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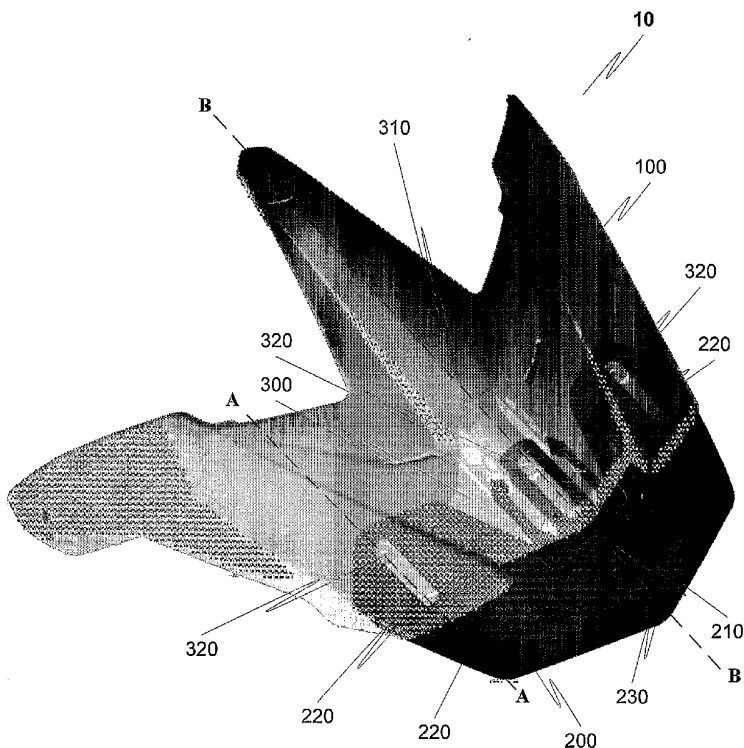
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(54) Title: VISOR SYSTEM



(57) Abstract: The extendable visor system includes an extendable visor element that can be adjusted to change the length of the visor system. The extendable visor element can be tinted, similar to sunglasses or goggles, and can quickly be adjusted with one hand. The extendable visor element can also be adjusted by a user on-the-fly to help, for example, shield a user from debris. The extendable visor system can also be retrofitted to an existing helmet, such as a motorcycle or bicycle helmet.

WO 2006/076395 A2



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Attorney Docket No. T3465-9475WO01

VISOR SYSTEMRELATED APPLICATION DATA

[0001] This application claims the benefit of and priority under 35 U.S.C. § 119(e) to U.S. Patent Application No. 60/643,105, filed January 12, 2005, entitled “Visor Extension System,” which is incorporated herein by reference in its entirety.

BACKGROUNDField of the Invention

[0002] This invention generally relates to protective wear, such as a hat, helmet, or the like, and in particular to a visor system for use with the protective wear.

[0003] In accordance with an exemplary embodiment of this invention, a visor system is provided. The visor system has an extendable element that can be extended through a plurality of positions thereby elongating the overall visor.

[0004] In accordance with an exemplary embodiment, a visor extension element is affixed to a first side of a visor. The visor extension can be frictionally slid into and out of the visor thereby providing an adjustable visor that can be substantially the same length as a visor that does not have an extendable portion or elongated as desired.

[0005] These and other features and advantages of this invention are described in, or are apparent from, the following detailed description of the exemplary embodiments.

Attorney Docket No. T3465-9475WO01

BRIEF DESCRIPTION OF THE DRAWINGS

- [0006] The present invention will be described with reference to the accompanying drawings in which like reference characters represent like parts through the several views, wherein:
- [0007] Fig. 1 is a perspective view of the visor system according to an exemplary embodiment of the present invention;
- [0008] Fig. 2 is an underside view of the visor element according to an exemplary embodiment of this invention;
- [0009] Fig. 3 is a top view of the support element according to an exemplary embodiment of this invention;
- [0010] Fig. 4 is a perspective side view of the support element according to an exemplary embodiment of this invention;
- [0011] Fig. 5 is a top view of the extendable visor element according to an exemplary embodiment of this invention;
- [0012] Fig. 6 illustrates the visor system in a first exemplary position;
- [0013] Fig. 7 illustrates the visor system in a second exemplary position;
- [0014] Fig. 8 illustrates the visor system in a third exemplary position;
- [0015] Fig. 9 is a perspective exploded cross-sectional view taken along line A-A of Fig. 1; and
- [0016] Fig. 10 is a perspective cross-sectional view taken along line B-B of Fig. 1.

