Patent claims

1. A positioning apparatus (100) for positioning a light-guiding fiber (206) in a calibration port (208) of a medical apparatus (202) comprising at least one light source (204) for the light-guiding fiber (206), wherein the positioning apparatus (100) comprises an elongate body (102) with two end faces (110, 112) and at least one side face (116), wherein a channel (104) for receiving the light-guiding fiber (206) is formed in the body (102), said channel extending along a longitudinal axis of the body (102) proceeding from a first end face (110), wherein the body (102), at least in one portion, consists of an opaque material in the region of the channel (104) and/or is coated with an opaque material and said body has at least one cutout (113, 118), which extends from a side face (116) and/or a second end face (112) of the body (102) to the channel (104) such that radiation emitted by the light-guiding fiber (206) can only emerge from the positioning apparatus (100) in unimpeded fashion through the at least one cutout (113, 118), **characterized in that** the body (102) has at least one elongate, lateral cutout (118), wherein the lateral cutout (118) extends over the length of a part of the channel (104) in the longitudinal direction of the body (102) and extends from the side face (116) of the body (102) to the channel (104) in the radial direction.

2. The positioning apparatus (100) as claimed in claim 1, **characterized in that** the body (102) has at least two elongate, lateral cutouts (118), wherein the lateral cutouts (118) are respectively disposed pair-by-pair on opposite sides of the channel (104).

3. The positioning apparatus (100) as claimed in claim 1 or 2, **characterized in that** the cross section of the lateral cutout (118) increases from the channel (104) to the side face (116) of the body (102).

4. The positioning apparatus (100) as claimed in any one of claims 1 to 3, **characterized in that** the channel (104) does not penetrate the second end face (112) of the body (102).

5. The positioning apparatus (100) as claimed in any one of claims 1 to 4, **characterized in that** the channel (104) extends beyond the length of the lateral cutout (118) in the longitudinal direction of the body (102).

6. The positioning apparatus (100) as claimed in claim 1, **characterized in that** the body (102) has a frontal cutout (113) on the second end face (112) of the body (102), wherein the minimum diameter of the frontal cutout (113) is smaller than the diameter of the light-guiding fiber (206).

7. The positioning apparatus (100) as claimed in claim 6, **characterized in that** the diameter of the frontal cutout (113) increases in an outwardly projecting direction from second end face (112) of the body (102).

8. The positioning apparatus (100) as claimed in any one of the preceding claims, **characterized in that** the surface of the body (102) is rotationally symmetric about the longitudinal axis of the body (102), wherein the at least one side face of the body (102) is a lateral face (116) of a solid of revolution.

9. The positioning apparatus (100) as claimed in claim 8, **characterized in that** the solid of revolution has at least two portions (106, 108) in the longitudinal direction, wherein a first portion (106), which extends from the first end face (110), has a greater radius than the remaining portions (108).

10. The positioning apparatus (100) as claimed in any one of the preceding claims, **characterized in that** the positioning apparatus (100) comprises at least one alignment element (114), the latter being embodied to set the alignment of the positioning apparatus (100) in the calibration port (208).

11. The positioning apparatus (100) as claimed in claim 10, **characterized in that** the alignment element (114) is disposed on the second end face (112).

12. The positioning apparatus (100) as claimed in any one of the preceding claims, **characterized in that** the body (102), at least in one portion, consists of a sterilizable material and/or is coated with a sterilizable material.

13. The positioning apparatus (100) as claimed in claim 12, **characterized in that** the material is a plastic, in particular polyoxymethylene.

14. The positioning apparatus (100) as claimed in any one of the preceding claims, **characterized in that** the first end side (110) has a cutout that tapers in the longitudinal

direction of the body (102) and that is centered around the channel (104), said cutout being embodied to guide the fiber (206) in the direction of the channel (104).

15. The positioning apparatus (100) as claimed in any one of the preceding claims, **characterized in that** the positioning apparatus (100) is an injection-molded part.

16. A system comprising at least one medical apparatus (202) comprising at least one light source (204), at least one light-guiding fiber (206) and at least one positioning apparatus (100) as claimed in any one of the preceding claims, wherein the light-guiding fiber (206) is connectable to the light source (204) of the medical apparatus (202) in such a way that at least a portion of laser radiation with a defined radiant flux generated by the light source (204) is coupled into the light-guiding fiber (206), wherein the medical apparatus (202) comprises a calibration port (208), wherein the calibration port (208) comprises sensor means that are embodied to ascertain the radiant flux of the laser radiation emerging from the light-guiding fiber (206), wherein the positioning apparatus (100) can be inserted into the at least one calibration port (208) in such a way that, by way of the subsequent insertion of the at least one light-guiding fiber (206) into the positioning apparatus (100), the light-guiding fiber (206) is positioned relative to the sensor means in such a way that the radiant flux of the laser radiation emerging from the light-guiding fiber (206) can be ascertained by the sensor means.

17. A method for calibrating the light source (204) of a system as claimed in claim 16, including the following steps:
    - connecting the light-guiding fiber (206) to the light source (204),
    - inserting the positioning apparatus (100) into the calibration port (208),
    - inserting the light-guiding fiber (206) into the positioning apparatus (100),
    - coupling laser radiation with a defined radiant flux into the light-guiding fiber (206) by way of the light source (204),
    - ascertaining the radiant flux of the laser radiation emerging from the light-guiding fiber (206) within the calibration port (208) by means of the sensor means of the calibration port (208),
    - comparing the ascertained radiant flux emerging from the light-guiding fiber (206) with the radiant flux coupled into the light-guiding fiber (206), and

- adapting the radiant flux coupled into the light-guiding fiber (206) such that the radiant flux emerging from the light-guiding fiber (206) lies within a defined value range.