the elimination of the traditional hook on the posterior end of traditional temples, and allows a single size set of eyewear temples to comfortably and securely fit on a broader cross section of anatomical variations.

The eyeglass temple comprises an elongate eyeglass temple body, having a first proximal end for attaching the temple to the frame of the eyeglasses, and a second end, distal from the first end, for engaging the head of the wearer. Optionally, the first end of the temple is adapted for securing directly to the lens, such as in a single lens eyeglass system. Preferably, the first end on the temple is provided with a means for releasably pivotably engaging the eyeglass lens or eyeglass frame.

A recessed seat is disposed on the elongate temple body, in between the first and second ends, the recessed seat having a smaller cross-sectional area than the cross-sectional area of the temple body adjacent to the seat. Preferably, the recessed seat comprises an annular recess having first and second shoulders at the first and second axial ends thereof. Preferably, the axial length of the annular recess is less than about one-half of the axial length of the temple, and most preferably, less than about one-third the axial length of the temple.

The eyeglass temple is preferably additionally provided with at least one tubular traction member disposed within the recessed seat. The traction member preferably comprises an elastomeric material which enables radial expansion to fit over the distal end of the temple body, and relaxation back to provide a snug fit within the recess on the temple. The traction member is

preferably made from an elastomeric material which exhibits improved retention properties when the material is wet, and, most preferably, the exterior surface of the traction member is provided with friction enhancing structures, such as annular ridges or other patterned textures.

There is provided in accordance with another aspect of the present invention, an improved eyeglass having at least one lens, and a frame for supporting the lens in front of the eyes of the wearer. The eyeglass is further provided with a first and a second temple produced in accordance with the present invention. Preferably, the distal end of the temple is substantially straight, so that the temple does not wrap around behind the ear of the wearer.

Further features and advantages of the present invention will become apparent from the detailed description of preferred embodiments which follow, when taken together with the appended figures and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of eyewear in accordance with one embodiment of the present invention.

FIG. 2 is a side elevational view of a second embodiment of eyewear in accordance with the present invention, with the traction member removed.

FIG. 3 is a perspective view of a traction member in accordance with the present invention.

FIG. 4 is a cross-sectional view taken along line 4—4 of FIG. 1.

FIG. 5 is a perspective view showing an alternative embodiment of the traction member.

FIG. 6 is a cross-sectional view taken along line 6—6 of FIG. 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As used in the present application, "eyewear" is a general term intended to embrace optical devices containing corrective lenses for defects in vision or lenses for such special purposes as filters for absorbing or blocking portions of the electromagnetic spectrum, providing physical shields for the eyes or making available other physical or optical functions for protective or visual assisting purposes.

As shown in FIG. 1, eyewear 10 adapted to position a lens in a predetermined orientation relative to the eyes includes a frame 12, lens 14 and temples 20. Preferably, the lens 14 is joined to the frame 12 so as to position the lens 14 before the eyes. As shown in FIGS. 1, 2 and 6, the temples 20 may be pivotally affixed or joined to the frame 12. Although the temples 20 are shown in FIG. 1 as pivotally affixed to the frame 12, the temples 20 may be permanently attached in a predetermined orientation or selectively engageable with the frame 12 without circumventing the scope of the present invention. Alternatively, the frame 12 may be eliminated entirely by securing the temples 20 with or without temple hinges directly to the lens 14 by thermoplastic bonding, adhesives screws or other known fastening means which are suitable for the material of the lens and temples.

As is well known in the art, the frame 12 and temples 20 may be conveniently made of molded plastic or a variety of other materials. The lens 14 may take any of a number of configurations and may be formed of sheet plastic, molded plastic or glass as determined by the application of the lens.

Each temple 20 is defined by a proximal end 22 and a distal end 24 wherein the proximal end 22 is affixed either permanently or detachably to the frame 12. The permanent attachment of the temples to the frame 12 may be accomplished through molding or thermoplastic bonding. The detachable engagement of the temples 20 and the frame 12 is provided by the use of a snap fit or fasteners including screws or pins, as are known in the art.

Although the earstems shown in FIG. 1 are affixed to the frame 12, the earstem 20 may be attached directly to the lens 14. Preferably, the earstems 20 are hingeably attached to the frame 12 or lens 14 and most preferably, hingeably and removably attached, as well known in the art.

As shown in FIG. 1, in a typical hingeable connection, the frame 12 or lens 14 includes a hinge aperture (not illustrated) extending through a protruding flange 16. The earstem 20 includes a pair of parallel apertured flanges 18a, 18b spaced so as to receive the flange 16 of the frame 12 or lens 14 therebetween. The apertures in the earstem 20 are aligned with the apertures of the frame 12 or lens 14 and a pin is inserted so as to permit rotation of the frame 12 or lens 14 relative to the earstem 20, thereby providing a hingeable connection. In a typically readily detachable hinge, the aperture in the flange 16 of the frame 12 or lens 14 is replaced by an integral pin (not illustrated) which extends away from the flange 16 in opposite directions along the same axis as the aperture. The pinned flange 16 is inserted by deformation between the opposing flanges 18a, 18b and the integral pin snaps into the aperture on the flanges 18a, 18b, thereby providing a readily detachable hinge.

As shown in FIGS. 1 and 5, the distal end 24 may be curved so as to provide loops which are disposed behind the ears when the eyewear is worn. However, as the looped temples shown in FIGS. 1 and 5 may impinge upon the head in undesired locations when employed on heads of different sizes, the looped temples are not well suited to accommodate a wide variety of head sizes. Thus, the preferred embodiment shown in FIG. 2 includes a straight temple which, when used in conjunction with the present invention, provides more universally fitting eyewear and eliminates the traditional ear hook which can cause discomfort or distraction for many wearers.

As shown in FIG. 2, a recessed seat 30 is disposed intermediate of the proximal and distal ends 22, 24. As shown in FIG. 2, the seat 30 is preferably located adjacent the distal end 24 of the temple 20, so that the posterior shoulder 34 is substantially coincident with the distal end 24. However, as will be apparent, if it is desired to extend the temples in a posterior direction well beyond the ears, the distance between posterior shoulder 34 and distal end 24 can be proportionately increased to maintain seat 30 near the ear.

The recessed seat 30 is defined by posterior shoulder 34 and preferably an anterior shoulder 32, such that the anterior shoulder 32 is disposed between the posterior shoulder 34 and the proximal end 22. Preferably, the cross-sectional dimension of the seat 30 between the anterior and posterior shoulders 32, 34 is smaller than the cross-sectional dimension of the adjacent temple 20.

Preferably, the posterior shoulder 34 is a sufficient distance from the anterior shoulder 32 so that at least one traction member 40 may be retained therebetween. However, the seat 30 may be configured so as to extend substantially the entire length of the temple or alternately

tively, may extend only a portion of the overall length of the temple. Typically, the seat extends less than about one-half or one-third the length of the temple and is disposed on the posterior portion of the temple.

Although the seat is shown as defined by an anterior shoulder 32 and a posterior shoulder 34, the present invention may be practiced with a seat 30 defined only by a posterior shoulder 34 for preventing unintended axial displacement of the traction member in the posterior direction.

When the seat 30 is defined by only the posterior shoulder 34, the cross-sectional area of the seat may taper from being substantially coincident with an anterior cross-sectional area of the temple to the reduced cross-sectional area at the posterior shoulder 34. The posterior shoulder thereby prevents unintentional axial displacement of the traction member in the posterior direction. Axial displacement of the traction member in the anterior direction is inhibited by the expanding cross-sectional area of the seat in a tapered embodiment, as the seat extends in the anterior direction, or simply by a friction fit in the absence of a taper or an anterior shoulder.

Preferably, the seat 30 is located so that upon operable engagement of the traction member 40 within the seat 30, the traction member 40 provides an interface between the eyewear and the head. That is, the traction member 40 contacts the head.

Referring to FIG. 3, an elongate tubular traction member 40 is shown. In the preferred embodiment, the traction member 40 is formed substantially in the shape of a hollow cylinder having an inner surface 42 of radius R1 and outer surface 44 of radius R2, wherein radius R1 is less than radius R2. Preferably, radius R1 is expandable to permit passage of the distal end 24 of the temple 20 through the interior of the traction member 40 without exceeding the elastic limits of deformation of the traction member 40.

As shown in FIG. 4, the traction member 40 is preferably comprised of a material having sufficient elasticity that the inner surface 42 of the traction member 40 snugly contacts the surface of a seat 30 having an oblong or rectangular cross-section with a cross-sectional area greater than that of R1 in the unexpanded state. Referring to FIG. 6, the inner surface 42 will also preferably conform snugly to the surface of a seat 30 having a substantially circular cross-section.

Other embodiments of the traction member 40 may be employed, such as one having an open rectangular or triangular cross-sectional configuration having a bias so that the open legs of the triangle or rectangle are biased towards one another to tend to form a tubular element. Thus, traction devices can take the form of an elongate body which is split axially along one wall so that it does not form a complete tube. The bias should be sufficient so that the opposing inner surfaces 42 of the traction member 40 cooperatively engage the periphery of the recessed seat 30.

The traction member 40 may be formed by molding or extruding processes, as well known in the art. Preferably, the outer surface 42 is configured to enhance the coefficient of static friction between the eyewear and the head. The outer surface 44 may be formed to exhibit a variety of static friction coefficient enhancing configurations, such as a grid, waffle, or ribbed pattern (not shown). Typically, the outer surface 42 produced by extrusion will exhibit axially oriented patterns, while

molded outer surfaces may exhibit axially and/or radially oriented patterns.

As discussed *infra*, the traction member 40 is preferably formed of an elastomeric material exhibiting sufficient flexibility or elasticity to allow the traction member 40 to expand while being slipped over the temple distal end 24 and to contract back within seat 30 after passing over the distal end.

In a particularly preferred embodiment, the traction member 40 is formed of a relatively soft elastomeric material having a coefficient of sliding friction that increases when the material is wetted. Such a material, sometimes referred to as hydrophilic, tends to enhance retention of the traction member 40 in position on the wearer's head as the wearer perspires or encounters moisture, as during skiing. One suitable material which can be readily molded by conventional techniques is marketed under the name KROTON G TM, a product of the Shell Oil Company.

The traction member 40 may comprise a resilient sponge-like elastomeric material, having a relatively high porosity, as shown in FIGS. 3 and 4. Alternatively, as shown in FIG. 6, the traction member 40 may comprise a substantially solid, i.e., fine or no porosity, yet flexible material. In addition, the traction member 40 may be made of materials having different densities, thereby providing traction members 40 having different weights, which may be employed to counterbalance lenses of differing weights, so as to distribute the weight of the eyewear 10 more evenly about the head.

The length of the traction member 40 is preferably no greater than and most preferably substantially equal to the distance between the anterior and posterior shoulders 32, 34. Although the traction member 40 is illustrated as extending roughly one-third or one-half the overall length of the temple, the traction members 40 within the present invention can extend anywhere from substantially the entire length of the temple 20 to only a relatively small portion thereof, as depending upon the configuration of the seat 30. Alternatively, a plurality of traction members 40 may be axially aligned within the seat 30. The traction members 40 may be selected so that a combined length of the members 40 substantially equals the distance between the anterior and the posterior shoulders 32, 34 or alternatively, the combined axial length of the members 40 may be such that an axial space separates adjacent traction members 40 within the seat.

In assembling the present invention, the traction member 40 is engaged with a temple 20 by passing the distal end 24 of the temple 20 through the tubular passageway within traction member 40. Alternatively, the temple 20 may be detached from the frame 12 or lens 14 and the proximal end 22 may be passed through the tubular passageway of the traction member 40. Therefore, the preferred construction of the traction member 40 which elastically passes over the distal end may be obviated. The traction member 40 is then moved along the temple 20 until the inner surface 42 engages the seat 30. In an embodiment in which the seat 30 has a length substantially equal to the length of the traction member 40, as the traction member 40 is received within the seat 30, further unintended motion along the temple 20 is prevented by engagement of the anterior and posterior shoulders 32, 34 with the traction member 40.

Alternatively, the seat 30 may have a sufficient axial length so as to retain a plurality of traction members 40 between the anterior and posterior shoulders 32, 34.

5,054,903

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The use of multiple traction members 40 allows for accommodating fashion considerations as well as high retaining forces for active uses, such as volleyball or basketball. Upon engagement of the traction member 40 within the seat 30, the outer surface 44 of the traction member 40 may be disposed outside of the periphery of the temple 20, as shown in FIG. 1 or, alternatively, may be substantially flush with the periphery 38 of the adjacent temple 20, as shown in FIG. 5. Traction members are preferably provided having a variety of wall thicknesses, i.e., the difference between R1 and R2. Thus, the wearer can select a flush fitting traction member as illustrated in FIG. 5 or a radially enlarged traction member as illustrated in FIG. 1, depending upon that wearer's perception of the need for enhanced traction or sleek appearance.

As the majority of the length of the temple 20 in the preferred embodiment is dominated by the periphery of the temple 20 rather than the seat 30, if the traction members 40 are removed from the temples 20, the fitting of the eyewear 10 will not be substantially denigrated. However, the length of the traction member 40, when engaged in the seat 30, provides a sufficient contact area to increase the resistance to movement of the eyewear 10 relative to the head.

This present invention has been described in detail in connection with the preferred embodiments, but these are examples only and the present invention is not restricted thereto. It will be easily understood by those skilled in the art that other variations and modifications can be easily made within the scope of this invention, which is defined by the following claims.

It is claimed:

1. An improved eyewear temple for retaining eyeglasses on the head of the wearer and reducing abrasion caused by movement of said eyewear, comprising:
an elongate eyewear temple body;

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a first end on the temple for attaching the temple to the frame of the eyeglasses;

a second end on the temple, distal said first end, for engaging the head of the wearer;

a recessed seat interposed between said first and second ends having a smaller cross-sectional area than that of said temple portion adjacent said seat, said seat being separated from the remainder of said temple by first and second shoulders; and

at least one tubular traction member disposed within the recessed seat.

2. An eyewear temple as in claim 1, wherein the traction member is removably disposed within the seat.

3. An eyewear temple as in claim 1, wherein the tubular traction member comprises a resilient elastomeric material.

4. An improved eyewear temple as in claim 3, wherein said elastomeric material exhibits a coefficient of sliding friction that increases when the material is wetted.

5. An eyewear temple as in claim 1, wherein the traction member extends radially outwardly beyond the surface of the adjacent portion of the temple.

6. An eyewear temple as in claim 1, wherein the axial length of the seat is less than about one-half of the axial length of the temple.

7. An eyewear temple as in claim 6, wherein the recessed seat extends no more than about one-third the length of the temple.

8. An eyewear temple as in claim 1, wherein a single tubular traction member disposed within the recessed seat extends substantially the entire distance between said first and second shoulders.

9. An eyewear temple as in claim 1, wherein the thickness of the traction member is such that the outer surface of the traction member is substantially flush with the periphery of the adjacent temple.

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USOOD3284685

United States Patent [19] Jannard

[11] Patent Number: Des. 328,468
[45] Date of Patent: Aug. 4, 1992

[54] UNITARY EYEGLASS LENS

[75] Inventor: James H. Jannard, San Juan Capistrano, Calif.

[73] Assignee: Oakley, Inc., Irvine, Calif.

