

Claims

- 5 1. A pre-load unit (P) for inserting lenses into the eye of a human or animal, comprising
- i) a housing (2) with means (12) for fastening the unit to a grip piece (7), preferably in a manner secure against rotation,
- 10 ii) a lens-receiving part (11) arranged on or in the housing (2) and comprising a section that protrudes from the housing (2) and that has at least two, preferably two, separate leaf-like units (3) which, at least at their ends directed away from the housing (2), are in releasable contact with each other and there form a chamber (14) for storing an optical lens (L),
- 15 iii) a slide (15), which is arranged movably in the interior of the housing (2) and can be moved between the leaf-like units (3) of the lens-receiving unit (11).
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2. The pre-load unit (P) as claimed in claim 1, **characterized in that** the two leaf-like units (3) each have a hole (4), which holes (4) are arranged such that they lie directly over each other and form an opening through the center of the chamber (14) for storing an optical lens (L).
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3. The pre-load unit (P) as claimed in claim 1 or 2, **characterized in that** the boundary of the chamber for storing an optical lens (L) is formed at least partially by wave-shaped sections (13a-13d), which are present on both leaf-like units (3) and are arranged such that the sections of one leaf-like unit (3) mesh with the corresponding sections of the other leaf-like unit (3).
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4. The pre-load unit (P) as claimed in one of claims 1 through 3, **characterized in that** at least one leaf-like unit (3) has a further hole (5), which is arranged above the boundary of the chamber (14) for storing an optical lens (L).
5. A kit comprising a storage unit (16) and a pre-load unit (P) as claimed in one of claims 1 through 4 in the interior of the storage unit (16), wherein the storage unit (16) is made of a watertight material and can be closed in a watertight manner with a stopper (17).
6. The kit as claimed in claim 5, **characterized in that** the interior of the storage unit (16) is filled with physiological saline solution.
7. The kit as claimed in claim 5 or 6, **characterized in that** the pre-load unit (P) is stored with an optical lens (L), preferably an intracorneal lens.
8. The kit as claimed in one of claims 5 through 7, **characterized in that** a grip piece (7) for connection to the pre-load unit (P) is additionally provided.
9. An applicator (1) comprising a pre-load unit (P) as claimed in one of claims 1 through 4 and a grip piece (7), wherein the pre-load unit (P) and the grip piece (7) are connected to each other in such a way that the pre-load unit (P) can be moved inside the grip piece (7).
10. The applicator (1) as claimed in claim 9, **characterized in that** control elements (8, 9) for moving the slide (15) and the rest of the pre-load unit (P) are provided on the grip piece (7).

11. The applicator (1) as claimed in claim 10,
characterized in that a first control element (8)
is provided for moving the slide (15) and a second
control element (9) is provided for moving the
rest of the pre-load unit (P), wherein the second
control element (9) can only be operated when the
first control element (8) is located in a position
in which the slide (15) moved by it is driven out
to the maximum extent from the housing of the pre-
load unit (P).
12. The applicator (1) as claimed in claim 9,
characterized in that a control element (8) for
moving the slide (15) is provided on the grip
piece (7).
13. The applicator as claimed in one of claims 9
through 12, **characterized in that** the pre-load
unit (P) is fitted with an optical lens,
preferably an intracorneal lens.
14. A method for inserting an optical lens (L),
preferably an intracorneal lens, into the eye of a
human or animal, comprising the steps of
- i) positioning the applicator (1) as claimed in
one of claims 9 through 12 at the desired
location of the eye, preferably in a pocket
in the human cornea, such that the center of
the optical lens (L) contained in the
applicator (1) lies on the visual axis of the
eye;
 - ii) pushing the slide forward by means of a first
control element (8) on the grip piece (7),
until the slide (15) comes into contact with
the lens (L) without moving the latter,
wherein at the same time the leaf-like units
(3) of the lens-receiving part (11) are
spread apart from each other;

5 iii) withdrawing the rest of the pre-load unit (P) from the eye by a defined distance by means of a second control element (9) on the grip piece (7), with simultaneous fixing of the slide (15), as a result of which the lens (L) is released from the applicator (1).

10 15. The method as claimed in claim 14, **characterized in that** the positioning of the applicator (1) in step a) is achieved by the lens (L) being positioned by means of the holes (4), which are arranged in the leaf-like units (3) in such a way that the holes (4) lie directly over each other and form an opening through the center of the
15 chamber (14) for storing an optical lens (L).

