ПАТЕНТЫ/PATENTS

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CA3152707 (A1) — 2021-04-15

ELECTION OF INTRAOCULAR LENS BASED ON A PLURALITY OF MACHINE LEARNING MODELS

A method and system for selecting an intraocular lens, with a controller having a processor and tangible, non-transitory memory. A plurality of machine learning models is selectively executable by the controller. The controller is configured to receive at least one pre-operative image of the eye and extract, via a first input machine learning model, a first set of data. The controller is configured to receive multiple biometric parameters of the eye and extract, via a second input machine learning model, a second set of data. The first set of data and the second set of data are combined to produce a mixed set of data. The controller is configured to generate, via an output machine learning model, at least one output factor based on the mixed set of data. An intraocular lens is selected based in part on the at least one output factor.

CA3152443 (A1) — 2021-05-14

IRRIGATION SLEEVE FOR OPHTHALMIC PROCEDURES

Devices and methods are disclosed for improved irrigation sleeves for ophthalmic instruments to prevent or reduce the likelihood of the irrigation sleeve twisting and/or buckling upon inserting the irrigation sleeve into the eye. In some embodiments, an irrigation sleeve comprises a side opening for irrigation having an elongated shape, wherein the elongated shape is longer in a direction parallel to the longitudinal axis of the distal tube of the irrigation sleeve than in a direction around a circumference of the distal tube of the irrigation sleeve. In some embodiments, an irrigation sleeve comprises at least one rib on an internal surface of the distal end of the irrigation sleeve. In some embodiments, the irrigation sleeve has been subjected to one or more manufacturing steps adapted to stiffen the irrigation sleeve, such as being coated with a stiffening coating or being treated by being exposed to gamma irradiation.

PL3574897 (T3) — 2022-05-09

EXTENDED RELEASE FORMULATION COMPRISING POLYMER PROTEIN MICROPARTICLES FOR USE IN THE VITREOUS OF THE EYE FOR TREATING VASCULAR EYE DISORDERS

Microparticles containing a core of therapeutic protein and a cortex of a biocompatible and biodegradable polymer, and methods of making and using the microparticles are provided. The extended release of a therapeutic protein from the microparticles in a physiological solution is demonstrated over an extended period of time.

WO2022097731 (A1) — 2022-05-12

OPHTHALMIC LIQUID PREPARATION

The objective of the present invention is to reduce the cellular cytotoxicity of an algefacient and/or strengthen the cooling sensation of the algefacient. It was discovered that the cellular toxicity of menthol, which is the algefacient, was reduced and the cooling sensation of menthol was strengthened by blending brimonidine into an ophthalmic preparation containing menthol, which is the algefacient. Furthermore, an ophthalmic composition into which brimonidine and an algefacient selected from the group consisting of bergamot oil, geraniol, and borneol have been blended similarly exhibited a reduction in the cellular cytotoxicity, induced by the algefacient, as a result of blending in the brimonidine. On the basis of the above results, the present invention provides a ophthalmic preparation containing an algefacient and brimonidine.

WO2022096032 (A1) — 2022-05-12

AUTOMATIC AND MANUAL ZOOM MECHANISM FOR SLIT LAMP-BASED DRY EYE INSPECTION INSTRUMENT

An automatic and manual zoom mechanism for a slit lamp-based dry eye inspection instrument, comprising an optical body zoom drum seat (304), an optical body zoom drum (306), zoom hand wheels (301, 309), and an electric drive mechanism. The optical body zoom drum (306) is mounted in the optical body zoom drum seat (304), and two ends of the optical body zoom drum (306) are respectively connected to the zoom hand wheels (301, 309) by means of a connecting shaft. The electric drive mechanism is arranged on the optical body zoom drum base (304), and the electric drive mechanism is used for driving the optical body zoom drum (306) to rotate. The effects of such a zoom mechanism are: first, the structure is simple and implementation of a Galileo optical system slit lamp and an automatic zoom function of a slit lamp-type dry eye inspection instrument is facilitated; second, at the same time that the automatic zoom function of the Galileo optical system slit lamp is implemented, and a manual zoom function is also preserved; and third, implementation of intelligent operation and remote operation of the whole slit lamp and the slit lamp-type dry eye inspection instrument is facilitated.

WO2022097620 (A1) — 2022-05-12

OPHTHALMIC INFORMATION PROCESSING DEVICE, OPHTHALMIC DEVICE, OPHTHALMIC INFORMATION PROCESSING METHOD, AND PROGRAM

This ophthalmic information processing device includes an acquisition unit and a disease inference unit. The acquisition unit acquires a plurality of images, of an eye of a patient, that are different from each other in cross section direction. The disease inference unit, by using a plurality of trained models obtained by performing machine learning for the respective types of a plurality of images, outputs inference information for inferring whether or not an eye of a patient is a glaucomatous eye, from the plurality of images.