[**] Term: 14 Years

[21] Appl. No.: 545,964

[22] Filed: Jan. 28, 1990

[52] U.S. Cl. D16/101

[58] Field of Search D16/102, 111, 112, 116,
D16/117, 127, 101; 351/41, 44, 49, 111, 112,
114

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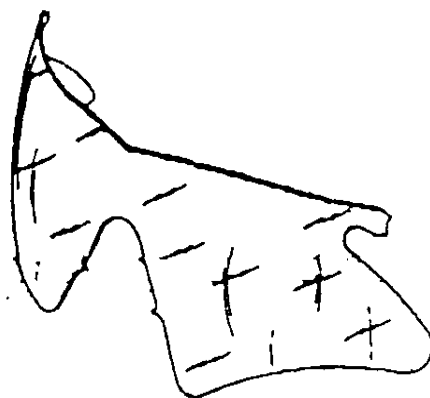
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Primary Examiner—Bernard Ansher
Assistant Examiner—R. Barkai
Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear



Des. 328,468

Page 2

[57]

CLAIM

DESCRIPTION

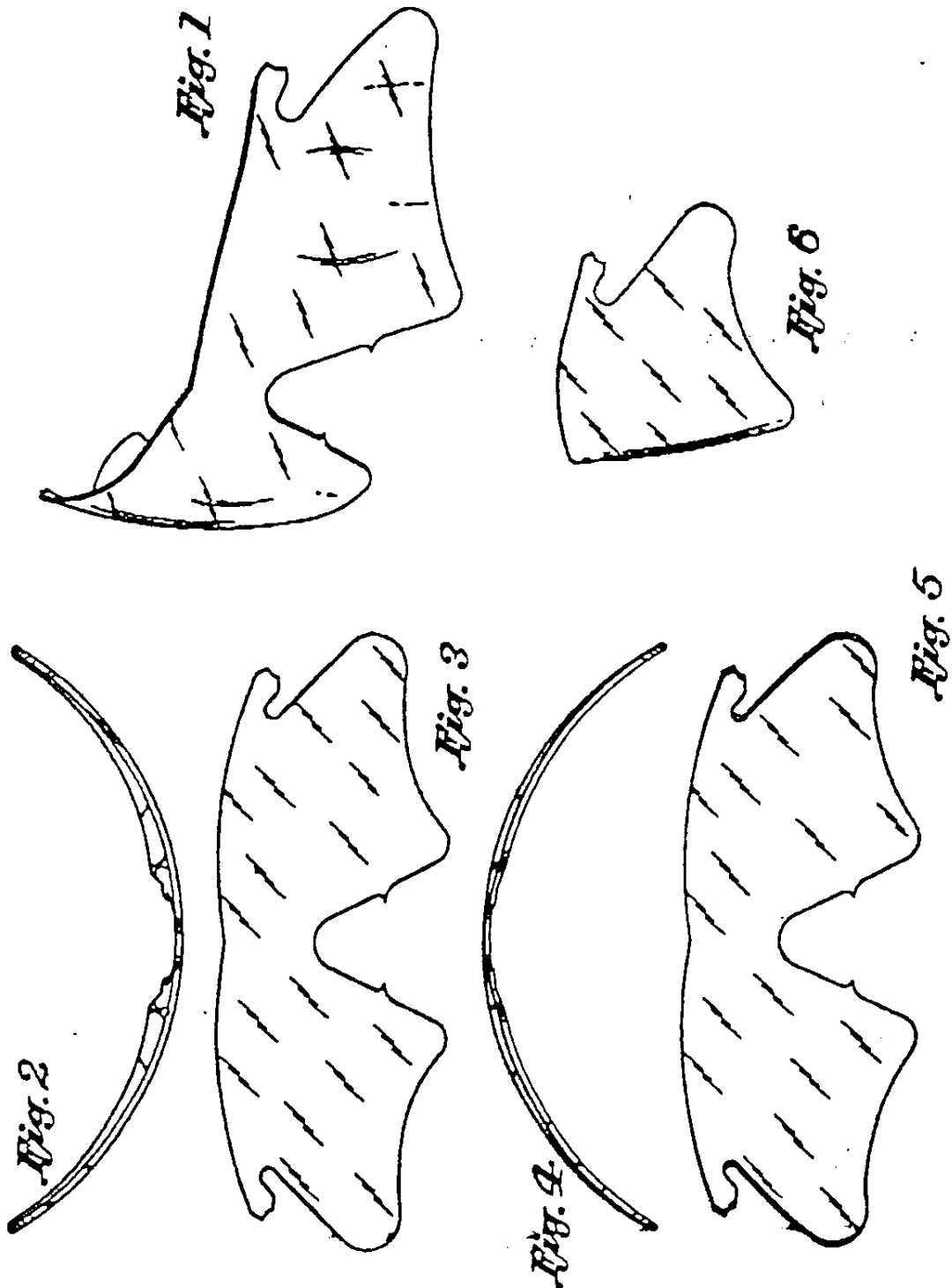
The ornamental design for a unitary eyeglass lens, as shown and described.

FIG. 1 is a frontal perspective view of unitary eyeglass lens showing my new design;
FIG. 2 is a top plan view thereof;
FIG. 3 is a frontal elevational view thereof;
FIG. 4 is a bottom plan view thereof;
FIG. 5 is a rear elevational view thereof; and,
FIG. 6 is a right side elevational view thereof, the left side elevational view being a mirror image.

U.S. Patent

Aug. 4, 1992

Des. 328,468



United States Patent [19]

[11] Patent Number: Des. 330,903

Jannard

[45] Date of Patent: ** Nov. 10, 1992

[54] EYEGLASSES

[75] Inventor: James H. Jannard, San Juan
Capistrano, Calif.

[73] Assignee: Oakley, Inc., Calif.

[*] Notice: The portion of the term of this patent
subsequent to Sep. 15, 2006 has been
disclaimed.

[**] Term: 14 Years

[21] Appl. No.: 583,721

[22] Filed: Sep. 17, 1990

[52] U.S. Cl. D16/116

[58] Field of Search D16/102, 111, 112, 116,
D16/117, 127; 351/41, 44, 49, 111, 112, 114

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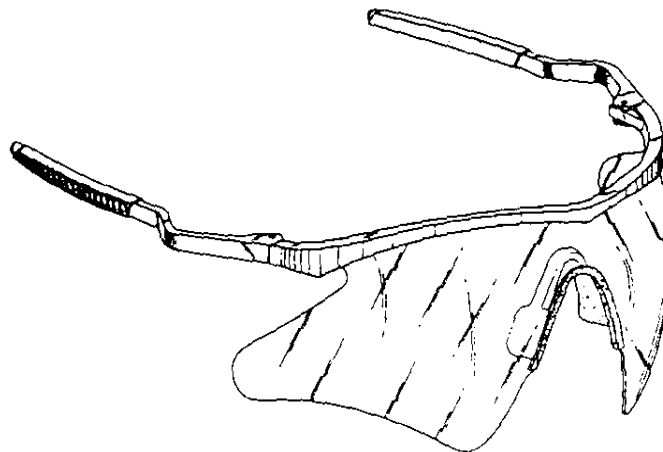
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Primary Examiner—Bernard Ansher
Assistant Examiner—R. Barkai
Attorney, Agent, or Firm—Knobbe, Martens, Olson &
Bear



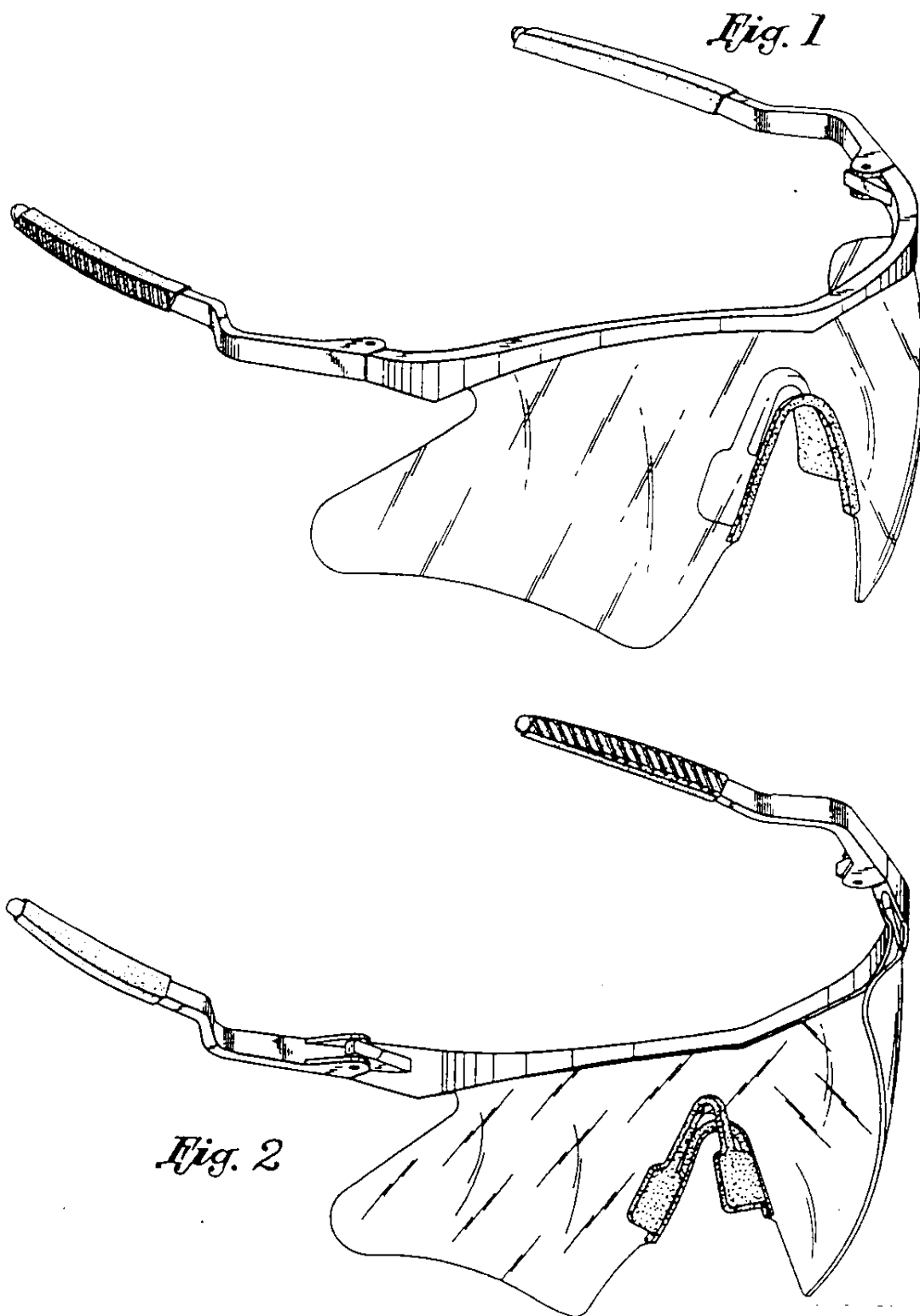


Fig. 5

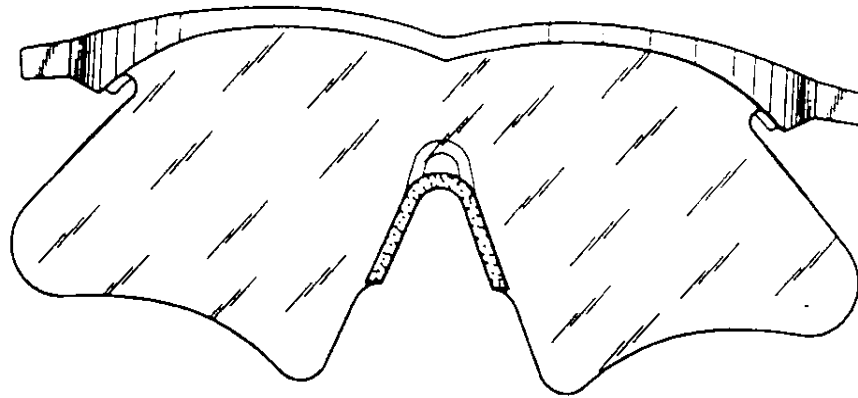


Fig. 6

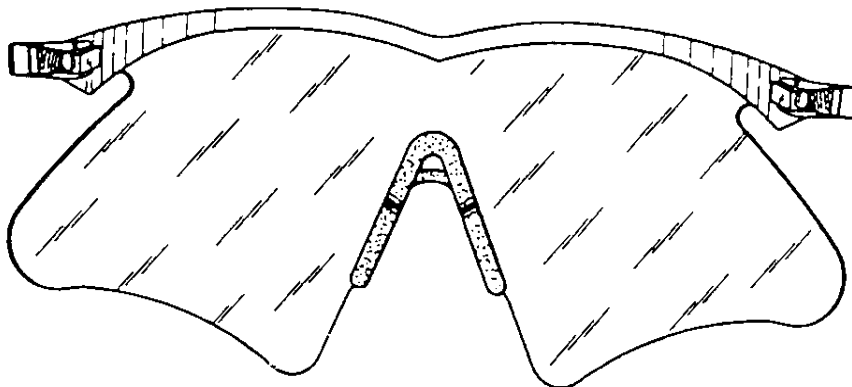
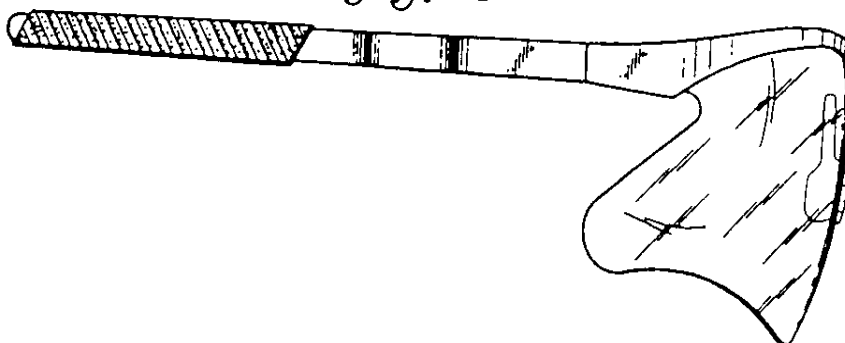


Fig. 7



United States Patent [19]
Jannard

[11] **Patent Number:** Des. 374,884
[45] **Date of Patent:** **Oct. 22, 1996

[54] **EAR STEMS**

[75] **Inventor:** James H. Jannard, San Juan
Capistrano, Calif.

[73] **Assignee:** Oakley, Inc., Irvine, Calif.

[**] **Term:** 14 Years

[21] **Appl. No.:** 39,137

[22] **Filed:** May 22, 1995

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Related U.S. Application Data

[60] Division of Ser. No. 530,204, May 30, 1990, Pat. No. Des. 358,600, and a continuation-in-part of Ser. No. 436,471, Nov. 20, 1989, abandoned.

[52] **U.S. Cl.** D16/335

[58] **Field of Search** D16/306, 310,
D16/311, 313-316, 319-330, 333, 335,
337, 339, 340; 351/41, 44-47, 51, 111,
113, 114, 116, 118, 119, 120, 122, 123,
157, 158; 2/247-249, 253, 236

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Primary Examiner—Terry A. Wallace

Assistant Examiner—R. Barkai

Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear

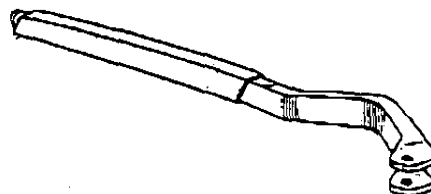
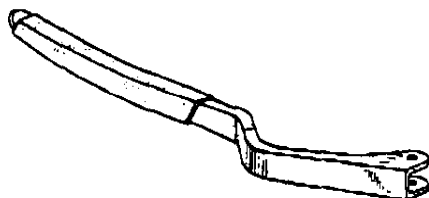
[57] **CLAIM**

The ornamental design for ear stems, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of ear stems embodying the design of the present invention;
FIG. 2 is a rear perspective view of the ear stems of FIG. 1;
FIG. 3 is a front elevation view of the ear stems of FIG. 1;
FIG. 4 is a top plan view of the ear stems of FIG. 1;
FIG. 5 is a rear elevation view of the ear stems of FIG. 1;
FIG. 6 is a bottom plan view of the ear stems of FIG. 1;
FIG. 7 is a left elevation view of the ear stems of FIG. 1; and,
FIG. 8 is a right elevation view of the ear stems of FIG. 1.

