

ABSTRACT**TITLE:**

Ophthalmic surgical apparatus

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This invention relates to an ophthalmic surgical apparatus comprising a laser source (1) suitable for emitting a beam of laser pulses (8) with a duration of one picosecond to one nanosecond; an optical focussing system (10) for focussing said beam of laser pulses on a focal point (6); and a system for moving the beam of laser pulses configured to move said focal point (6) along a predetermined path.

According to the invention, the laser source (1) generates a beam of picosecond to nanosecond laser pulses (8), focussed next to a surface (25) of the anterior segment of the eye (4), the focal point (6) being located at a distance d' other than zero from an optical axis (21) of symmetry of the anterior segment of the eye (4), the system (30) for moving the beam of laser pulses includes a single degree of freedom of rotation about an axis of rotation (36) so as to move said focal point (6) along a curved path (16) located in an annular area about the optical axis (21) of symmetry of the anterior segment of the eye (4); and the ophthalmic surgical apparatus is configured with a numerical aperture so as to limit the geometric optical aberrations at the focal point (6) and on the entire curved path (16) in said annular area about the optical axis (21) of symmetry of the anterior segment of the eye (4).

Figure 2