DETAILED DESCRIPTION

- [0017] The present invention is described in relation to exemplary embodiments shown in the figures. It should be appreciated that the embodiments are exemplary

Attorney Docket No. T3465-9475WO01

and other configurations, sizes, and arrangements of the invention are apparent to those of ordinary skill in the applicable art. Several of the exemplary figures provide specific dimensional notations and part orientations. These values and layouts are for illustration purposes. Other sizes and orientations of the elements may be used.

[0018] Moreover, while the visor system can be made of plastic, the various elements of the visor system can be made from any one or more of plastics, metals, composites, alloys, carbon fiber, fiberglass, Kevlar®, or the like. Additionally, each of the various visor system elements can be any one or more of colored, transparent, tinted, or the like.

[0019] Furthermore, while the extendable visor element is shown with a particular shape that roughly corresponds to that of the visor element, it should be appreciated that the extendable visor element, support element and visor element can be any shape which may or may not complement one other and may or may not be suited to a particular helmet.

[0020] Fig. 1 illustrates the exemplary visor system 10 according to this invention. The visor system 10 comprises a visor element 100, an extendable visor element 200 and a support element 300. The visor element 100 can be connected to headgear, such as a helmet, hat, or the like, in the traditional manner.

[0021] In Fig. 1, the extendable visor element 200 operates in a position between the support element 300 and the visor element 100. The extendable visor element 200

Attorney Docket No. T3465-9475WO01

slides in a back and forth direction which is governed by slots 220 into and out of the visor system 10. The holder assemblies 210 and 310 provide a friction that maintains the extendable visor element 200 in a position selected by the user. For example, the user, utilizing a thumb and forefinger, can push or pull at point 230 thereby moving the extendable visor element 200 in the visor system 10.

[0022] As illustrated in Fig. 1, the support element 300 is connected to the visor element 100 via connection points 320. The connection points 320 also limit the extendability of the extendable visor element 200 within the visor system 10 by acting as stops within the slots 220. The holder assembly 310 of the support element 300 and the holder assembly 210 of the extendable visor element 200 cooperate with one another as previously discussed. As will be discussed in greater detail herein below, different configurations are available for the holder assemblies with the illustrated exemplary embodiment having a 3-position extendable visor element 200. As will be appreciated from the following discussion, other configurations are possible including more or less positions and/or a holder assembly that is infinitely adjustable.

[0023] Fig. 2 illustrates in greater detail the visor element 100. The visor element 100 includes one or more portions 110 that could be used to facilitate attachment of the visor element 100 to, for example, a helmet. The visor element 100 could also be integrally formed with a helmet and used in conjunction with the visor system described herein.

[0024] The visor element 100 includes attachment points 120 where the support

Attorney Docket No. T3465-9475WO01

element 300 is secured to the visor element 100. This attachment can be done through any mechanical means including, but not limited to screwing, bonding, gluing, riveting, or the like.

[0025] Fig. 3 is an exemplary view of the support element 300. The support element 300 includes a holder assembly 310 and a plurality of attachment points 320. The support element 300 can optionally include one or more guide rails 330 to facilitate movement of the extendable visor element 200 within the visor system 10. Guide rails can also be used on other portions of the system to facilitate movement of the extendable visor element. The support element, as well as each of the other elements, can also optionally include reinforcing structures (not shown), such as reinforcing ribs, on one or more sides of the element.

[0026] The attachment points 320 can be cylindrical in shape and, as previously discussed, cooperate with the slots 220 in the extendable visor element 200. However, and in general, any cooperatively shaped configuration of the attachment points and slots will work equally well with the systems and methods of this invention.