1 Claim, 5 Drawing Sheets



Des. 374,884

Page 2

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U.S. Patent

Oct. 22, 1996

Sheet 1 of 5

Des. 374,884

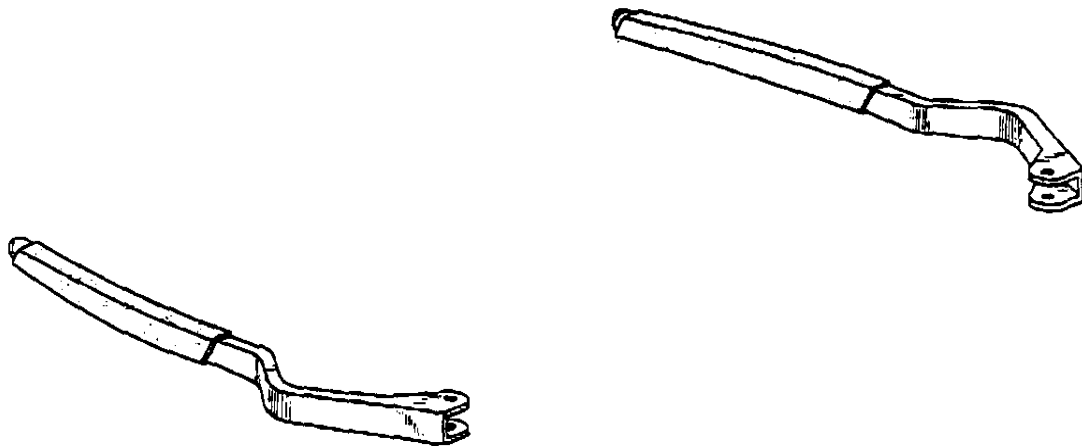


Fig. 1

U.S. Patent

Oct. 22, 1996

Sheet 2 of 5

Des. 374,884

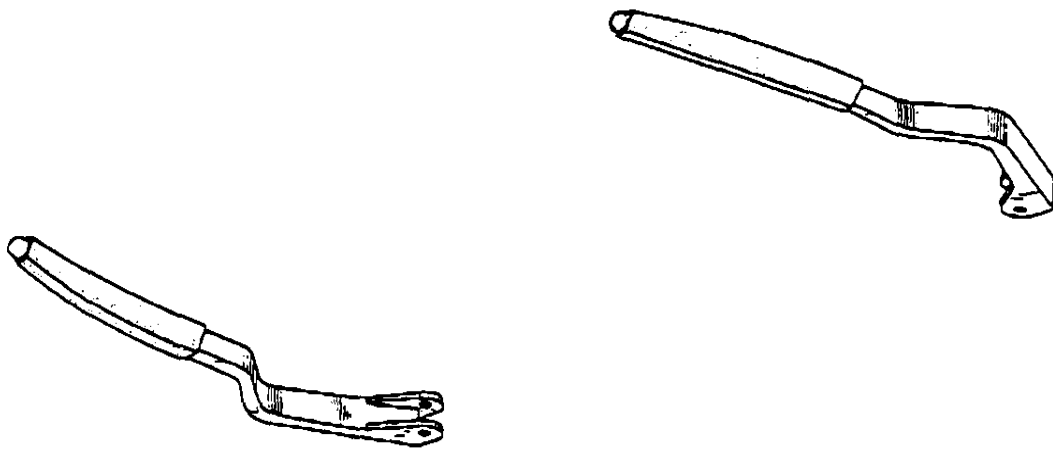


Fig. 2

Des. 374,884

U.S. Patent

Oct. 22, 1996

Sheet 3 of 5

Fig. 3

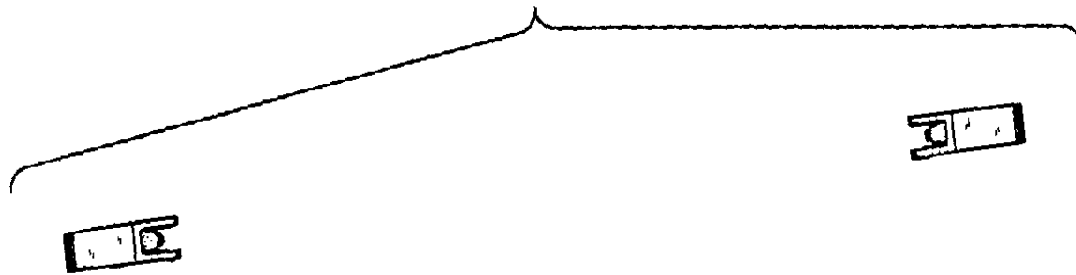
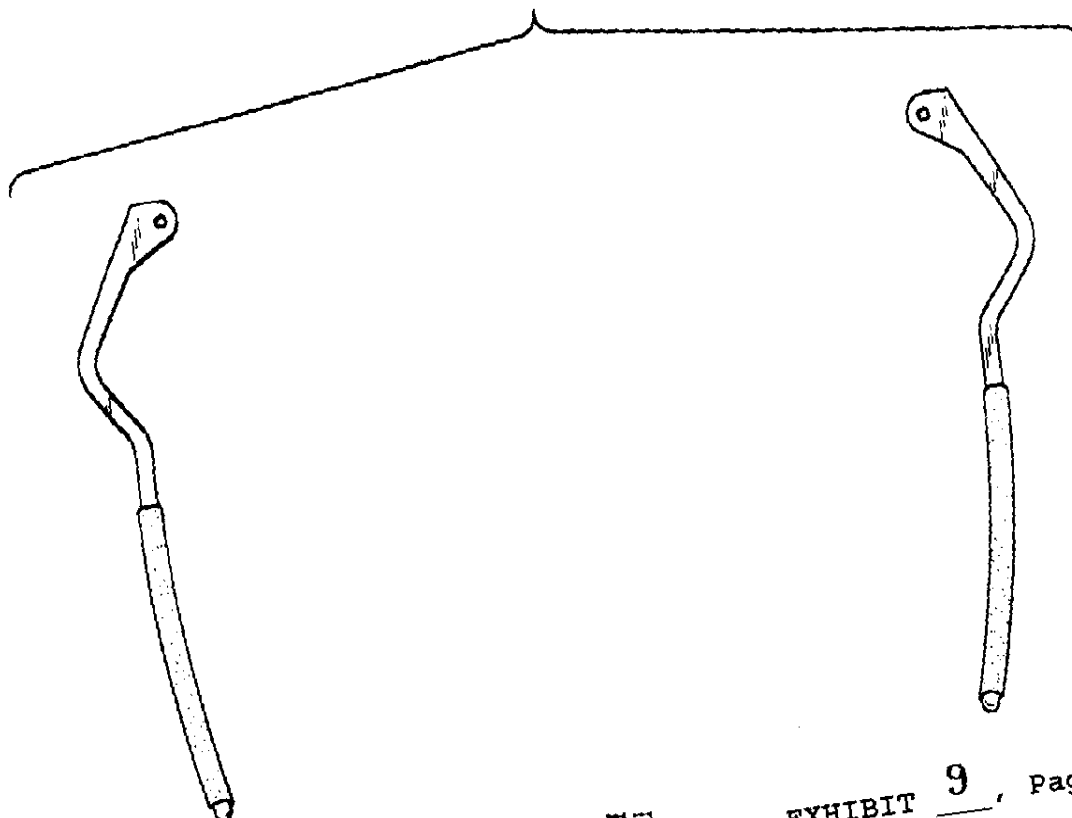


Fig. 4



U.S. Patent

Oct. 22, 1996

Sheet 4 of 5

Des. 374,884

Fig. 5

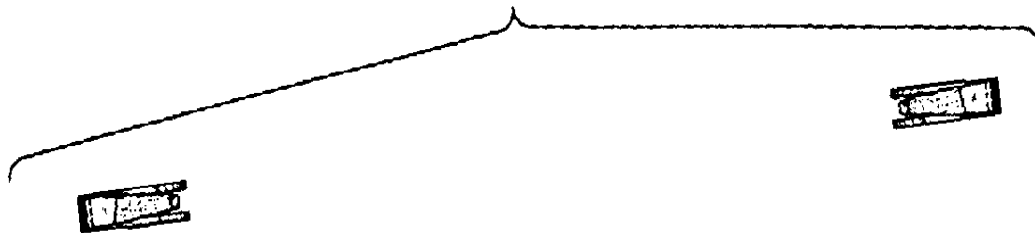
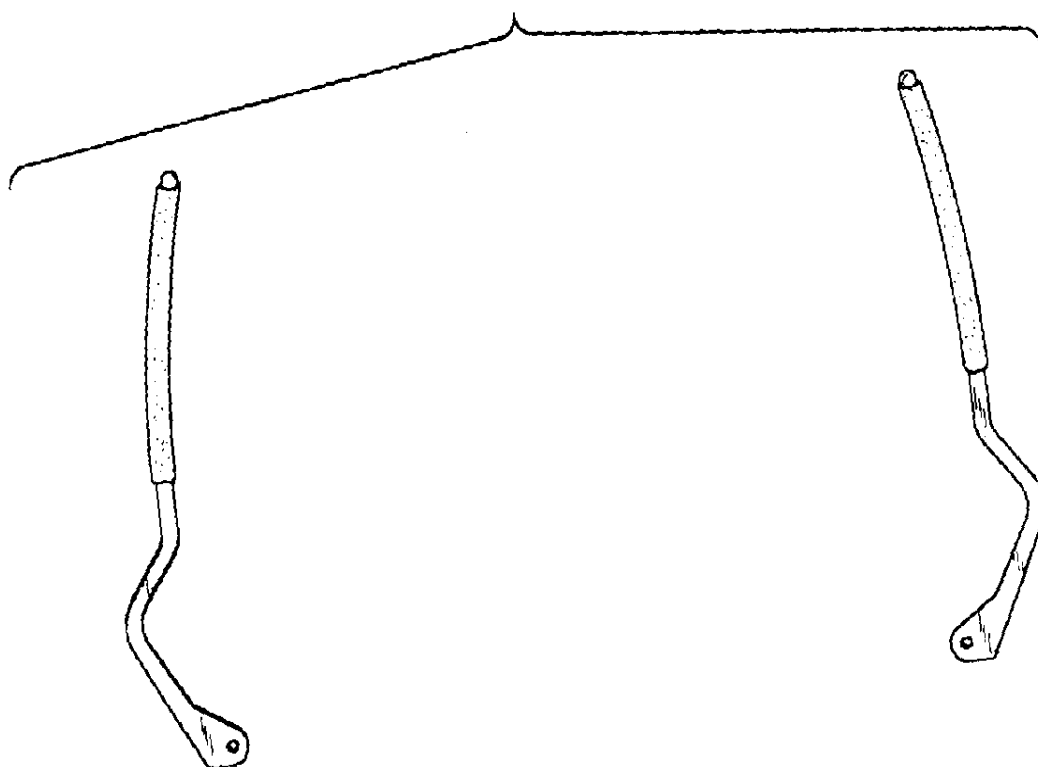


Fig. 6



U.S. Patent

Oct. 22, 1996

Sheet 5 of 5

Des. 374,884



Fig. 7



Fig. 8



US005137342A

United States Patent [19]

[11] Patent Number: 5,137,342

Jannard et al.

[45] Date of Patent: * Aug. 11, 1992

[54] EYEWEAR TRACTION DEVICE

[75] Inventors: James H. Jannard, San Juan Capistrano; Gregory F. Arnette, South Laguna Beach, both of Calif.

[73] Assignee: Oakley, Inc., Irvine, Calif.

[*] Notice: The portion of the term of this patent subsequent to Oct. 8, 2008 has been disclaimed.

[21] Appl. No.: 695,683

[22] Filed: May 3, 1991

Related U.S. Application Data

[63] Continuation of Ser. No. 436,474, Nov. 20, 1989, Pat. No. 5,054,903.

[51] Int. Cl.: G02S 5/14

[52] U.S. Cl.: 351/123; 351/122; 351/111

[58] Field of Search: 351/122, 123, 111, 119, 351/121

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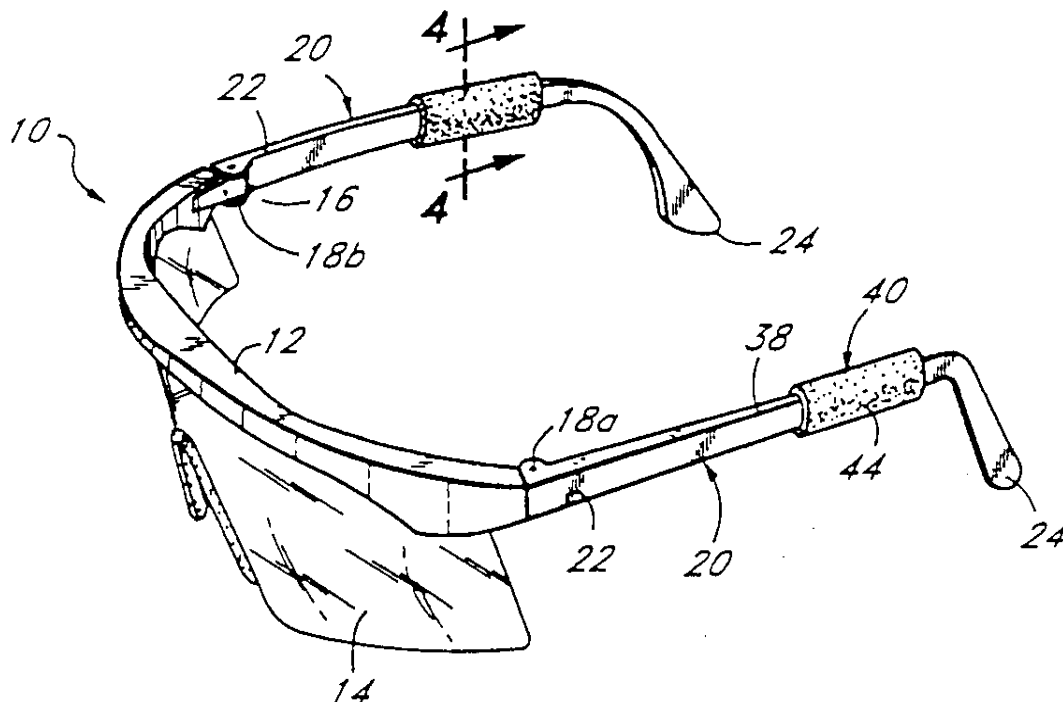
Primary Examiner—Paul M. Dzierzynski

Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear

[57] ABSTRACT

In eyewear employing temples, a substantially cylindrical elastomeric traction member is disposed in a recessed seat which extends along a length of each temple to provide a contact area between the temple and the head. The traction member and seat may be sized so that the traction member is substantially flush with the adjacent temple or alternatively, the traction member may extend beyond the periphery of the temple. In either configuration, the traction device extends substantially parallel to the length of the temple.

