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SPECTACLE FRAME

The invention relates to a spectacle frame.

At least in the nose region, spectacles of this type are mostly of plastics material, and sometimes also of metal. The small supporting plates are usually of comparatively large area. They are, however, hard and have a smooth surface. Therefore the spectacles may slip, above all if the skin is moist and/or the spectacles are subjected to an oscillatory loading, such as for example by air eddies.

10 The space between the rear face of the lens and the cornea (cornea-vertex gap) must be retained particularly with a relatively high diopter number, exactly as measured in the oculist's test spectacles, in the spectacles which are actually manufactured,

15 because if there is an increase in the cornea-vertex gap, e.g. as when the spectacles slip down the nose, the dispersive spectacle lens means that the refraction becomes more intense and the image smaller while with collective glass, the refraction is weaker and the

20 image larger.

An object of the invention is to provide a device which is not only aesthetically satisfactory but also eliminates problems of the spectacles being seated on the wearer's nose, doing so by means which are

25 structurally simple and inexpensive.

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According to the invention, there is provided a spectacle frame comprising lens rims having respective lens receiving grooves in the inner surfaces thereof, a bridge connecting the lens rims, rigid nose flank supporting plates on the rims respectively, each plate extending from a position below the bridge away from the bridge in the direction of the periphery of the rim and also rearwardly from the rim, each plate being provided with a hole which passes therethrough, and pads of a material of Shore D hardness of 10 to 30 provided respectively on said supporting plates, each pad having a plate portion for engaging the nose, a stem which passes through the hole and a locking plate engaging the surface of the supporting plate remote from the nose engaging the side of the pad.

With this solution, even a layman can fit and remove the nose pads, e.g. in the event of the pads becoming discoloured or requiring to be disinfected or the like. Now, the bridge of the nose scarcely comes in contact at all with the nose piece and nevertheless the spectacles fit both gently and also reliably. The additional expenditure is so minimal that it is only noticed under close examination. It is no problem to convert existing glasses after the fashion disclosed in the invention.

The features of Claim 2 make it possible with elongated plate portions to prevent these plates

rotating about their stems. If cylindrical plate portions were to be used, then rotation would not matter.

By reason of the features according to Claim 3,
5 elongated holes may be provided and thus torque may also be better absorbed than if they were to be left to extend in a transverse direction. In this direction, only short elongated holes would be feasible.

The features of Claim 4 provide for an aesthetic
10 improvement in that it is no longer possible to look through between the back of the plate portion and the eye rim. Furthermore, the mount absorbs some of those forces which seek to displace the plate portion. Such forces with an action component at a right-angle to the
15 plate portion force this latter even more into the mount.

The features of Claim 5 simplify the tool for producing the pads and also for producing the frame. Furthermore, a flat surface absorbs the forces better
20 and cleaning is easier.

By virtue of the features of Claim 6, it is only necessary to produce and stock one type of pad.

The features of Claim 7 result in the stem fully occupying the elongated hole, so that its cross-section
25 is of maximum size and the forces acting give rise to specifically lower loadings than if the stem were not completely to fill the elongated hole.

The features of Claim 8 result in the locking plate and the plate portion being pulled towards each other with a little initial tension, so that no play occurs.

5 The features of Claim 9 make it easier to press the locking plate through the receiving hole.

The features of Claim 9 mean on the one hand that the locking plate is of optimum small size which denotes less material consumption and aesthetically desirable properties, while on the other the locking
10 plate can easily be pressed through and is nevertheless held securely.

An advantage achieved by the invention is that the height of the lens rim can easily be adjusted selecting the appropriate thickness of pad.

15 The features according to Claim 12 ensure that it is possible to dispense with special inlays in the pad so that manufacture is easier, the pad aesthetically developing no additional characteristics of movement, its softness being capable of being fully exploited.

20 Even if the back of the plate portion is resting on the supporting plate, the plate portion is nevertheless sufficiently thick that the skin is not seen or only to a small extent is seen through the supporting plate through the plate portion.

25 The invention will now be described with reference to a preferred embodiment shown in the accompanying drawings, in which:

FIGURE 1 shows on a scale of 2:1 a front view of the middle portion of a pair of spectacles, one of the pads having been removed;

5 FIGURE 2 is a rear view of Figure 1, likewise on a scale of 2:1;

FIGURE 3 is a view according to the arrow A in Figure 1;

FIGURE 4 is a view according to the arrow B in Figure 1;

10 FIGURE 5 is a view similar to the arrow C in Figure 2 but flush with the main plate;

FIGURE 6 is a view of the pad according to the arrow D in Figure 7;

15 FIGURE 7 is a view of the pad according to the arrow E in Figure 6,

FIGURES 3 to 7 all being on a scale of 3:1.