[0027] The exemplary holder assembly 310 provides three positions in which the extendable visor element 200 rests. In a first position, a portion of the holder assembly 210 engages the holder assembly 310 at a first position 340. In a second or partially extended position, the holder assembly 210 engages the holder assembly 310 at a second position 350. In a third, fully extended position, the holder assembly 210

Attorney Docket No. T3465-9475WO01

engages the holder assembly 310 at a third position 360. The holder assembly 210 can be deformable thereby allowing the holder assembly 210 to ride over the holder assembly 310. Alternatively, or in addition, elements of the holder assembly 310 can be deformable thereby allowing the holder assembly 210 to move relative thereto. For example, one or more of the holder assemblies 210 and 310 can be made of deformable plastic or metal, or in general, any material that allows a frictionally engaging yet moveable relationship therebetween. As previously discussed, while the exemplary holder assembly 310 is shown having three positions (340, 350, and 360), it should be appreciated that any number of positions are possible. For example, the holder assembly 310 could include small teeth with the holder assembly 210 engaging the teeth. This would provide a multitude of different positions in which the extendable visor element 200 could be positioned. Additionally, the holder assembly 310 and holder assembly 210 can be configured such that there is an infinitely adjustable frictional engagement therebetween.

[0028] Fig. 4 illustrates a side perspective view of the support element 300. Highlighted in this illustration are the optional guide rails 330 and a side view of the holder mechanism 310 with the three stop positions 340, 350, and 360.

[0029] Fig. 5 illustrates an exemplary embodiment of the extendable visor element 200. The extendable visor element includes slots 220, visor front lip 205, and the holder assembly 210. The holder assembly 210 comprises arms 240 and tongue 250. The arms 240 have engagement areas 255 thereon that cooperate with and engage the holder assembly 310 of the support element 300. The engagement areas

Attorney Docket No. T3465-9475WO01

rest in the stop positions 340, 350 and 360 corresponding to the three positions of the extendable visor element 200. The extendable visor element 200 may also optionally include one or more guide rails 260 on one or more sides and/or vents (not shown).

[0030] In use, portion 230 provides the user with a convenient location to grab the extendable visor element and adjust the extension of the visor system with slots 220 restricting the movement of the extendable visor element 200 due to their engagement with attachment points 320. The exemplary design allows extension/retraction of the visor element with one hand.

[0031] The arms 240 within the holder assembly 210 flex over the bump stops 370 of the holder mechanism 310. The engagement areas 255 rest in one of the three areas 340, 350, or 360 which corresponds to the extendable visor element 200 being retracted, in an intermediate position, and fully extended, respectively.

[0032] Fig. 6 illustrates a top view of the visor system 10. In this exemplary view, the extendable visor element 200 is in a retracted position with the leading edges of the visor element 100 and extendable visor element 200 substantially aligned.

[0033] Fig. 7 outlines an exemplary embodiment of the visor system 10 in an intermediate position. More specifically, in this intermediate position, the extendable visor element 200 extends from the visor element 100 such that the leading edge 710 of the extendable visor element 200 extends beyond the visor element 100.

[0034] In Fig. 8, the extendable visor element 200 is shown in a completely extended position. In this completely extended position, the attachment points have engaged the back of slot 220 thereby preventing any further forward movement of the extendable visor element 200. If the extendable visor element is made transparent, the length of the visor element could be shortened thus increasing a user's visibility by allowing the user to see through the extendable visor element in its various extended positions.

[0035] Fig. 9 illustrates an exemplary perspective exploded cross-sectional view of the visor system taken along line A-A of Fig. 1. In this view, the extendable visor element 200 is at its fully extended position with the back portion of the slot 220 captured by the attachment point 320.

[0036] Fig. 10 is a perspective cross-sectional view taken along line B-B of Fig. 1. In Fig. 10, the extendable visor element 200 is in its fully extended position and being retained by the attachment points in their corresponding slot. In this view, the optional front attachment point 1010 can also be seen which allows attachment of the visor system 10 to, for example, a helmet. Vent holes 1020 are also illustrated as well as attachment point 1030. It should be appreciated that vents could also be positioned in other elements of the visor system 10. Similar to attachment point 1010 attachment point 1030 allows the visor system 10 to be affixed to, for example, a helmet via a fastener.