32 Claims, 1 Drawing Sheet



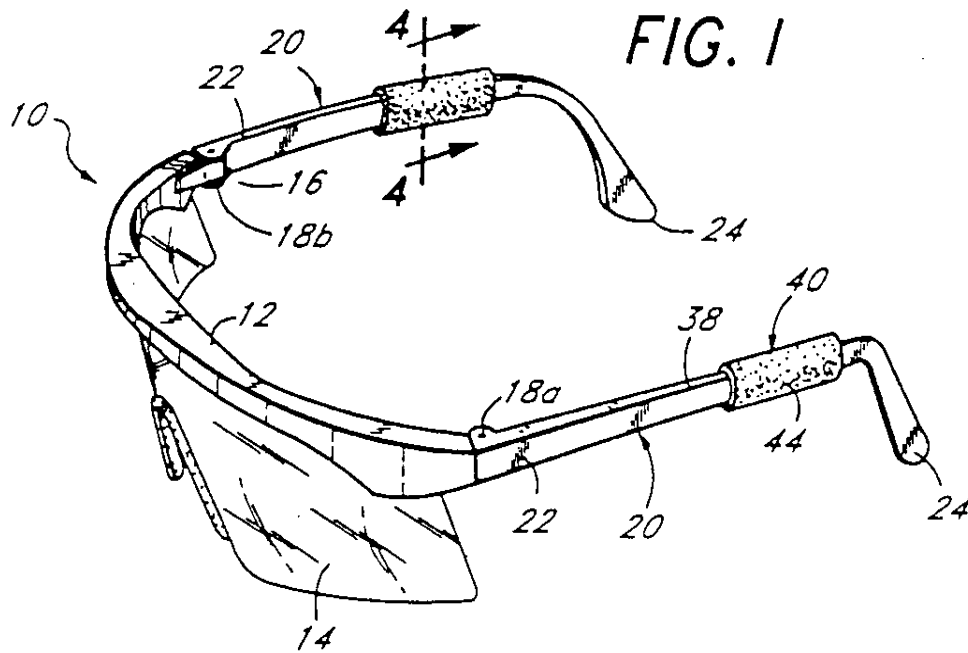


FIG. 1

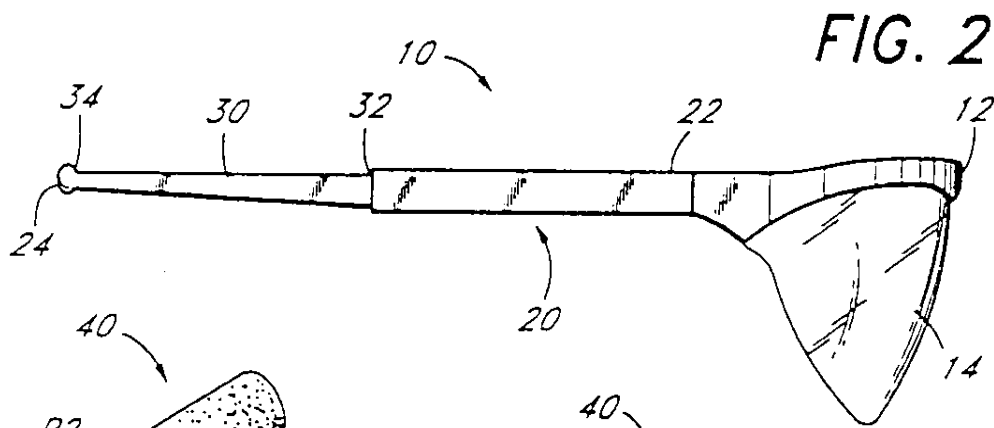


FIG. 2

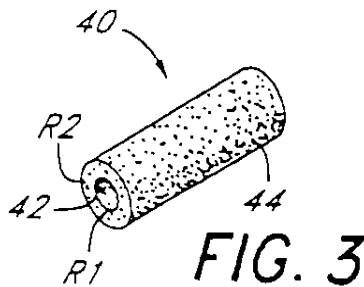


FIG. 3

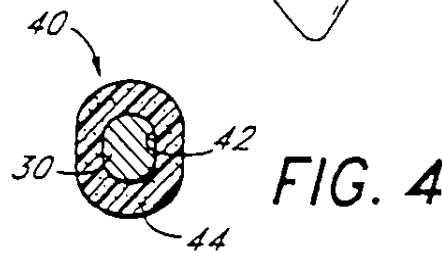


FIG. 4

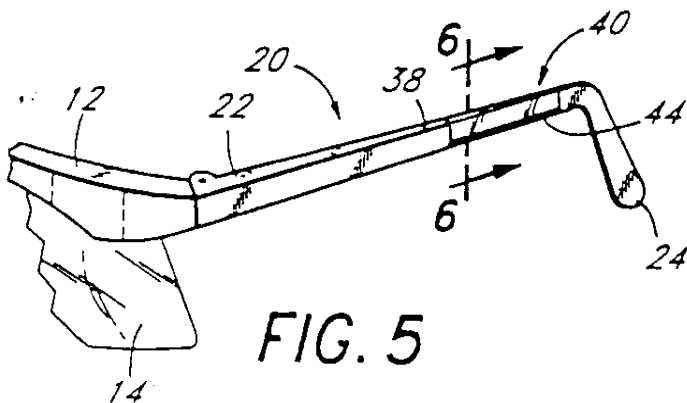


FIG. 5

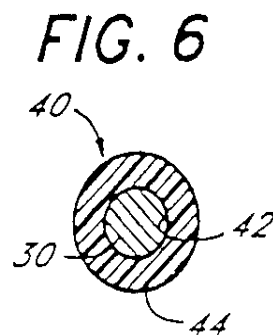


FIG. 6

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5,137,342

2

EYEWEAR TRACTION DEVICE

This application is a continuation of application Ser. No. 436,474 filed Nov. 20, 1989, now U.S. Pat. No. 5,054,90.

BACKGROUND OF THE INVENTION

The present invention relates to eyewear and, more particularly, to a selectively attachable traction device for improving the retention of the eyewear about the head and a method for using the same.

While corrective lenses are specifically crafted to accommodate the unique vision defects of an individual, the frames used to retain the lenses are typically a standard size and not crafted to conform to the particular contours of an individual's head. Lenses which are employed in filtering eyewear such as sunglasses are also typically retained in stock frames. However, it is virtually impossible to mass produce stock frames which fit every individual's head; therefore, stock frames are constructed to conform to an idealized "standard" adult head.

As a result, such frames often result in a fit which is either too tight or too loose about the head of an individual. A tight fitting frame may cause localized pain and headaches, while a loose fitting frame may allow the eyewear to fall from the head and damage the frame or the lens. This is particularly disadvantageous for protective eyewear such as sunglasses which are to be used in active sports, such as bicycle racing or skiing. Additionally, in the event that corrective lenses vary in weight between the lenses, the uneven weight distribution may cause frames to locally abrade the skin.

A variety of means have been employed to improve the securing of eyewear to the head. These devices have included the use of loose strings which connect the temples of the eyewear around the back of the wearer's head, thereby preventing the glasses from becoming completely displaced from the body. Alternatively, an elastic strap connecting the temples has been employed to engage the wearer's head and secure the eyewear in the desired position.

Perhaps most frequently used, temples have been provided with a hook at the posterior end for engaging the wearer behind the ears. However, due to the significant variation among individuals in the distance from the appropriate position of an eyeglass lens and the back of the ear, the traditional ear hook is frequently either too far back or too far forward of the appropriate position on the wearer's ear. This causes either a painful or irritating friction if the hook is too far forward, or a loose fit if too far back.

The prior attempts to improve the retention of eyewear about the wearer's head have also included the use of rubber or rubber-like plastic boots applied to the free ends of the temples for increasing the friction between the eyeglasses and the head, such as shown in Bates U.S. Pat. No. 3,684,356. The Bates device, however, appears somewhat clumsy and awkward and, therefore, detracts from the appearance of the eyewear. In addition, the Bates device is limited in that it may not be adjusted relative to the eyewear; that is, the closed end of the boot prevents forward adjustment to a more anterior point of contact between the temples and the head, while an unsupported length of boot extending beyond the earpiece is undesirable.

Another prior attempt to improve eyewear retention is disclosed in the Nelson patent (U.S. Pat. No. 2,561,402), which discloses use of relatively complicated fluid chambers at the interface of the free end of the temples and the head. Nelson uses the fluid chambers in an effort to evenly distribute pressure between the temple and the head. As the fluid chambers of Nelson are permanently affixed to the temple in a predetermined orientation, modification for specific individuals is unavailable. In addition, the fluid retained within the chambers adds an undesired weight to the eyewear. Further, even if the fluid chambers were removable, such removal would substantially alter the fit of the eyewear, rendering the eyewear substantially unwearable.

Notwithstanding the foregoing, there remains a need for providing a means of improving the compatibility of eyewear and the wearer so as to improve retention of the eyewear. Preferably, the eyewear retention means will enable one size to comfortably and securely fit a much larger population than can one size eyewear having the traditional ear hook.

A need also exists for a device which improves retention of eyewear without permanently altering the configuration of the eyewear. A further need exists for a retaining device which may be easily disengaged or recombined with the eyewear without drastically changing the functioning or the appearance of the eyewear. In addition to the functional requirements of the traction device, an aesthetic requirement exists so that the device may be employed as a portion of eye wear in either an unobtrusive or distinctive, but attractive, mode.

SUMMARY OF THE INVENTION

There is provided in accordance with one aspect of the present invention an improved eyewear temple of the type for retaining a pair of eyeglasses on the head of the wearer, by extending from the eyeglass frame in a posterior, i.e., distal, direction over the top of the ears of the wearer. The improved eyeglass temple of the present invention permits the elimination of the traditional hook on the posterior end of traditional temples, and allows a single size set of eyewear temples to comfortably and securely fit on a broader cross section of anatomical variations.

The eyeglass temple comprises an elongate eyeglass temple body, having a first proximal end for attaching the temple to the frame of the eyeglasses, and a second end, distal from the first end, for engaging the head of the wearer. Optionally, the first end of the temple is adapted for securing directly to the lens, such as in a single lens eyeglass system. Preferably, the first end on the temple is provided with a means for releasably pivotably engaging the eyeglass lens or eyeglass frame.

A recessed seat is disposed on the elongate temple body, in between the first and second ends, the recessed seat having a smaller cross-sectional area than the cross-sectional area of the temple body adjacent to the seat. Preferably, the recessed seat comprises an annular recess having first and second shoulders at the first and second axial ends thereof. Preferably, the axial length of the annular recess is less than about one-half of the axial length of the temple, and most preferably, less than about one-third the axial length of the temple.

The eyeglass temple is preferably additionally provided with at least one tubular traction member disposed within the recessed seat. The traction member

5,137,342

3

4

preferably comprises an elastomeric material which enables radial expansion to fit over the distal end of the temple body, and relaxation back to provide a snug fit within the recess on the temple. The traction member is preferably made from an elastomeric material which exhibits improved retention properties when the material is wet, and, most preferably, the exterior surface of the traction member is provided with friction enhancing structures, such as annular ridges or other patterned textures.

There is provided in accordance with another aspect of the present invention, an improved eyeglass having at least one lens, and a frame for supporting the lens in front of the eyes of the wearer. The eyeglass is further provided with a first and a second temple produced in accordance with the present invention. Preferably, the distal end of the temple is substantially straight, so that the temple does not wrap around behind the ear of the wearer.

Further features and advantages of the present invention will become apparent from the detailed description of preferred embodiments which follow, when taken together with the appended figures and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of eyewear in accordance with one embodiment of the present invention.

FIG. 2 is a side elevational view of a second embodiment of eyewear in accordance with the present invention, with the traction member removed.

FIG. 3 is a perspective view of a traction member in accordance with the present invention.

FIG. 4 is a cross-sectional view taken along line 4—4 of FIG. 1.

FIG. 5 is a perspective view showing an alternative embodiment of the traction member.

FIG. 6 is a cross-sectional view taken along line 6—6 of FIG. 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As used in the present application, "eyewear" is a general term intended to embrace optical devices containing corrective lenses for defects in vision or lenses for such special purposes as filters for absorbing or blocking portions of the electromagnetic spectrum, providing physical shields for the eyes or making available other physical or optical functions for protective or visual assisting purposes.

As shown in FIG. 1, eyewear 10 adapted to position a lens in a predetermined orientation relative to the eyes includes a frame 12, lens 14 and temples 20. Preferably, the lens 14 is joined to the frame 12 so as to position the lens 14 before the eyes. As shown in FIGS. 1, 2 and 6, the temples 20 may be pivotally affixed or joined to the frame 12. Although the temples 20 are shown in FIG. 1 as pivotally affixed to the frame 12, the temples 20 may be permanently attached in a predetermined orientation or selectively engageable with the frame 12 without circumventing the scope of the present invention. Alternatively, the frame 12 may be eliminated entirely by securing the temples 20 with or without temple hinges directly to the lens 14 by thermoplastic bonding, adhesives screws or other known fastening means which are suitable for the material of the lens and temples.

As is well known in the art, the frame 12 and temples 20 may be conveniently made of molded plastic or a variety of other materials. The lens 14 may take any of

a number of configurations and may be formed of sheet plastic, molded plastic or glass as determined by the application of the lens.

Each temple 20 is defined by a proximal end 22 and a distal end 24 wherein the proximal end 22 is affixed either permanently or detachably to the frame 12. The permanent attachment of the temples to the frame 12 may be accomplished through molding or thermoplastic bonding. The detachable engagement of the temples 20 and the frame 12 is provided by the use of a snap fit or fasteners including screws or pins, as are known in the art.

Although the earstems shown in FIG. 1 are affixed to the frame 12, the earstem 20 may be attached directly to the lens 14. Preferably, the earstems 20 are hingeably attached to the frame 12 or lens 14 and most preferably, hingeably and removably attached, as well known in the art.

As shown in FIG. 1, in a typical hingeable connection, the frame 12 or lens 14 includes a hinge aperture (not illustrated) extending through a protruding flange 16. The earstem 20 includes a pair of parallel apertured flanges 18a, 18b spaced so as to receive the flange 16 of the frame 12 or lens 14 therebetween. The apertures in the earstem 20 are aligned with the apertures of the frame 12 or lens 14 and a pin is inserted so as to permit rotation of the frame 12 or lens 14 relative to the earstem 20, thereby providing a hingeable connection. In a typically readily detachable hinge, the aperture in the flange 16 of the frame 12 or lens 14 is replaced by an integral pin (not illustrated) which extends away from the flange 16 in opposite directions along the same axis as the aperture. The pinned flange 16 is inserted by deformation between the opposing flanges 18a, 18b and the integral pin snaps into the aperture on the flanges 18a, 18b, thereby providing a readily detachable hinge.

As shown in FIGS. 1 and 5, the distal end 24 may be curved so as to provide loops which are disposed behind the ears when the eyewear is worn. However, as the looped temples shown in FIGS. 1 and 5 may impinge upon the head in undesired locations when employed on heads of different sizes, the looped temples are not well suited to accommodate a wide variety of head sizes. Thus, the preferred embodiment shown in FIG. 2 includes a straight temple which, when used in conjunction with the present invention, provides more universally fitting eyewear and eliminates the traditional ear hook which can cause discomfort or distraction for many wearers.

As shown in FIG. 2, a recessed seat 30 is disposed intermediate of the proximal and distal ends 22, 24. As shown in FIG. 2, the seat 30 is preferably located adjacent the distal end 24 of the temple 20, so that the posterior shoulder 34 is substantially coincident with the distal end 24. However, as will be apparent, if it is desired to extend the temples in a posterior direction well beyond the ears, the distance between posterior shoulder 34 and distal end 24 can be proportionately increased to maintain seat 30 near the ear.

The recessed seat 30 is defined by posterior shoulder 34 and preferably an anterior shoulder 32, such that the anterior shoulder 32 is disposed between the posterior shoulder 34 and the proximal end 22. Preferably the cross-sectional dimension of the seat 30 between the anterior and posterior shoulders 32, 34 is smaller than the cross-sectional dimension of the adjacent temple 20.

Preferably, the posterior shoulder 34 is a sufficient distance from the anterior shoulder 32 so that at least

one traction member 40 may be retained therebetween. However, the seat 30 may be configured so as to extend substantially the entire length of the temple or alternatively, may extend only a portion of the overall length of the temple. Typically, the seat extends less than about one-half or one-third the length of the temple and is disposed on the posterior portion of the temple.

Although the seat is shown as defined by an anterior shoulder 32 and a posterior shoulder 34, the present invention may be practiced with a seat 30 defined only by a posterior shoulder 34 for preventing unintended axial displacement of the traction member in the posterior direction.

When the seat 30 is defined by only the posterior shoulder 34, the cross-sectional area of the seat may taper from being substantially coincident with an anterior cross-sectional area of the temple to the reduced cross-sectional area at the posterior shoulder 34. The posterior shoulder thereby prevents unintentional axial displacement of the traction member in the posterior direction. Axial displacement of the traction member in the anterior direction is inhibited by the expanding cross-sectional area of the seat in a tapered embodiment, as the seat extends in the anterior direction, or simply by a friction fit in the absence of a taper or an anterior shoulder.

Preferably, the seat 30 is located so that upon operable engagement of the traction member 40 within the seat 30, the traction member 40 provides an interface between the eyewear and the head. That is, the traction member 40 contacts the head.

