

CLAIMS

1. An instrument holder for aligning an instrument for accessing a target within a subject, comprising:

a first layer;

a second layer;

an instrument guide having an entry point and an exit point, the instrument guide connecting between the first layer and the second layer and configured to guide the instrument from the entry point to the exit point;

wherein the first layer and the second layer include first layer markings and second layer markings that are visible by an imaging system; and

wherein the first layer markings are designed to form a predefined pattern with the second layer markings relative to the target as viewed on a display of the imaging system, when aligning the first layer and the second layer so that the instrument will collide with the target.

wherein the first layer markings include a first geometric shape comprising one or more pairs of arrows or arrowheads and the second layer markings include a second geometric shape distinct from the first geometric shape, the second geometric shape comprising two lines in the shape of a cross with the exit point at the center, and in the predefined pattern, the one or more pairs of arrows or arrow heads point at the lines of the second geometric shape such that each line is situated between the one or more pairs of arrows or arrow heads.

2. The instrument holder according to claim 1, wherein in the predefined pattern, there is a gap between the one or more pairs of arrows or arrow heads and the lines of the second geometric shape.
3. The instrument holder according to claim 1, wherein the second geometric shape comprises two or more sets of lines representing linear graduations of a unit of measure.

4. The instrument holder according to claim 1, further comprising a protuberance extending from the second layer.
5. The instrument holder according to claim 1, wherein the instrument is a hollow needle.
6. The instrument holder according to claim 1, wherein the instrument is an elongated tool.
7. The instrument holder according to claim 1, wherein the instrument holder includes handles to fit a positioning arm.
8. The instrument holder according to claim 7, wherein the handles are configured to enable the instrument holder to rotate relative to the positioning arm.
9. The instrument holder according to claim 1, wherein the first layer or the second layer include additional markings, which are not part of the predefined pattern to identify the first layer or the second layer by a user when aligning.
10. The instrument holder according to claim 1, wherein the target is located percutaneously.
11. The instrument holder according to claim 1, wherein the instrument holder is transparent to the imaging system.
12. The instrument holder according to claim 1, wherein the instrument guide is perpendicular to the first layer and the second layer.
13. The instrument holder according to claim 1, wherein the instrument guide forms a preselected angle with the first layer and with the second layer.
14. An instrument holder for aligning an instrument for accessing a target within a subject, comprising:

a first layer;

a second layer, the second layer connected to the first layer by a column;

an instrument guide having an entry point and an exit point, the instrument guide located within the second layer and configured to guide the instrument from the entry point to the exit point;

wherein the first layer includes markings forming a first layer markings that are visible by an imaging system; and

wherein the first layer markings are designed to form a predefined pattern with the instrument visible by the imaging system within the second layer relative to the target as viewed on a display of the imaging system, when aligning the first layer and the second layer so that the instrument will collide with the target.

wherein the first layer markings further comprise a first geometric shape, the first geometric shape comprising one or more pairs of arrows or arrow heads, and in the predefined pattern, the one or more pairs of arrows or arrow heads point at the instrument, which is situated between the one or more pairs of arrows or arrow heads.

15. The instrument holder according to claim 14, wherein the first geometric shape comprises lines representing linear graduations of a unit of measure and in the predefined pattern the instrument aligns at a middle line of the first geometric shape.
16. The instrument holder according to claim 14, wherein there is a gap between the one or more pairs of arrows or arrow heads and the instrument.
17. The instrument holder according to claim 14, further comprising a protuberance extending from the second layer.
18. The instrument holder according to claim 14, wherein the instrument is a hollow needle.
19. The instrument holder according to claim 14, wherein the instrument is an elongated tool.

20. The instrument holder according to claim 14, wherein the instrument holder includes handles to fit a positioning arm.
21. The instrument holder according to claim 20, wherein the handles are configured to enable the instrument holder to rotate relative to the positioning arm.
22. The instrument holder according to claim 14, wherein the first layer or the second layer include additional markings, which are not part of the predefined pattern to identify the first layer or the second layer by a user when aligning.
23. The instrument holder according to claim 14, wherein the target is located percutaneously.
24. The instrument holder according to claim 14, wherein the instrument holder is transparent to the imaging system.