Attorney Docket No. T3465-9475WO01

[0037] The foregoing description has been provided for illustrative purposes.

Variations and modifications to the embodiments described herein may become apparent to persons of ordinary skill in the art upon studying this disclosure, without departing from the spirit and scope of the invention. The specific feature(s) illustrated herein in relation to specific embodiments can be used with any other embodiment described herein.

Claims:

1. A visor system comprising:
an extendable visor element, the extendable visor element adapted to movably and frictionally engage a support element, the extendable visor element elongating the visor system.
2. The system of claim 1, wherein the support element and a visor element cooperating to provide a space therebetween in which the extendable visor element traverses.
3. The system of claim 1, further comprising cooperating holding assemblies including a first holding assembly on the extendable visor element and a second holding assembly on the support element, the holding assemblies cooperating to hold the extendable visor element in one of a plurality of positions.
4. The system of claim 1, further comprising one or more guide rails located on one or more of the support element, the extendable visor element and a visor element.
5. The system of claim 1, wherein the extendable visor element is tinted.
6. The system of claim 1, wherein the extendable visor element is clear.

Attorney Docket No. T3465-9475WO01

7. The system of claim 1 mounted on a helmet.
8. The system of claim 1, further comprising a plurality of slots in the extendable visor element, the slots regulating movement of the extendable visor element.
9. The system of claim 7, further comprising a plurality of attachment points that secure the support element to the visor element, wherein one attachment point is present in each of the plurality of slots.
10. The system of claim 1, wherein the extendable visor element locks in a plurality of positions.
11. The system of claim 1, wherein one or more of the elements have vents.
12. The system of claim 1, further comprising a first holding assembly on the extendable visor element including arms having engagement areas that cooperate with and engage a second holding assembly on the support element.
13. The system of claim 1, wherein the extendable visor element is clear plastic.
14. The system of claim 1, further comprising structural reinforcements on

Attorney Docket No. T3465-9475WO01

one or more of the elements.

15. The system of claim 1, wherein a front lip depends downwardly at a predetermined angle from the extendable visor element.

16. An extendable visor system comprising:
means for supporting a visor extension;
means for holding the visor extension in a position; and
means for restricting movement of the visor extension.

17. A helmet visor comprising:
a visor; and
means for extending the visor and maintaining the visor in a selected position.

18. A method of extending a helmet visor comprising:
grasping an extendable visor element, the extendable visor element adapted to movably and frictionally engage a support element, the extendable visor element elongating the visor system when pulled upon.