Referring to FIG. 3, an elongate tubular traction member 40 is shown. In the preferred embodiment, the traction member 40 is formed substantially in the shape of a hollow cylinder having an inner surface 42 of radius R1 and outer surface 44 of radius R2, wherein radius R1 is less than radius R2. Preferably, radius R1 is expandable to permit passage of the distal end 24 of the temple 20 through the interior of the traction member 40 without exceeding the elastic limits of deformation of the traction member 40.

As shown in FIG. 4, the traction member 40 is preferably comprised of a material having sufficient elasticity that the inner surface 42 of the traction member 40 snugly contacts the surface of a seat 30 having an oblong or rectangular cross-section with a cross-sectional area greater than that of R1 in the unexpanded state. Referring to FIG. 6, the inner surface 42 will also preferably conform snugly to the surface of a seat 30 having a substantially circular cross-section.

Other embodiments of the traction member 40 may be employed, such as one having an open rectangular or triangular cross-sectional configuration having a bias so that the open legs of the triangle or rectangle are biased towards one another to tend to form a tubular element. Thus, traction devices can take the form of an elongate body which is split axially along one wall so that it does not form a complete tube. The bias should be sufficient so that the opposing inner surfaces 42 of the traction member 40 cooperatively engage the periphery of the recessed seat 30.

The traction member 40 may be formed by molding or extruding processes, as well known in the art. Preferably, the outer surface 44 is configured to enhance the coefficient of static friction between the eyewear and the head. The outer surface 44 may be formed to exhibit a variety of static friction coefficient enhancing configurations, such as a grid, waffle, or ribbed pattern (not

shown). Typically, the outer surface 42 produced by extrusion will exhibit axially oriented patterns, while molded outer surfaces may exhibit axially and/or radially oriented patterns.

As discussed infra, the traction member 40 is preferably formed of an elastomeric material exhibiting sufficient flexibility or elasticity to allow the traction member 40 to expand while being slipped over the temple distal end 24 and to contract back within seat 30 after passing over the distal end.

In a particularly preferred embodiment, the traction member 40 is formed of a relatively soft elastomeric material having a coefficient of sliding friction that increases when the material is wetted. Such a material, sometimes referred to as hydrophilic, tends to enhance retention of the traction member 40 in position on the wearer's head as the wearer perspires or encounters moisture, as during skiing. One suitable material which can be readily molded by conventional techniques is marketed under the name KROTON G™, a product of the Shell Oil Company.

The traction member 40 may comprise a resilient sponge-like elastomeric material, having a relatively high porosity, as shown in FIGS. 3 and 4. Alternatively, as shown in FIG. 6, the traction member 40 may comprise a substantially solid, i.e., fine or no porosity, yet flexible material. In addition, the traction member 40 may be made of materials having different densities, thereby providing traction members 40 having different weights, which may be employed to counterbalance lenses of differing weights, so as to distribute the weight of the eyewear 10 more evenly about the head.

The length of the traction member 40 is preferably no greater than and most preferably substantially equal to the distance between the anterior and posterior shoulders 32, 34. Although the traction member 40 is illustrated as extending roughly one-third or one-half the overall length of the temple, the traction members 40 within the present invention can extend anywhere from substantially the entire length of the temple 20 to only a relatively small portion thereof, as depending upon the configuration of the seat 30. Alternatively, a plurality of traction members 40 may be axially aligned within the seat 30. The traction members 40 may be selected so that a combined length of the members 40 substantially equals the distance between the anterior and the posterior shoulders 32, 34 or alternatively, the combined axial length of the members 40 may be such that an axial space separates adjacent traction members 40 within the seat.

In assembling the present invention, the traction member 40 is engaged with a temple 20 by passing the distal end 24 of the temple 20 through the tubular passageway within traction member 40. Alternatively, the temple 20 may be detached from the frame 12 or lens 14 and the proximal end 22 may be passed through the tubular passageway of the traction member 40. Therefore, the preferred construction of the traction member 40 which elastically passes over the distal end may be obviated. The traction member 40 is then moved along the temple 20 until the inner surface 42 engages the seat 30. In an embodiment in which the seat 30 has a length substantially equal to the length of the traction member 40, as the traction member 40 is received within the seat 30, further unintended motion along the temple 20 is prevented by engagement of the anterior and posterior shoulders 32, 34 with the traction member 40.

5,137,342

7

Alternatively, the seat 30 may have a sufficient axial length so as to retain a plurality of traction members 40 between the anterior and posterior shoulders 32, 34. The use of multiple traction members 40 allows for accommodating fashion considerations as well as high retaining forces for active uses, such as volleyball or basketball. Upon engagement of the traction member 40 within the seat 30, the outer surface 44 of the traction member 40 may be disposed outside of the periphery of the temple 20, as shown in FIG. 1 or, alternatively, may be substantially flush with the periphery 38 of the adjacent temple 20, as shown in FIG. 5. Traction members are preferably provided having a variety of wall thicknesses, i.e., the difference between R1 and R2. Thus, the wearer can select a flush fitting traction member as illustrated in FIG. 5 or a radially enlarged traction member as illustrated in FIG. 1, depending upon that wearer's perception of the need for enhanced traction or sleek appearance.

As the majority of the length of the temple 20 in the preferred embodiment is dominated by the periphery of the temple 20 rather than the seat 30, if the traction members 40 are removed from the temples 20, the fitting of the eyewear 10 will not be substantially denigrated. However, the length of the traction member 40, when engaged in the seat 30, provides a sufficient contact area to increase the resistance to movement of the eyewear 10 relative to the head.

This present invention has been described in detail in connection with the preferred embodiments, but these are examples only and the present invention is not restricted thereto. It will be easily understood by those skilled in the art that other variations and modifications can be easily made within the scope of this invention, which is defined by the following claims.

It is claimed:

1. Improved eyewear, comprising:

at least one temple piece having a recessed seat along a length thereof such that the seat defines a periphery which is smaller than the periphery of the adjacent temple portion, said seat having an axial length of less than about one-half the axial length of the temple; and

at least one substantially tubular traction member disposed within the recessed seat having an inner surface, an outer surface, and a central passageway running axially therethrough, said inner surface removably engaging the periphery of the seat, and said outer surface adapted to provide a contact surface with the head of the wearer.

2. Improved eyewear, comprising:

a frame;

at least one temple having proximal and distal ends and being joined to the frame at the proximal end thereof, having a recessed seat interposed between said proximal and distal ends, said seat having a smaller cross-sectional area than the cross-sectional area of said temple portion adjacent said seat, and said seat having an axial length of less than about one-half of the axial length of the temple; and

a substantially tubular elastomeric traction member having an inner surface and an outer surface, such that the inner surface is adapted to circumferentially contact the temple, and the outer surface is adapted to engage the head of a wearer, wherein the traction member is disposed in the recessed seat region on the temple.

8

3. An improved eyewear temple for retaining eyeglasses on the head of the wearer and reducing abrasion caused by movement of said eyewear, comprising:

an elongate eyewear temple body;

a first end on the temple for attaching the temple to the frame of the eyeglasses;

a second end on the temple, distal said first end, for engaging the head of the wearer; and

a recessed seat interposed between said first and second ends having a smaller cross-sectional area than that of said temple portion adjacent said seat, said seat being separated from the remainder of said temple by first and second shoulders, such that the axial length of the recessed seat between the first and second shoulders is less than about one-half of the axial length of the temple, said recessed seat being situated toward the distal end of the temple such that at least one substantially tubular traction member removably disposed within the recessed seat can engage the head of the wearer.

4. An eyewear temple as in claim 3, wherein at least one substantially tubular traction member is disposed within the recessed seat between the first and second shoulders, said member having an inner surface, an outer surface, and a central passageway running axially therethrough, said inner surface removably engaging the periphery of the seat, and said outer surface adapted to provide a contact surface with the head of the wearer.

5. An eyewear temple as in claim 4, wherein the tubular traction member comprises a resilient elastomeric material.

6. An improved eyewear temple as in claim 5, wherein said elastomeric material exhibits a coefficient of sliding friction that increases when the material is wetted.

7. An eyewear temple as in claim 5, wherein the thickness of the traction member is such that the outer surface of the traction member is substantially flush with the periphery of the adjacent portion of the temple.

8. An eyewear temple as in claim 7, wherein the outer cross-sectional shape of the traction member approximates the outer cross-sectional shape of the adjacent portion of the temple.

9. An eyewear temple as in claim 5, wherein the traction member extends radially outward beyond the surface of the adjacent portion of the temple.

10. An eyewear temple as in claim 5, wherein at least one tubular traction member disposed within the recessed seat extends substantially the entire distance between said first and second shoulders of the temple.

11. An eyewear temple as in claim 5, wherein the traction member is removable and comprises a hollow, elastomeric member adapted to allow elastic radial expansion for sliding over the distal end of said temples and into engagement with said recessed seat.

12. An eyewear temple as in claim 3, wherein the shoulders extend substantially perpendicularly from the seat.

13. An eyewear temple as in claim 3, wherein the recessed seat consists of a tapering that extends axially and radially from the distal end of the recessed seat to the proximal end, wherein the cross-sectional area of the seat tapers from the smaller periphery at the distal end to being substantially coincident with the cross-sectional area of the temple at the proximal end of the recessed seat.

14. An eyewear temple as in claim 3, wherein the axial length of the recessed seat extends no more than about one-third the length of the temple.

15. An eyewear temple as in claim 3 further comprising an attachment means on the first end thereof for pivotably removably attaching the temple to an eyeglass frame.

16. An improved eyewear temple for retaining eyeglasses on the head of the wearer and reducing abrasion caused by movement of said eyewear, comprising:

an elongate eyewear temple body, wherein the body is substantially linear through the axial length of the temple;

a first end on the temple for attaching the temple to the frame of the eyeglasses;

a second end on the temple, distal said first end, for engaging the head of the wearer;

a recessed seat interposed between said first and second ends having a smaller cross-sectional area than that of said temple portion adjacent said seat, said seat being separated from the remainder of said temple by first and second shoulders; and

at least one tubular traction member disposed within the recessed seat.

17. An eyewear temple as in claim 16, wherein at least one substantially tubular traction member is disposed within the recessed seat between the first and second shoulders, said member having in inner surface, an outer surface, and a central passageway running axially therethrough, said inner surface removably engaging the periphery of the seat, and said outer surface adapted to provide a contact surface with the head of the wearer.

18. An eyewear temple as in claim 17, wherein the tubular traction member comprises a resilient elastomeric material.

19. An improved eyewear temple as in claim 18, wherein said elastomeric material exhibits a coefficient of sliding friction that increases when the material is wetted.

20. An eyewear temple as in claim 18, wherein the thickness of the traction member is such that the outer surface of the traction member is substantially flush with the periphery of the adjacent portion of the temple.

21. An eyewear temple as in claim 20, wherein the outer cross-sectional shape of the traction member approximates the outer cross-sectional shape of the adjacent portion of the temple.

22. An eyewear temple as in claim 18, wherein the traction member extends radially outward beyond the surface of the adjacent portion of the temple.

23. An eyewear temple as in claim 16, wherein the shoulders extend substantially perpendicularly from the seat.

24. An eyewear temple as in claim 16, wherein the recessed seat consists of a tapering that extends axially and radially from the distal end of the recessed seat to the proximal end, wherein the cross-sectional area of the seat tapers from the smaller periphery at the distal end to being substantially coincident with the cross-sectional area of the temple at the proximal end of the recessed seat.

25. An eyewear temple as in claim 16, wherein the axial length of the recessed seat extends no more than about one-third the length of the temple.

26. An eyewear temple as in claim 16, wherein the axial length of the recessed seat extends no more than about one-half the length of the temple.

27. An eyewear temple as in claim 16, wherein at least one tubular traction member disposed within the recessed seat extends substantially the entire distance between said first and second shoulders of the temple.

28. An eyewear temple as in claim 16, wherein the traction member is removable and comprises a hollow, elastomeric member adapted to allow elastic radial expansion for sliding over the distal end of said temples and into engagement with said recessed seat.

29. An eyewear temple as in claim 16, further comprising an attachment means on the first end thereof for pivotably removably attaching the temple to an eyeglass frame.

30. Improved eyewear, comprising:

at least one temple piece being substantially linear throughout the axial length of the temple and having a recessed seat along a length thereof such that the seat defines a periphery which is smaller than the periphery of the adjacent temple portion; and at least one substantially tubular traction member disposed within the recessed seat having an inner surface, an outer surface, and a central passageway running axially therethrough said inner surface removably engaging the periphery of the seat, and said outer surface adapted to provide a contact surface with the head of the wearer.

31. Improved eyewear, comprising:

a frame;

at least one temple having proximal and distal ends and being joined to the frame at the proximal end thereof, said temple being substantially linear throughout the axial length of the temple, said temple having a recessed seat interposed between said proximal and distal ends, said seat having a smaller cross-sectional area than that of said temple portion adjacent said seat; and

a substantially tubular elastomeric traction member having an inner surface and an outer surface, such that the inner surface is adapted to circumferentially contact the temple, and the outer surface is adapted to engage the head of a wearer, wherein the traction member is disposed in the recessed seat region on the temple.

32. Improved eyewear having a lens, a frame supporting said lens for positioning the lens before the eyes of a wearer, and first and second temples for securing said eyewear to the head of the wearer, said temples having a proximal end joined to said frame and a distal end spaced from said proximal end, the improvement comprising:

said first and second temples being substantially linear throughout the axial length of the temple member, said temples having disposed between said proximal and distal ends a radially recessed seat having a smaller cross-sectional area than that of said temple portion adjacent said seat; and

at least one traction member releasably secured on said first and second temples within the seat, whereby said traction member frictionally engages the wearer's head.

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US00D365591S

United States Patent [19]

[11] Patent Number: Des. 365,591

Jannard et al.

[45] Date of Patent: **Dec. 26, 1995

[54] EYEGLASSES

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[**] Term: 14 Years

[21] Appl. No.: 26,422

[22] Filed: Jul. 26, 1994

[52] U.S. Cl. D16/326

[58] Field of Search D16/300, 306,
D16/309-311, 315-317, 323-330, 340,
341; 351/44, 50, 51, 103-110, 158

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Primary Examiner—Terry A. Wallace

Assistant Examiner—R. Barkai

Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear

[57] CLAIM

The ornamental design for eyeglasses, as shown and
described.

DESCRIPTION

FIG. 1 is a front perspective view of the eyeglasses of the
present invention;

FIG. 2 is a front elevational view thereof;

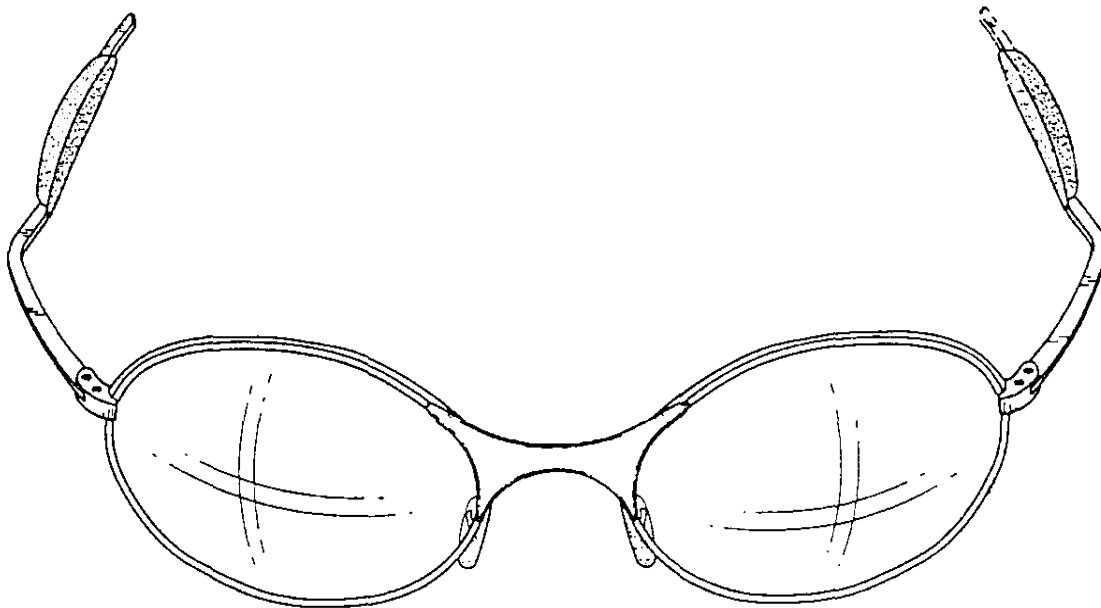
FIG. 3 is a rear elevational view thereof;

FIG. 4 is a left side elevational view thereof, the right side
elevational view being a mirror image thereof;

FIG. 5 is a top plan view thereof; and,

FIG. 6 is a bottom plan view thereof.

