

ing on such pistons facilitates the movement of the fluids through the channels, reservoirs, and lenticule. The pistons also prevent too great a shift in the fluids that could occur, for example, when the person in whom the lens has been implanted lies on his side. The pistons may be any shape, such as dumbbell, rod, or ball-shaped, that expedites the movement of the fluids through the channels. Plastic pistons of about 0.25 mm in cross sectional diameter and resting at the fluid interface are preferred.

It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from its scope or spirit. Thus, it is intended that the present invention cover the modifications and variations of this invention provided that they came within the scope of the appended claims and their equivalents.

What is claimed is:

- 1. A multifocus intraocular lens comprising:
 - a body of transparent material suitable for permanent placement in the eye;
 - a hollow lenticule in said body, said lenticule being positioned for encompassing the light path between the pupil of the eye and the retina;
 - a pair of fluid reservoirs in said body, one above and one below said lenticule and in fluid communication therewith;
 - channel means interconnecting said reservoirs, said channel means bypassing said light path and said lenticule, said channel means, lenticule, and reservoirs forming a closed system within said body; and
 - transparent fluid means filling said closed system for changing the index of refraction of said lens upon predetermined changes in the inclination of said light path with respect to the horizontal, wherein said fluid means comprises at least two immiscible liquids with different refractive indices.
- 2. The lens as recited in claim 1 wherein said immiscible liquids with different refractive indices have a stable plane of separation, said plane lying just below the light path in the horizontal position thereof.
- 3. The lens as recited in claim 1 wherein one of said liquids is water and the other of said liquids is silicone oil.
- 4. A multifocus intraocular lens comprising:

- a body of transparent material suitable for permanent placement in the eye;
 - a hollow lenticule in said body, said lenticule being positioned for encompassing the light path between the pupil of the eye and the retina;
 - a pair of fluid reservoirs in said body, one above and one below said lenticule and in fluid communication therewith;
 - channel means interconnecting said reservoirs, said channel means bypassing said light path and said lenticule, said channel means, lenticule, and reservoirs forming a closed system within said body;
 - pistons located in said channel means; and
 - transparent fluid means filling said closed system for changing the index of refraction of said lens upon predetermined changes in the inclination of said light path with respect to the horizontal.
- 5. The lens as recited in claim 4 wherein said fluid means includes two immiscible materials with different refractive indices and wherein said pistons float at the interface of said fluids.
 - 6. A multifocus intraocular lens comprising:
 - a body of transparent material suitable for permanent placement in the eye;
 - a hollow lenticule in said body, said lenticule being positioned for encompassing the light path between the pupil of the eye and the retina;
 - a pair of fluid reservoirs in said body, one above and one below said lenticule and in fluid communication therewith;
 - channel means interconnecting said reservoirs, said channel means bypassing said light path and said lenticule, said channel means, lenticule, and reservoirs forming a closed system within said body; and
 - transparent fluid means filling said closed system for changing the index of refraction of said lens upon predetermined changes in the inclination of said light path with respect to the horizontal, wherein said fluid means includes a transparent material of different density gradients.
 - 7. The lens as recited in claim 6 wherein said transparent material is water with a salt dissolved therein.
 - 8. The lens as recited in claim 7 wherein said salt is sodium chloride.
 - 9. The lens as recited in claim 6 wherein said transparent material is water with sucrose dissolved therein.

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