19. A clear adjustable helmet visor that includes means for maintaining the visor in a selected position.

Attorney Docket No. T3465-9475WO01

20. The invention substantially as shown and described herein.

Fig. 1

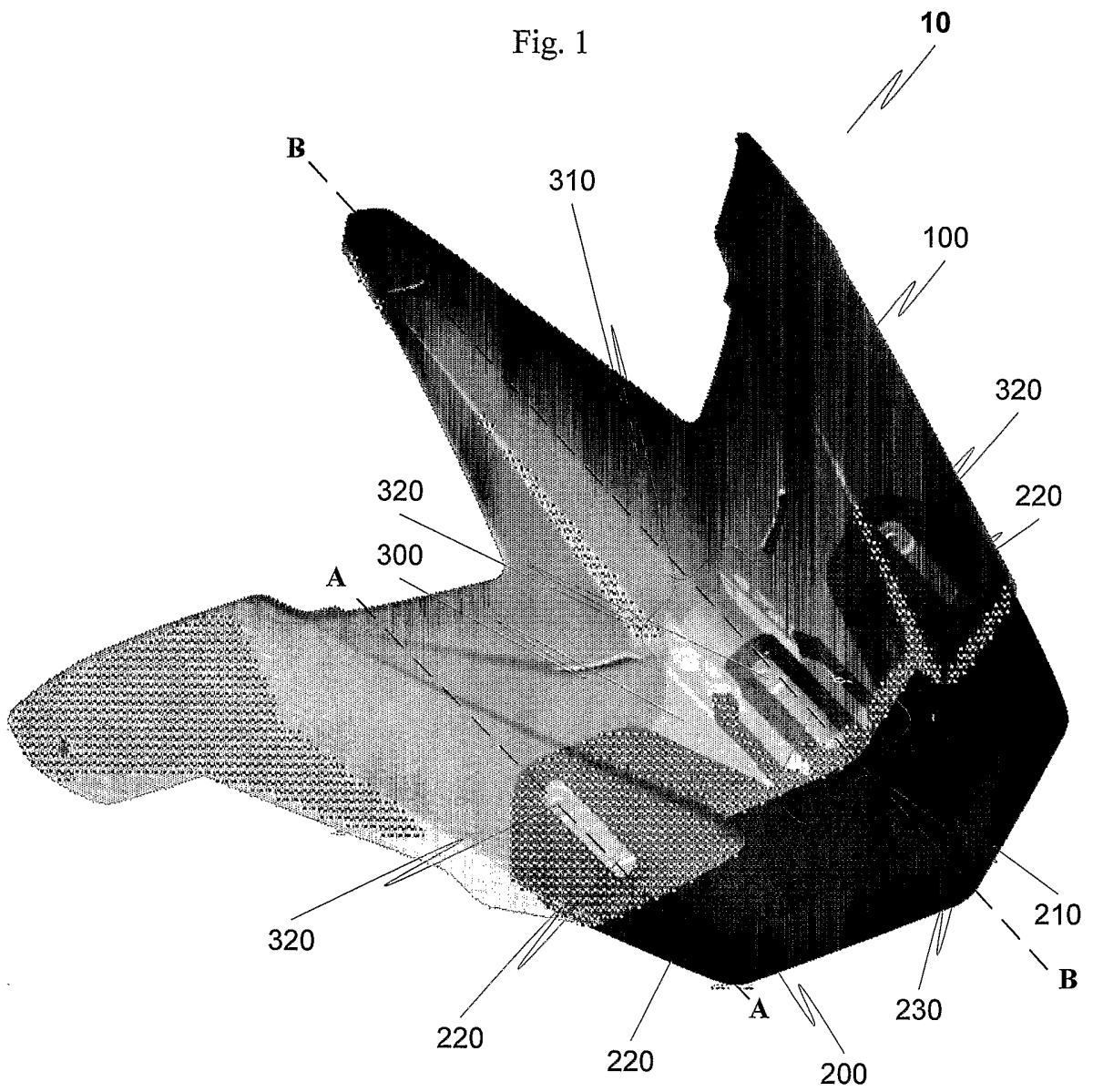
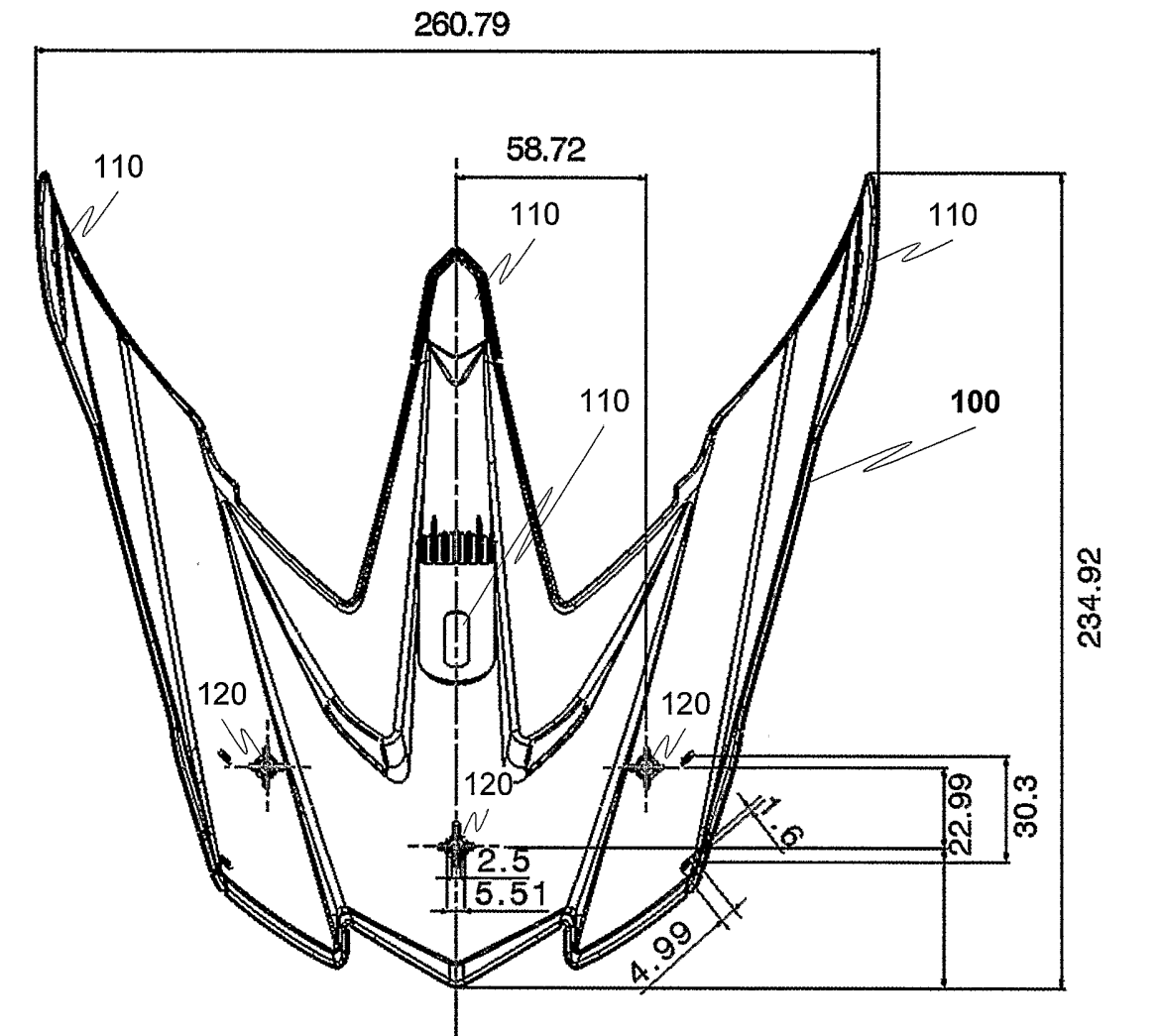