1 Claim, 3 Drawing Sheets



U.S. Patent

Dec. 26, 1995

Sheet 1 of 3

Des. 365,591

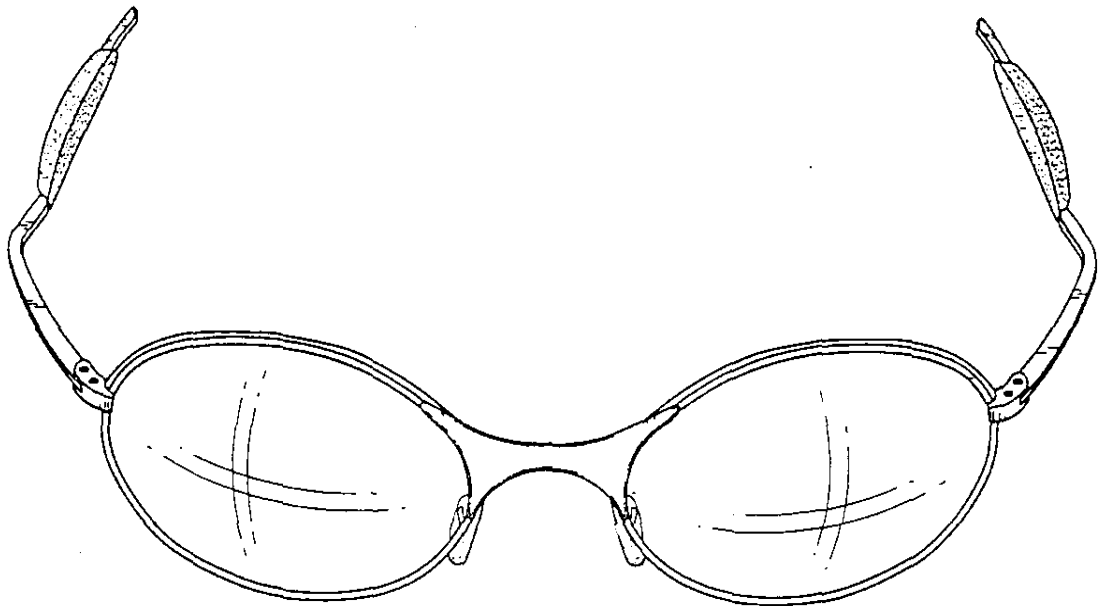


FIG. 1

U.S. Patent

Dec. 26, 1995

Sheet 2 of 3

Des. 365,591

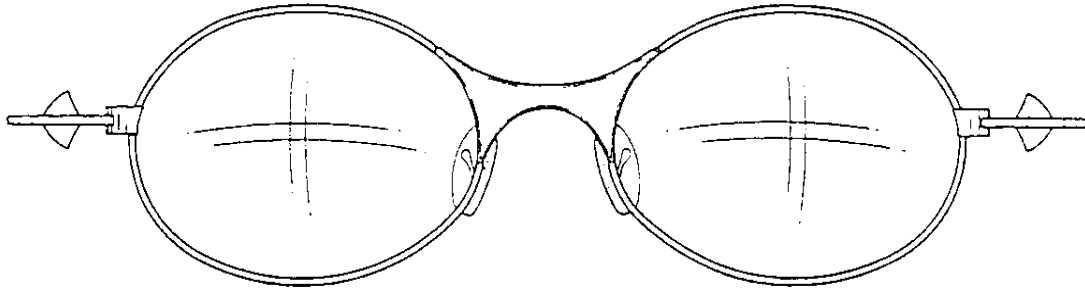


FIG. 2

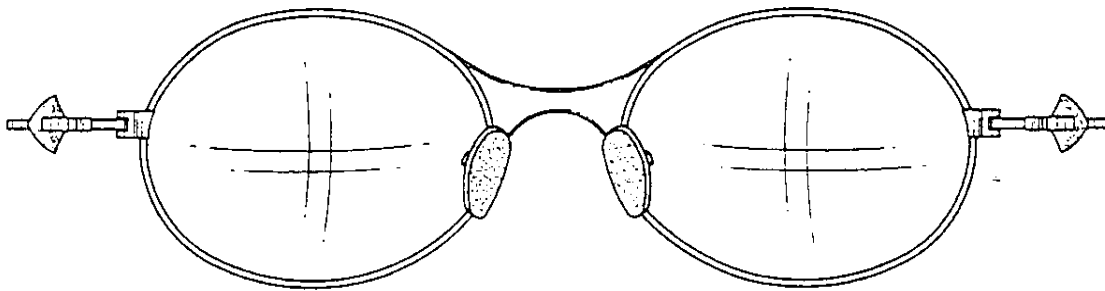


FIG. 3

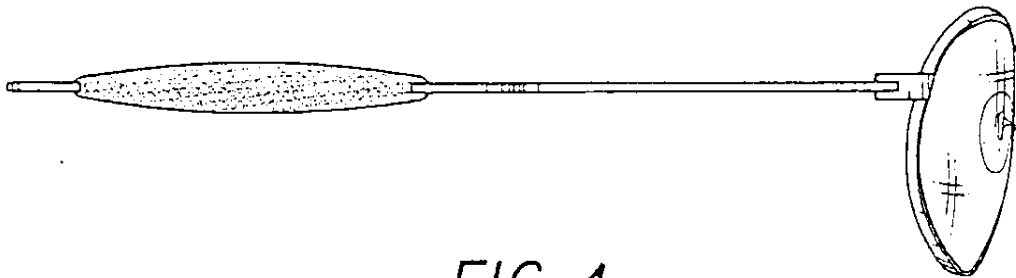


FIG. 4

U.S. Patent

Dec. 26, 1995

Sheet 3 of 3

Des. 365,591

FIG. 5

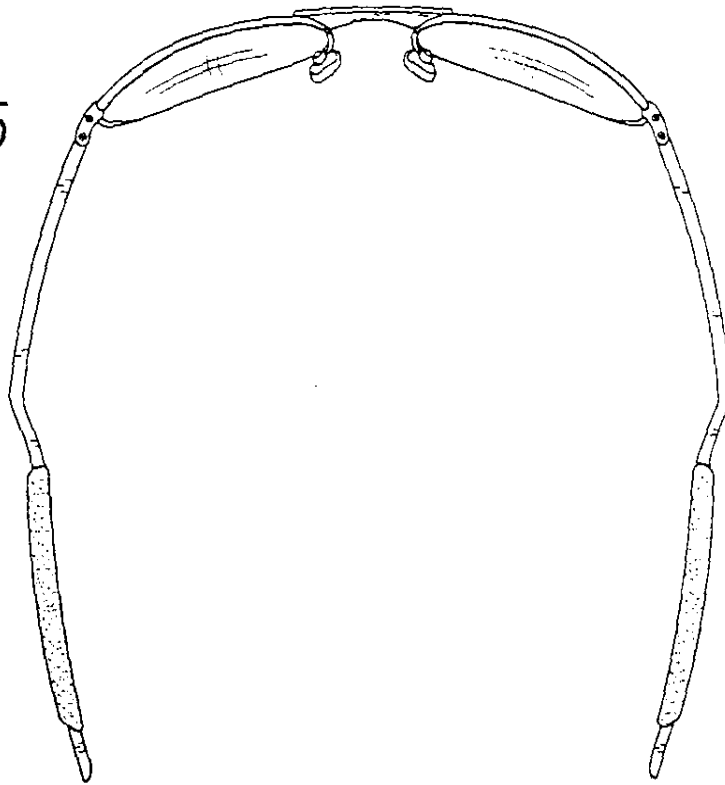
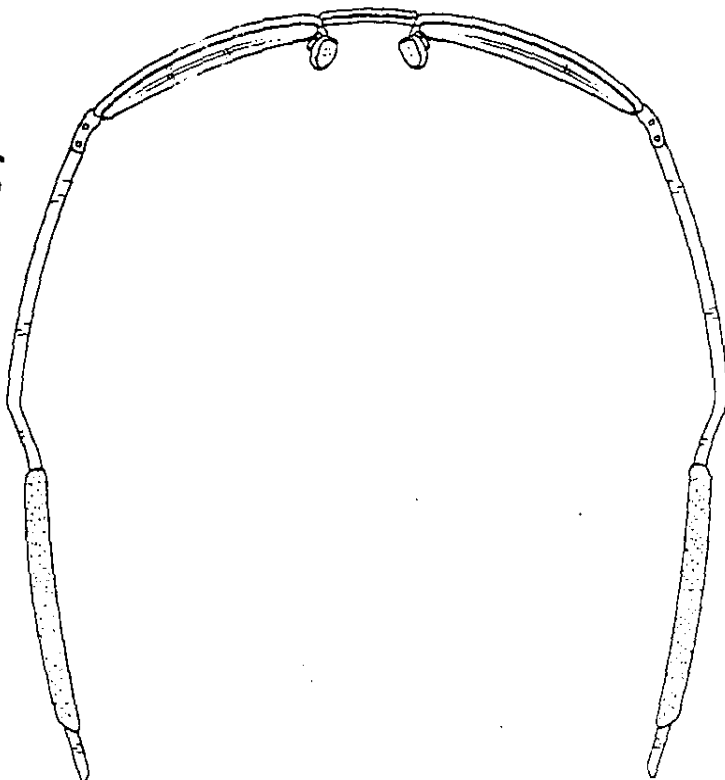


FIG. 6





US00D376381S

United States Patent [19]

[11] Patent Number: Des. 376,381

Jannard et al.

[45] Date of Patent: **Dec. 10, 1996

[54] PAIR OF SPECTACLES WITHOUT
EARSTEMS

Primary Examiner—Raphaci Barkai

Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear

[75] Inventors: James H. Jannard, Eastsound, Wash.;
Hirofumi Nakano, Fukui, Japan

[57] CLAIM

[73] Assignee: Oakley, Inc., Irvine, Calif.

The ornamental design for a pair of spectacles without
earstems, as shown and described.

[**] Term: 14 Years

DESCRIPTION

[21] Appl. No.: 30,568

[22] Filed: Nov. 2, 1994

[52] U.S. Cl. _____ D16/326; D16/330

[58] Field of Search _____ D16/304, 306,
D16/307, 309, 310, 312, 314, 322-330,
332, 333, 335, 900; 351/44, 47, 51, 57,
58, 59, 158FIG. 1 is a front perspective view of a pair of spectacles
without earstems showing our new design, the broken line
showing of the earstems is for illustrative purposes only and
forms no part of the claimed design;

FIG. 2 is a front elevational view thereof;

FIG. 3 is a rear elevational view thereof;

FIG. 4 is a left-side elevational view thereof, the right-side
elevational view being a mirror image thereof;

FIG. 5 is a top plan view thereof; and,

FIG. 6 is a bottom plan view thereof.

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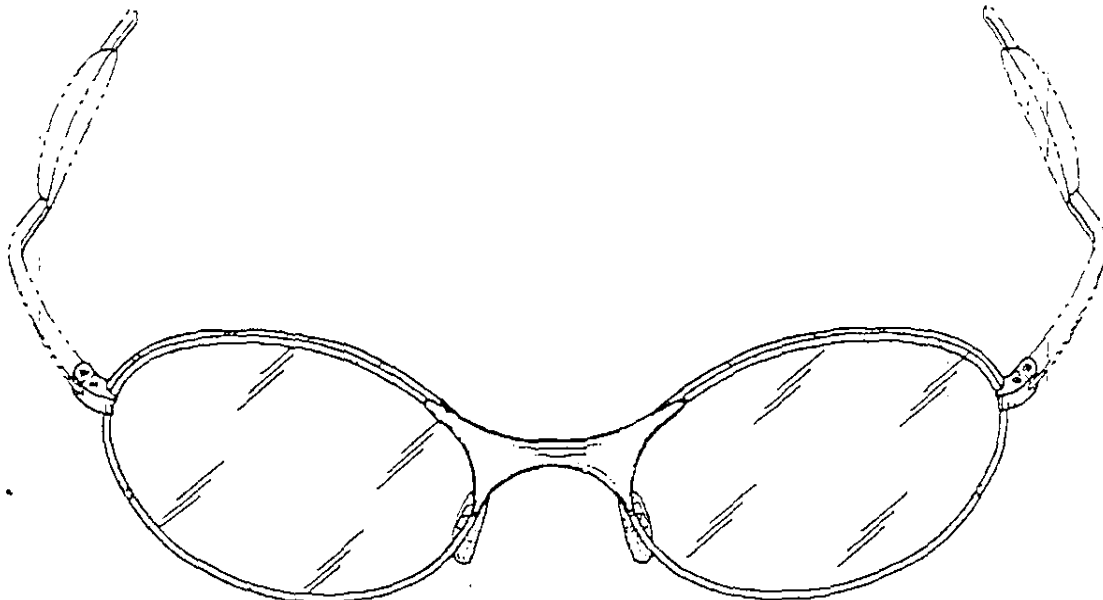
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1 Claim, 3 Drawing Sheets



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Sheet 1 of 3

Des. 376,381

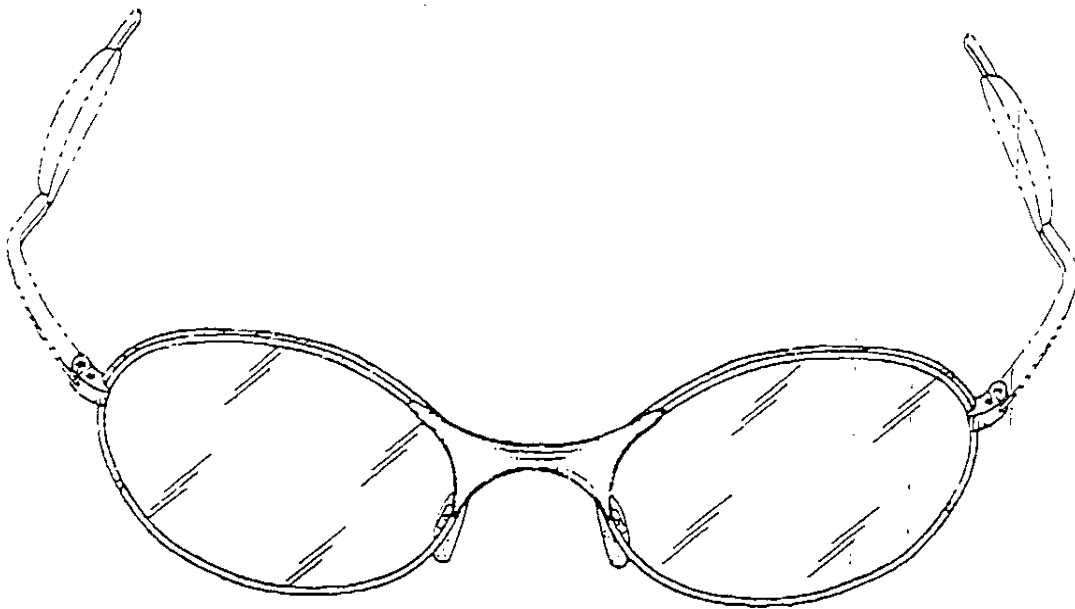


FIG. 1

U.S. Patent

Dec. 10, 1996

Sheet 2 of 3

Des. 376,381

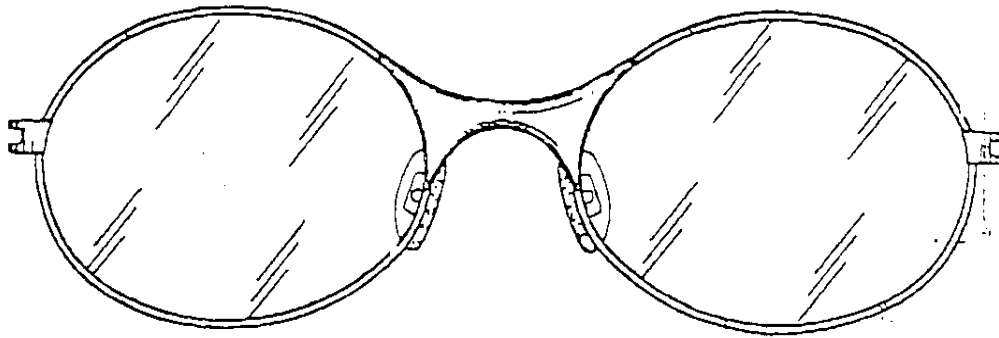


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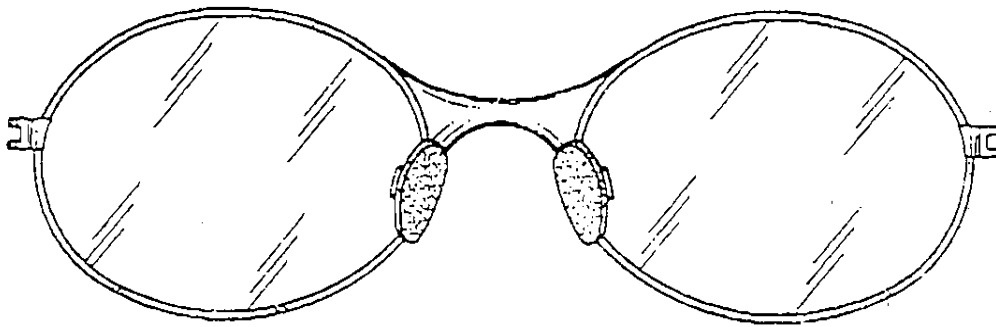