KR20220051035 (A) — 2022-04-25

THERAPEUTIC EYE TREATMENT WITH GASES

An apparatus (100) to maintain an environment over an anterior surface of a patient eye can include an enclosure (110) sized and shaped to be seated about the patient eye to form a cavity (112) within the enclosure. The enclosure can be configured to contain a fluid other than ambient air in contact with the patient eye. The apparatus can include a fluid regulator (1209) in communication with the enclosure, where the fluid regulator can be configured to regulate the composition of the fluid contained within the enclosure.

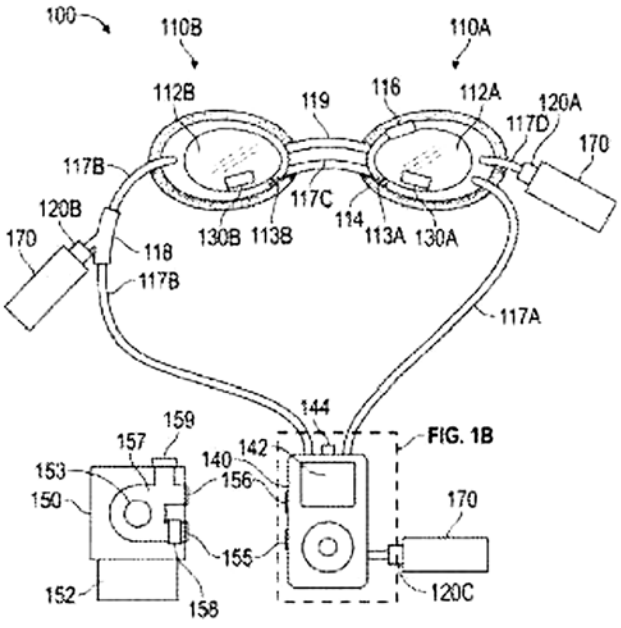

FIG. 1A

WO2022097621 (A1) — 2022-05-12

OPHTHALMIC INFORMATION PROCESSING DEVICE, OPHTHALMIC DEVICE, OPHTHALMIC INFORMATION PROCESSING METHOD, AND PROGRAM

This ophthalmic information processing device includes a determiner and a detector. The determiner uses a disc hemorrhage determination model so as to determine the presence/absence of disc hemorrhaging in a frontal image of the fundus of an eye being examined, said model being obtained by machine learning using, as first teaching data, a plurality of fundus frontal images labeled to indicate the presence/absence of disc hemorrhaging. The detector uses a disc hemorrhage region detection model so as to detect a disc hemorrhage region depicted in a frontal image determined by the determiner as having disc hemorrhaging, said model being obtained by machine learning using, as second teaching data, a plurality of pairs of image groups in which a frontal image of a fundus and a disc hemorrhage region image that indicates a disc hemorrhage region depicted in the frontal image constitute a pair.

AU2022202596 (A1) — 2022-05-12

MODULAR INTRAOCULAR LENS DESIGNS, DEVICES AND METHODS

Modular IOL systems including a base and a lens, wherein the lens includes fixed and actuatable tabs for connection to the base. The modular IOL allows for the lens to be adjusted or exchanged while leaving the base in place, either intra-operatively or post operatively. Drug delivery capabilities and/or sensing capabilities may be incorporated into the base. Inserter devices may be used to facilitate placement of the base and the lens of the modular IOL sequentially or simultaneously into the eye.

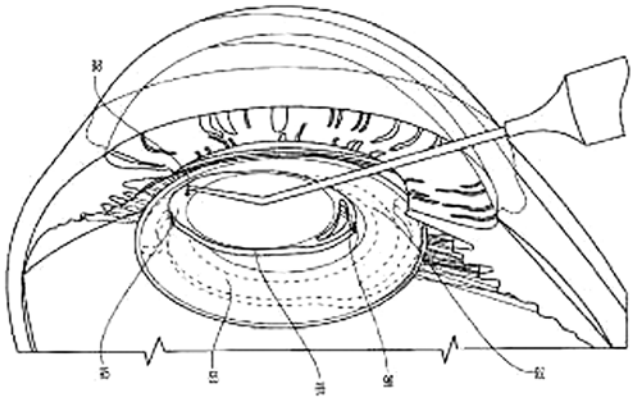

Fig. 4F