A pair of synthetic plastics spectacles now shown in greater detail has two lens rims 11 which are connected to each other to form one piece, the
20 connecting member being a bridge 12. The lens rims 11 have grooves 13 of V-shaped cross-section into which the bevels 14 of lenses 16 are gripped. Moulded rearwardly outwards below the bridge 12 are nose flank supporting plates 17, 18. The main planes of these
25 supporting plates open outwardly to the rear. Their rear rim 19, 21 extends in accordance with a stretched arc, as shown in Figures 3 and 4. The greatest

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thickness of the supporting plates 17, 18 is about 1.4 mm. Machined into the inner face 22 is a recess 23, the plane of which is about 0.5 mm deeper than the surface 22, resulting in just as deep a mounting rim 24 which, according to Figure 3, follows a substantially kidney-shaped pattern, having in the region of its greatest curvature a small and constant distance from the rim 19. The (according to Figure 3) left-hand zone of the mount rim 24 lies partially above the lens groove 13. The recess 23 is in itself planar and is of the same depth throughout. In the middle of the recess 23 is a continuous elongated hole 26, the longer sides of which are parallel to each other while the shorter sides connect through a radius.

A pad 27 is of silicon rubber and has a Shore D hardness of from 10 - 30, preferably 17. It has a plate portion 28, a stem 29 and a locking plate 31. The plate portion 28 is 2 mm thick and, as a comparison between Figure 3 and Figure 7 reveals, its outer rim 32 follows the mount rim 24. With regard to its central plane 33, the pad 27 is symmetrical so that it can be used both on the supporting plate 17 and also on the supporting plate 18. The front 34 of the plate portion 28 projects with almost the total thickness of the plate portion 28 beyond the face 22. The rear flat face 36 of the plate portion 28 has its entire surface resting on the flat bottom of the recess 23. The

middle zone of the rear face 36 merges into the stem 29 which has the same cross-sectional form as the elongated hole 26. The stem 29 completely fills the elongated hole 26, with no clearance. The stem 29 is, however, a little shorter than the elongated hole 26 is deep. Also the stem 29 is symmetrical to the central plane 33. The stem 29 merges into the locking plate 31 which projects all round a little beyond the plan of the stem 29, but on its narrow sides 37, 38 farther than on its long sides 39, 41. The thus formed inner rim 4 of the locking plate 31 rests on the outer surface 42 of the supporting plates 17, 18.

CLAIMS:

1. A spectacle frame comprising lens rims (11) having respective lens receiving grooves (13) in the inner surfaces thereof, a bridge (12) connecting the lens rims, rigid nose flank supporting plates (17, 18) on the rims respectively, each plate extending from a position below the bridge away from the bridge in the direction of the periphery of the rim and also rearwardly from the rim, each plate being provided with a hole (26) which passes therethrough, and pads (27) of a material of Shore D hardness of 10 to 30 provided respectively on said supporting plates, each pad having a plate portion (28) for engaging the nose, a stem (29) which passes through the hole and a locking plate (31) engaging the surface of the supporting plate remote from the nose engaging the side of the pad.

2. A spectacle frame as claimed in Claim 1, wherein the hole (26) is an elongated hole.

3. A spectacle frame according to Claim 2, wherein the elongated hole (26) extends in the peripheral direction of the rim (11).

4. A spectacle frame as claimed in Claim 1, wherein a recess (23) is formed around said hole on the nose engaging side of said supporting plate, which recess engages over a minor portion of the thickness of the plate portion (28).

5. A spectacle frame as claimed in any one of Claims 1-4, wherein the surface (36) of the ~~plate~~ portion (28) engaging the supporting plate is flat and the area (23) of the supporting plate (17, 18) engaged by the plate portion is likewise flat.

6. A spectacle frame as claimed in Claim 1, wherein the left-hand and right-hand pads (27) are identically shaped.

7. A spectacle frame as claimed in any one of claims 2 - 6, wherein the stem (29) has an elongated cross-section complementary to the elongated hole (26).

8. A spectacle frame as claimed in any one of Claims 1 - 7, wherein the stem (29) is a little shorter than the depth of the hole (26).

9. A spectacle frame as claimed in Claim 1, wherein the locking plate (31) has its inside face (40) engaging just over the marginal zone of the hole (26).

10. A spectacle frame as claimed in Claim 9, wherein the locking plate (31) engages more over its two narrow sides (37, 38) than on its long sides (41).

11. A spectacle frame as claimed in any one of Claims 1 - 10, wherein the pads (27) are each formed in one piece and are homogeneous.

12. A spectacle frame substantially as herein described with reference to Figures 1 - 7 of the accompanying drawings.