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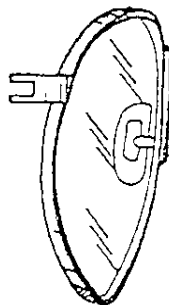


FIG. 4

U.S. Patent

Dec. 10, 1996

Sheet 3 of 3

Des. 376,381

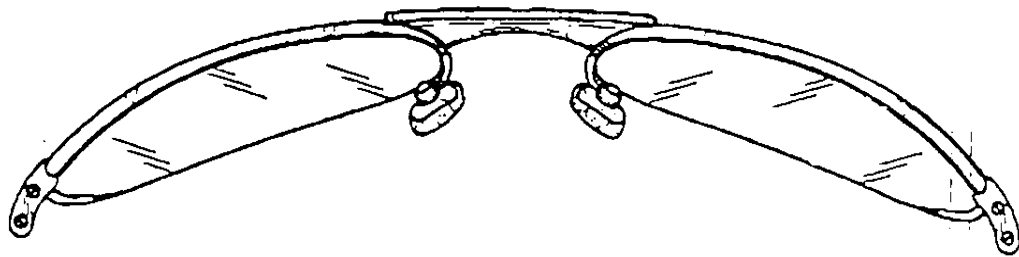


FIG. 5

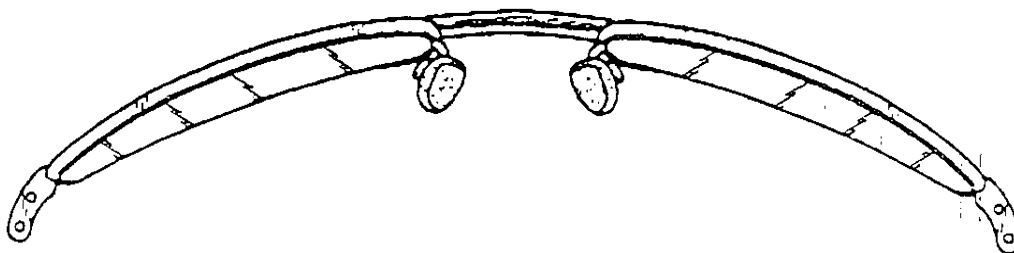


FIG. 6



US00D415188S

United States Patent [19]

[11] Patent Number: Des. 415,188

Thixton et al.

[45] Date of Patent: ** Oct. 12, 1999

[54] EYEGLASSES

[75] Inventors: Lek H. Thixton, Eastsound, Wash.;
Colin Baden, Irvine, Calif.; James H.
Jannard, Eastsound, Wash.; Peter Yee,
Irvine, Calif.

[73] Assignee: Oakley, Inc., Foothill Ranch, Calif.

[**] Term: 14 Years

[21] Appl. No.: 29/087,390

[22] Filed: May 1, 1998

[51] LOC (6) CL 16-06

[52] U.S. CL D16/326; D16/331

[58] Field of Search D16/101, 300-350,
D16/335; 351/41, 44, 51, 52, 111, 121,
158; 2/428, 430, 432, 447-449

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Primary Examiner—Raphael Barkai
Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear,
LLP

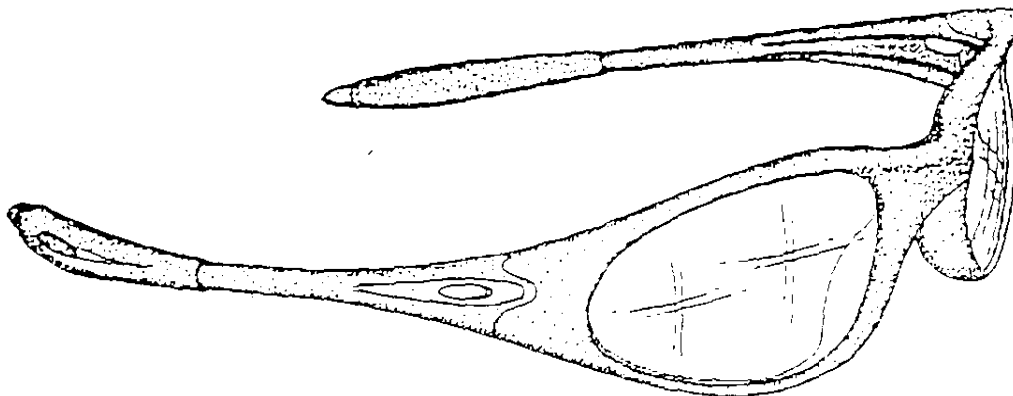
[57] CLAIM

The ornamental design for eyeglasses, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of the eyeglasses of the present invention;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a rear elevational view thereof;
FIG. 4 is a left side elevational view thereof, the right side elevational view being a mirror image thereof;
FIG. 5 is a top plan view thereof; and,
FIG. 6 is a bottom plan view thereof.