20 16. Use of a pre-load unit (P) as claimed in one of claims 1 through 4 and of an applicator (1) as claimed in one of claims 9 through 13 for inserting an optical lens (L), preferably an intracorneal lens, into the eye of a human or animal, preferably into a pocket in the cornea of a human or animal.

25 17. Use of a pre-load unit (P) as claimed in one of claims 1 through 4 and of an applicator (1) as claimed in one of claims 9 through 13 for inserting a donor cornea into the eye of a human or animal.

Claims

1. A method for inserting an optical lens (L),
5 preferably an intracorneal lens, into the eye of a human or animal, comprising the steps of
- a) positioning the applicator (1) comprising a pre-load unit (P) for inserting lenses into the eye of a human or animal, comprising
- 10 i) a housing (2) with means (12) for fastening the unit to a grip piece (7), preferably in a manner secure against rotation,
- ii) a lens-receiving part (11) arranged on or in the housing (2) and comprising a section that protrudes from the housing (2) and that has
- 15 at least two, preferably two, separate leaf-like units (3) which, at least at their ends directed away from the housing (2), are in releasable contact with each other and there form a chamber (14) for storing an optical lens (L),
- 20 iii) a slide (15), which is arranged movably in the interior of the housing (2) and can be moved between the leaf-like units (3) of the lens-receiving unit (11);
- 25 and a grip piece (7), wherein the pre-load unit (P) and the grip piece (7) are connected to each other in such a way that the pre-load unit (P) can be moved inside the grip piece (7);
- 30 at the desired location of the eye, preferably in a pocket in the human cornea, such that the center of the optical lens (L) contained in the applicator (1) lies on the visual axis of the eye;
- 35 b) pushing the slide forward by means of a first control element (8) on the grip piece (7), until the slide (15) comes into contact with the lens (L) without moving the latter,

wherein at the same time the leaf-like units (3) of the lens-receiving part (11) are spread apart from each other;

c) withdrawing the rest of the pre-load unit (P) from the eye by a defined distance by means of a second control element (9) on the grip piece (7), with simultaneous fixing of the slide (15), as a result of which the lens (L) is released from the applicator (1).

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2. The method as claimed in claim 1, **characterized in that** the positioning of the applicator (1) in step a) is achieved by the lens (L) being positioned by means of the holes (4), which are arranged in the leaf-like units (3) in such a way that the holes (4) lie directly over each other and form an opening through the center of the chamber (14) for storing an optical lens (L).

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20 3. Use of a pre-load unit (P) for inserting lenses into the eye of a human or animal, comprising

i) a housing (2) with means (12) for fastening the unit to a grip piece (7), preferably in a manner secure against rotation,

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ii) a lens-receiving part (11) arranged on or in the housing (2) and comprising a section that protrudes from the housing (2) and that has at least two, preferably two, separate leaf-like units (3) which, at least at their ends directed away from the housing (2), are in releasable contact with each other and there form a chamber (14) for storing an optical lens (L),

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iii) a slide (15), which is arranged movably in the interior of the housing (2) and can be moved between the leaf-like units (3) of the lens-receiving unit (11); and of an applicator (1) comprising a pre-load unit (P) for inserting

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lenses into the eye of a human or animal, comprising

- 5 i) a housing (2) with means (12) for fastening the unit to a grip piece (7), preferably in a manner secure against rotation,
- 10 ii) a lens-receiving part (11) arranged on or in the housing (2) and comprising a section that protrudes from the housing (2) and that has at least two, preferably two, separate leaf-like units (3) which, at least at their ends directed away from the housing (2), are in releasable contact with each other and there form a chamber (14) for storing an optical lens (L),
- 15 iii) a slide (15), which is arranged movably in the interior of the housing (2) and can be moved between the leaf-like units (3) of the lens-receiving unit (11);
- 20 and a grip piece (7), wherein the pre-load unit (P) and the grip piece (7) are connected to each other in such a way that the pre-load unit (P) can be moved inside the grip piece (7); for inserting an optical lens (L), preferably an intracorneal lens, into the eye of a human or animal,
- 25 preferably into a pocket in the cornea of a human or animal.

4. Use of a pre-load unit (P) as claimed in claim 3 and of an applicator (1) as claimed in claim 3 for
- 30 inserting a donor cornea into the eye of a human or animal.