



(22) Date de dépôt/Filing Date: 1996/09/27

(41) Mise à la disp. pub./Open to Public Insp.: 1997/03/30

(45) Date de délivrance/Issue Date: 2007/07/03

(30) Priorité/Priority: 1995/09/29 (US08/536,158)

(51) Cl.Int./Int.Cl. *G01M 11/00* (2006.01),
G01B 11/255 (2006.01), *G01M 11/02* (2006.01)

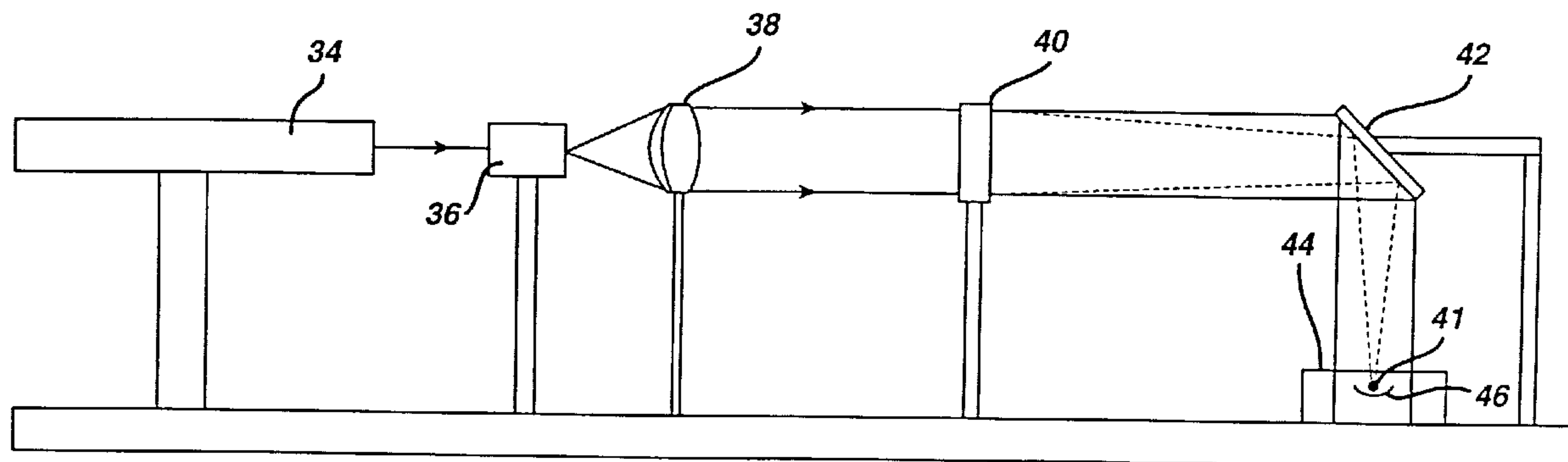
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(54) Titre : MESURE DES PARAMETRES D'UN VERRE DE CONTACT PAR SECTIONNEMENT OPTIQUE

(54) Title: LENS PARAMETER MEASUREMENT USING OPTICAL SECTIONING



(57) Abrégé/Abstract:

An arrangement for measuring desired parameters of a contact lens by optical sectioning which comprises a support fixture on which a contact lens is positioned. The support fixture includes a container in which a pedestal is positioned, and the container is filled with a saline solution. The contact lens is placed on the pedestal completely immersed in the saline solution. A line of light is generated and directed by imaging and shaping optical elements over the edge of the container and through a selected diameter of the contact lens. An imaging camera detects and image of the light scattered at the surfaces of the contact lens at the selected diameter, which is captured by a frame grabber and is digitally stored for subsequent image processing and determination of the desired parameters of the contact lens. The analysis provides at least four basic parameters of the contact lens including the diameter (D), front radius of curvature (FC), back radius of curvature (BC), and center thickness (CT), and can also provide the lenticular curve radius, the peripheral curve radius, the sagittal height, aspherical forms and deviations of the several measured curvatures, and the power of the lens.

ABSTRACT OF THE DISCLOSURE

An arrangement for measuring desired parameters of a contact lens by optical sectioning which comprises a support fixture on which a contact lens is positioned. The support fixture includes a container in which a pedestal is positioned, and the container is filled with a saline solution. The contact lens is placed on the pedestal completely immersed in the saline solution. A line of light is generated and directed by imaging and shaping optical elements over the edge of the container and through a selected diameter of the contact lens. An imaging camera detects and image of the light scattered at the surfaces of the contact lens at the selected diameter, which is captured by a frame grabber and is digitally stored for subsequent image processing and determination of the desired parameters of the contact lens. The analysis provides at least four basic parameters of the contact lens including the diameter (D), front radius of curvature (FC), back radius of curvature (BC), and center thickness (CT), and can also provide the lenticular curve radius, the peripheral curve radius, the sagittal height, aspherical forms and deviations of the several measured curvatures, and the power of the lens.

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