1 Claim, 4 Drawing Sheets



Des. 415,188

Page 2

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U.S. Patent

Oct. 12, 1999

Sheet 1 of 4

Des. 415,188

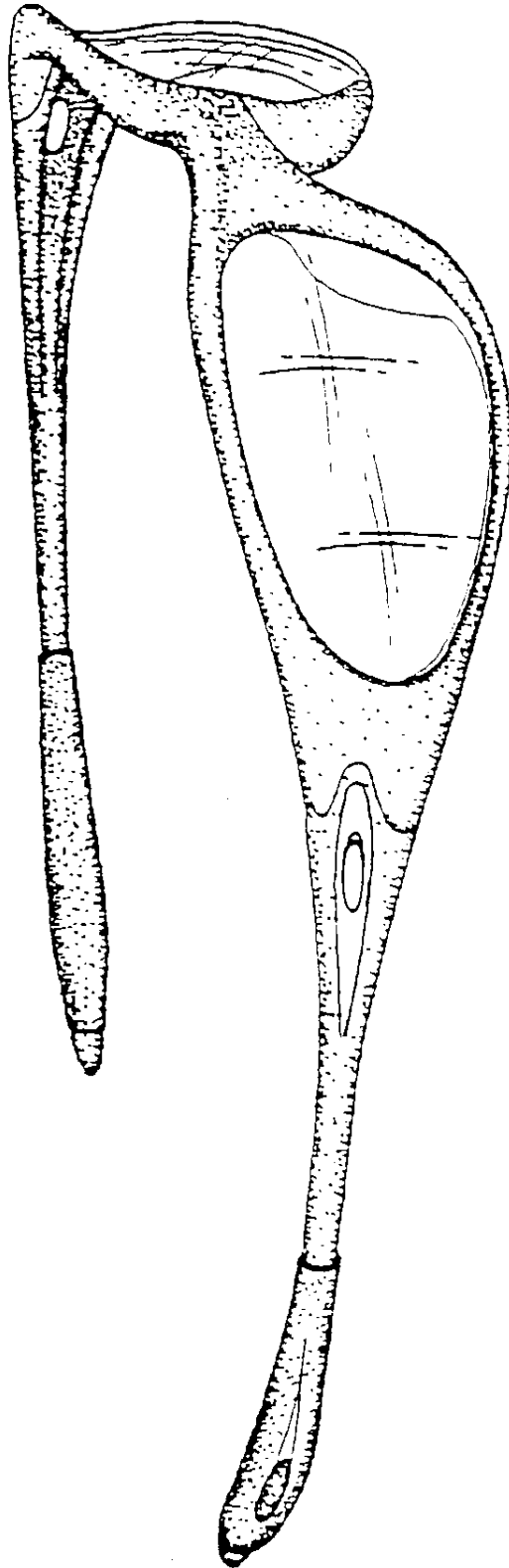


FIG. 1

U.S. Patent

Oct. 12, 1999

Sheet 2 of 4

Des. 415,188

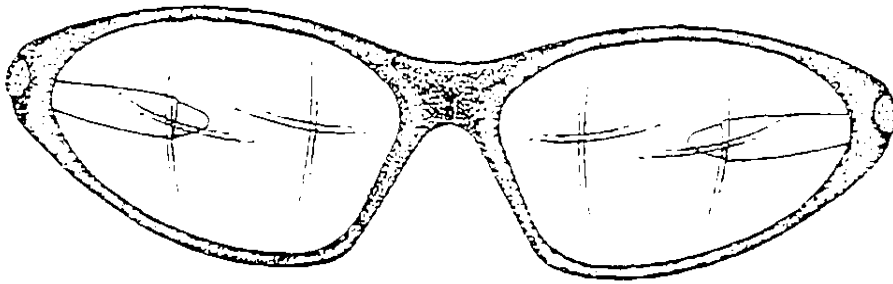


FIG. 2

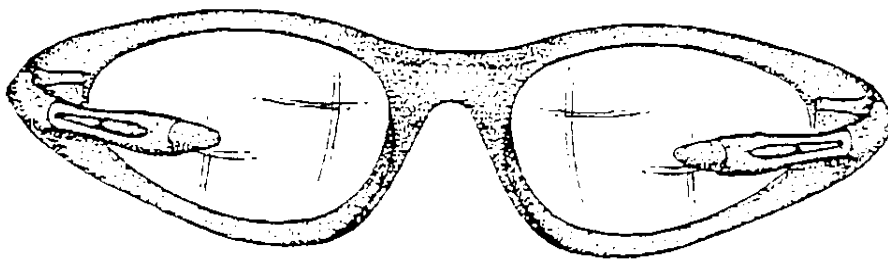


FIG. 3

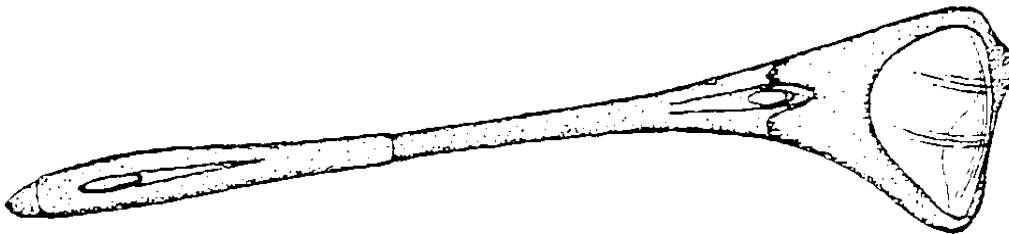


FIG. 4

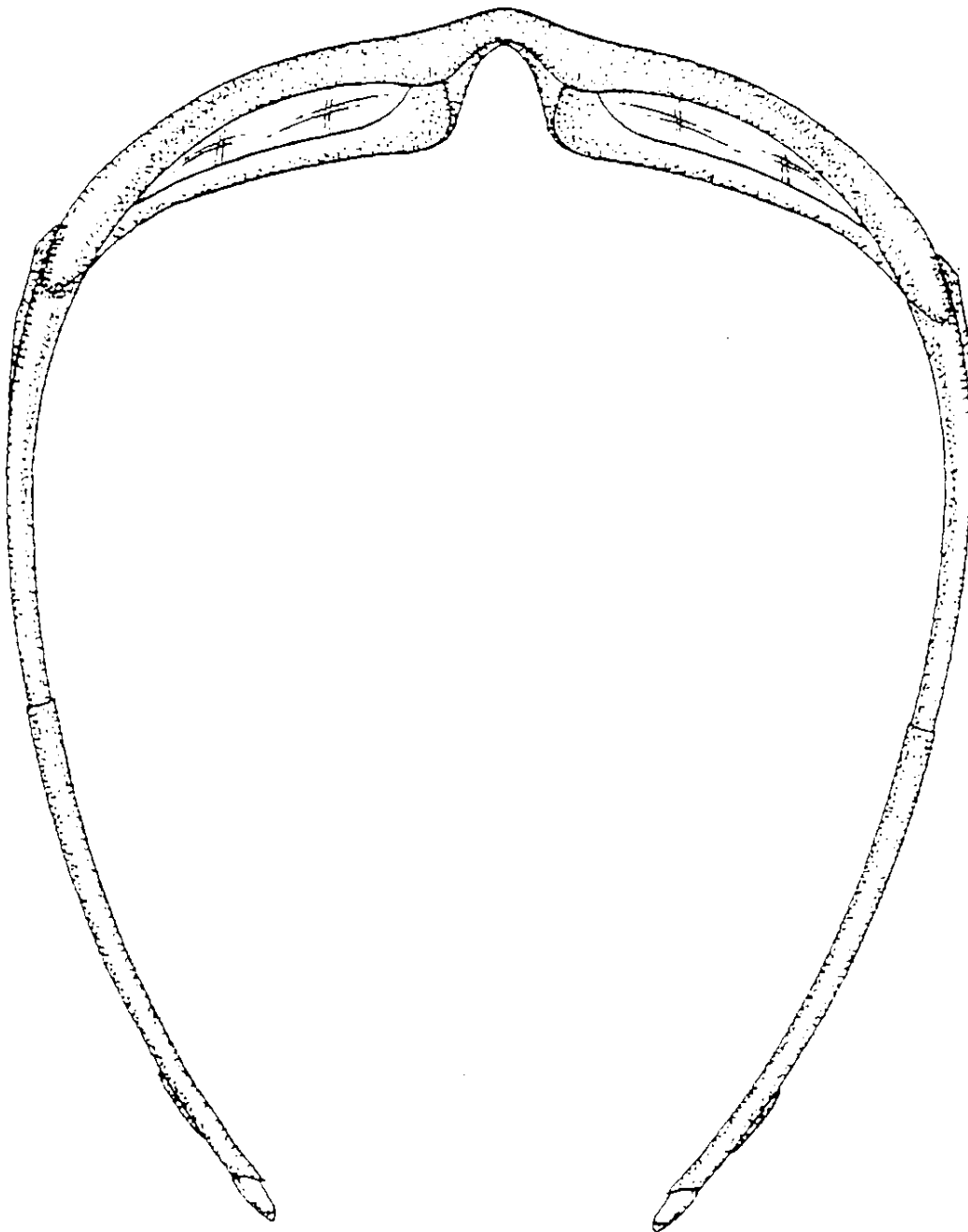
U.S. Patent

Oct. 12, 1999

Sheet 3 of 4

Des. 415,188

FIG. 5



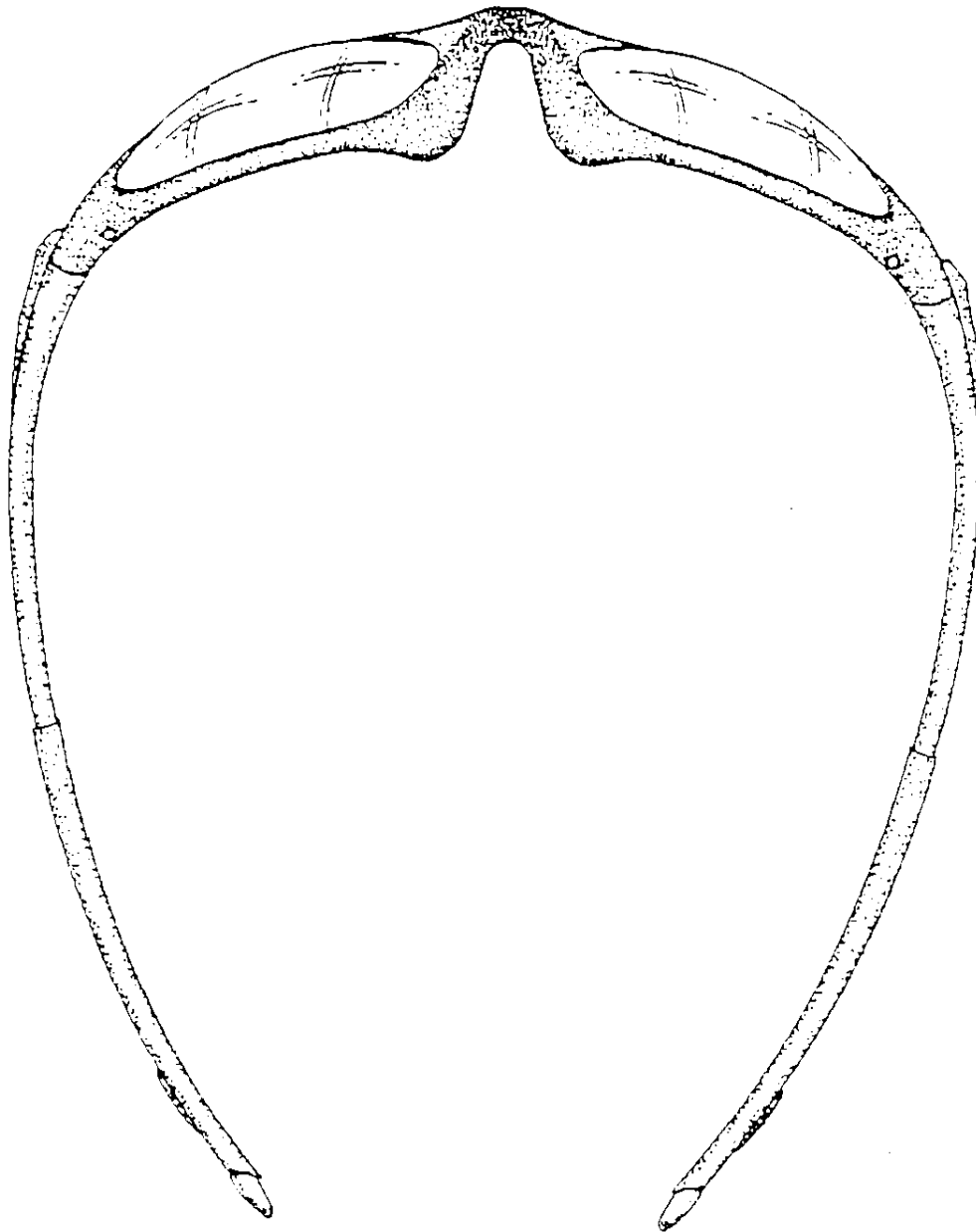
U.S. Patent

Oct. 12, 1999

Sheet 4 of 4

Des. 415,188

FIG. 6



AO 120 (3/85)

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 that a court action has been filed on the following patent(s) in the U.S. District Court:

DOCKET NO. 00cv1317 JM(POR) [1]	DATE FILED 6/30/00	U.S. DISTRICT COURT United States District Court, Southern District of California
PLAINTIFF OAKLEY INC		DEFENDANT ASHLEY MURRAY
PATENT NO.	DATE OF PATENT	PATENTEE
1 743,568	8/9/91	JAMES JANNARD
2 620,648	11/30/90	JAMES H. JANNARD
3 495,295	3/16/90	JAMES H. JANNARD
4 574,007	8/28/90	JAMES H. JANNARD
5 151,173	2/1/88	JAMES H. JANNARD

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OAKLEY INC		ASHLEY MURRAY
PATENT NO.	DATE OF PATENT	PATENTEE
6. 436474	11/20/89	JAMES JANNARD
7. 545,964	6/28/90	JAMES H. JANNARD
8. 583,721	9/17/90	JAMES H. JANNARD
9. 39,137	5/22/95	JAMES H. JANNARD
10. 695,683	5/3/91	JAMES H. JANNARD

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11. 26,422	7/26/94	JAMES JANNARD
12. 30,568	11/2/94	JAMES H. JANNARD
13. 29,087	5/1/98	LEK H. THIXTON

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4 574,007	8/28/90	JAMES H. JANNARD
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PATENT NO.	DATE OF PATENT	PATENTEE		
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In the above-entitled case, the following decision has been rendered or judgment issued:

DECISION/JUDGMENT		
CLERK	(BY) DEPUTY CLERK	DATE

Copy 1 - Upon initiation of action, mail this copy to Commissioner Copy 3 - Upon termination of action, mail this copy to Commissioner
Copy 2 - Upon filing document adding patent(s), mail this copy to Commissioner Copy 4 - Case file copy

AO 120 (3/85)

TO: Commissioner of Patents and Trademarks Washington, D.C. 20231	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT
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In compliance with the Act of July 19, 1952 (66 Stat. 814; 35 U.S.C. 290) you are hereby advised
that a court action has been filed on the following patent(s) in the U.S. District Court:

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
00cv1317 JM(POR) [1]	6/30/00	United States District Court, Southern District of California
PLAINTIFF		DEFENDANT
OAKLEY INC		ASHLEY MURRAY
PATENT NO.	DATE OF PATENT	PATENTEE
11. 26,422	7/26/94	JAMES JANNARD
12. 30,568	11/2/94	JAMES H. JANNARD
13. 29,087	5/1/98	LEK H. THIXTON

In the above-entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY		
	<input type="checkbox"/> Amendment	<input type="checkbox"/> Answer	<input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading
PATENT NO.	DATE OF PATENT	PATENTEE	
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00cv1317 JM(POR) [1]	6/30/00	United States District Court, Southern District of California
PLAINTIFF		DEFENDANT
OAKLEY INC		ASHLEY MURRAY
PATENT NO.	DATE OF PATENT	PATENTEE
1 743,568	8/9/91	JAMES JANNARD
2 620,648	11/30/90	JAMES H. JANNARD
3 495,295	3/16/90	JAMES H. JANNARD
4 574,007	8/28/90	JAMES H. JANNARD
5 151,173	2/1/88	JAMES H. JANNARD

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DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
00cv1317 JM(POR) [1]	6/30/00	United States District Court, Southern District of California
PLAINTIFF OAKLEY INC		DEFENDANT ASHLEY MURRAY
PATENT NO.	DATE OF PATENT	PATENTEE
6. 436474	11/20/89	JAMES JANNARD
7. 545,964	6/28/90	JAMES H. JANNARD
8. 583,721	9/17/90	JAMES H. JANNARD
9. 39,137	5/22/95	JAMES H. JANNARD
10. 695,683	5/3/91	JAMES H. JANNARD

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CIVIL COVER SHEET

I(a) PLAINTIFFS OAKLEY, INC., a Washington corporation	DEFENDANTS ASHLEY MURRAY, individually and dba The Gift Zone and DAWN MURRAY, individually and dba The Gift Zone
(b) COUNTY OF RESIDENCE OF FIRST LISTED PLAINTIFF <u>Orange, CA</u> (EXCEPT IN U.S. PLAINTIFF CASES)	COUNTY OF RESIDENCE OF FIRST LISTED DEFENDANT <u>Los Angeles, CA</u> (IN U.S. PLAINTIFF CASES ONLY)
(c) ATTORNEYS (FIRM NAME, ADDRESS AND TELEPHONE NUMBER) WEEKS, KAUFMAN & JOHNSON 462 Stevens Avenue Suite 310 Solana Beach, CA 92075 (858) 794-2140	ATTORNEYS (IF KNOWN) <div style="text-align: right; font-size: 1.2em;">00 JUN 30 PM 12:08</div> <div style="text-align: center; font-size: 1.5em; font-weight: bold;">'00 CV 1317 JM (POR)</div>

II. BASIS OF JURISDICTION (PLACE AN x IN ONE BOX ONLY)	III. CITIZENSHIP OF PRINCIPAL PARTIES (PLACE AN x IN ONE BOX FOR PLAINTIFF AND ONE FOR DEFENDANT)																								
<input type="checkbox"/> 1 U.S. Government Plaintiff <input type="checkbox"/> 2 U.S. Government Defendant <input checked="" type="checkbox"/> 3 Federal Question (U.S. Government Not a Party) <input type="checkbox"/> 4 Diversity (Indicate Citizenship of Parties in Item III)	<table border="0" style="width:100%;"> <tr> <td style="width:33%;">Citizen of This State</td> <td style="width:10%; text-align: center;">PTF</td> <td style="width:10%; text-align: center;">DEF</td> <td style="width:33%;">Incorporated or Principal Place of Business In This State</td> <td style="width:10%; text-align: center;">PTF</td> <td style="width:10%; text-align: center;">DEF</td> </tr> <tr> <td></td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td style="text-align: center;"><input type="checkbox"/> 1</td> <td></td> <td style="text-align: center;"><input type="checkbox"/> 4</td> <td style="text-align: center;"><input type="checkbox"/> 4</td> </tr> <tr> <td>Citizen of Another State</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> <td style="text-align: center;"><input type="checkbox"/> 2</td> <td>Incorporated and Principal Place of Business In Another State</td> <td style="text-align: center;"><input type="checkbox"/> 5</td> <td style="text-align: center;"><input type="checkbox"/> 5</td> </tr> <tr> <td>Citizen or Subject of a Foreign Country</td> <td style="text-align: center;"><input type="checkbox"/> 3</td> <td style="text-align: center;"><input type="checkbox"/> 3</td> <td>Foreign Nation</td> <td style="text-align: center;"><input type="checkbox"/> 6</td> <td style="text-align: center;"><input type="checkbox"/> 6</td> </tr> </table>	Citizen of This State	PTF	DEF	Incorporated or Principal Place of Business In This State	PTF	DEF		<input type="checkbox"/> 1	<input type="checkbox"/> 1		<input type="checkbox"/> 4	<input type="checkbox"/> 4	Citizen of Another State	<input type="checkbox"/> 2	<input type="checkbox"/> 2	Incorporated and Principal Place of Business In Another State	<input type="checkbox"/> 5	<input type="checkbox"/> 5	Citizen or Subject of a Foreign Country	<input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation	<input type="checkbox"/> 6	<input type="checkbox"/> 6
Citizen of This State	PTF	DEF	Incorporated or Principal Place of Business In This State	PTF	DEF																				
	<input type="checkbox"/> 1	<input type="checkbox"/> 1		<input type="checkbox"/> 4	<input type="checkbox"/> 4																				
Citizen of Another State	<input type="checkbox"/> 2	<input type="checkbox"/> 2	Incorporated and Principal Place of Business In Another State	<input type="checkbox"/> 5	<input type="checkbox"/> 5																				
Citizen or Subject of a Foreign Country	<input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation	<input type="checkbox"/> 6	<input type="checkbox"/> 6																				

IV. ORIGIN (PLACE AN x IN ONE BOX ONLY)
<input checked="" type="checkbox"/> 1 Original Proceeding <input type="checkbox"/> 2 Removed from State Court <input type="checkbox"/> 3 Remanded from Appellate Court <input type="checkbox"/> 4 Reinstated or Reopened <input type="checkbox"/> 5 Transferred from another district (specify) <input type="checkbox"/> 6 Multidistrict Litigation <input type="checkbox"/> 7 Appeal to District Judge from Magistrate judgment

V. REQUESTED IN COMPLAINT: <input type="checkbox"/> CHECK IF THIS IS A CLASS ACTION DEMANDS UNDER F.R.C.P. 23	Check YES only if demanded in complaint: JURY DEMAND: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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VI. CAUSE OF ACTION (CITE THE U.S. CIVIL STATUTE UNDER WHICH YOU ARE FILING AND WRITE A BRIEF STATEMENT OF CAUSE. DO NOT CITE JURISDICTIONAL STATUTES UNLESS DIVERSITY.)

This is a case for patent infringement under 35 U.S.C. §§ 271 and 281

VII. NATURE OF SUIT (PLACE AN x IN ONE BOX ONLY)						
OTHER STATUTES	CONTRACT	TORTS	FORFEITURE / PENALTY	BANKRUPTCY		
<input type="checkbox"/> 400 State Reapportionment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce/ICC Rates/etc <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 810 Selective Service <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 875 Customer Challenge 12 USC 3410 <input type="checkbox"/> 891 Agricultural Act <input type="checkbox"/> 892 Economic Stabilization Act <input type="checkbox"/> 893 Environmental Matters <input type="checkbox"/> 894 Energy Allocation Act <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 900 Appeal of Fee Determination Under Equal Access to Justice <input type="checkbox"/> 950 Constitutionality of State Statutes <input type="checkbox"/> 890 Other Statutory Actions	<input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loan (Excl. Veterans) <input type="checkbox"/> 153 Recovery of Overpayment Of Veteran's Benefits <input type="checkbox"/> 160 Stockholders' Suits <input type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability REAL PROPERTY <input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Ejectment <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	PERSONAL INJURY <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury CIVIL RIGHTS <input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 444 Welfare <input type="checkbox"/> 440 Other Civil Rights	PERSONAL INJURY <input type="checkbox"/> 362 Personal Injury-Med Malpractice <input type="checkbox"/> 365 Personal Injury-Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability PERSONAL PROPERTY <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth in Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability PRISONER PETITIONS <input type="checkbox"/> 510 Motions to Vacate Sentence Habeas Corpus <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition	<input type="checkbox"/> 610 Agriculture <input type="checkbox"/> 620 Other Food & Drug <input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881 <input type="checkbox"/> 630 Liquor Laws <input type="checkbox"/> 640 R.R. & Truck <input type="checkbox"/> 650 Airline Regs <input type="checkbox"/> 660 Occupational Safety/Health <input type="checkbox"/> 690 Other LABOR <input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Mgmt. Relations <input type="checkbox"/> 730 Labor/Mgmt. Reporting & Disclosure Act <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Empl. Ret. Inc. Security Act	<input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 PROPERTY RIGHTS <input type="checkbox"/> 820 Copyrights <input checked="" type="checkbox"/> 830 Patent <input type="checkbox"/> 840 Trademark SOCIAL SECURITY <input type="checkbox"/> 861 HIA (1395ff) <input type="checkbox"/> 862 Black Lung (923) (405(g)) <input type="checkbox"/> 864 SSD Title XVI <input type="checkbox"/> 865 RSI (405(g)) FEDERAL TAX SUITS <input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant) <input type="checkbox"/> 871 IRS-Third Party 26 USC 7609	

III(a). IDENTICAL CASES: Has this action been previously filed and dismissed, remanded or closed? XX No Yes

If yes, list case number(s): _____

FOR OFFICE USE ONLY: ☐ Pro Hac Vice fee: ☐ paid ☐ not paid

Applying IFP _____ Judge _____ Mag. Judge _____

061620 \$150.00 MD