Fig. 2



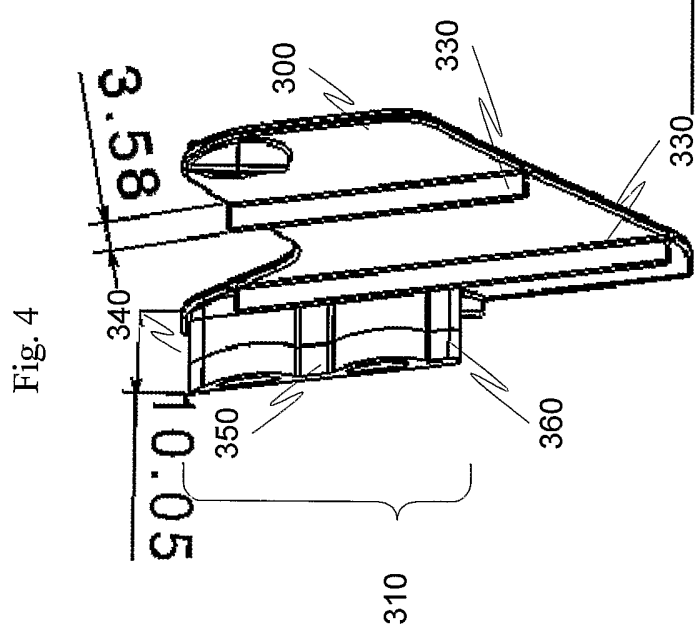
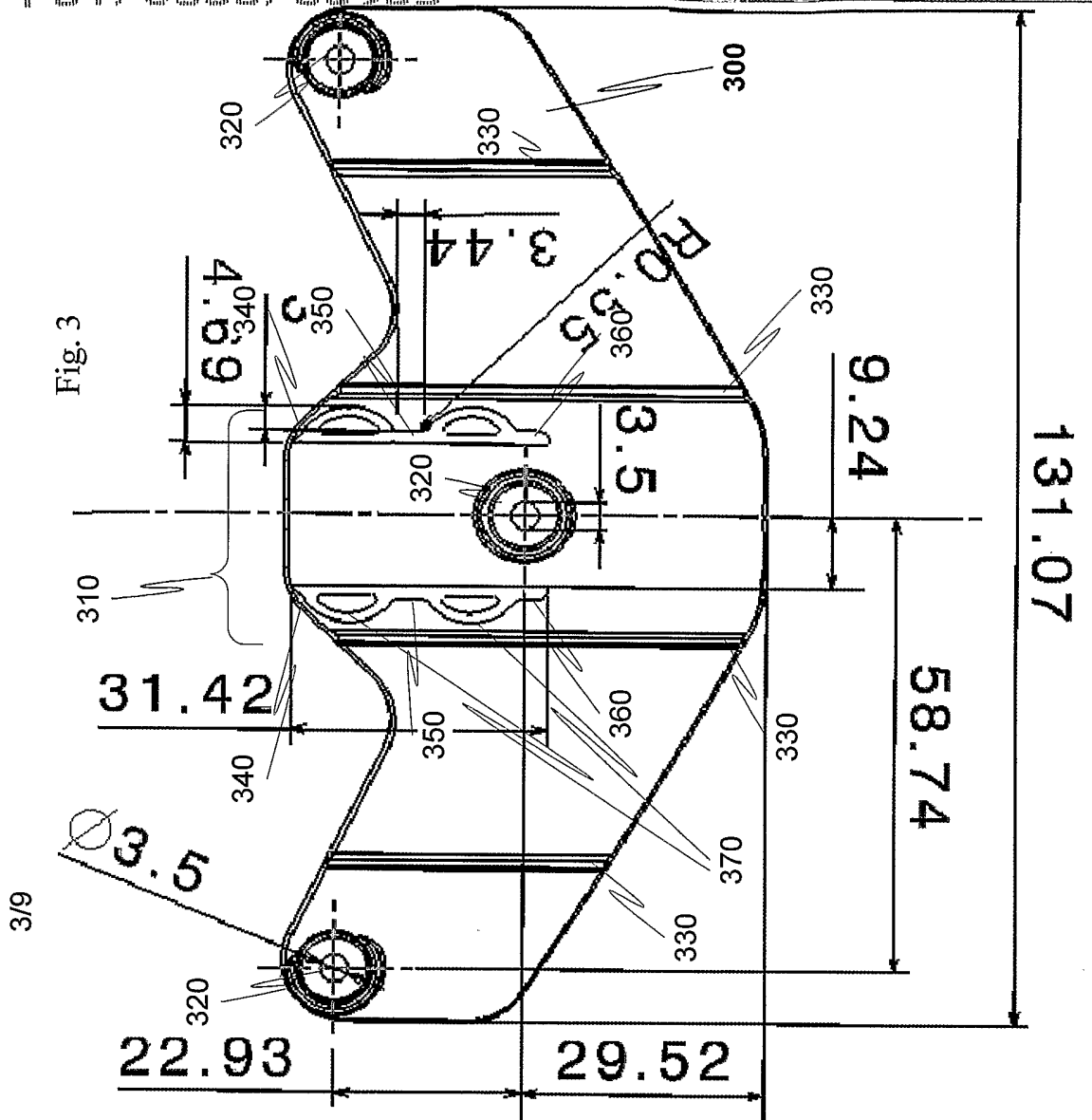


Fig. 5

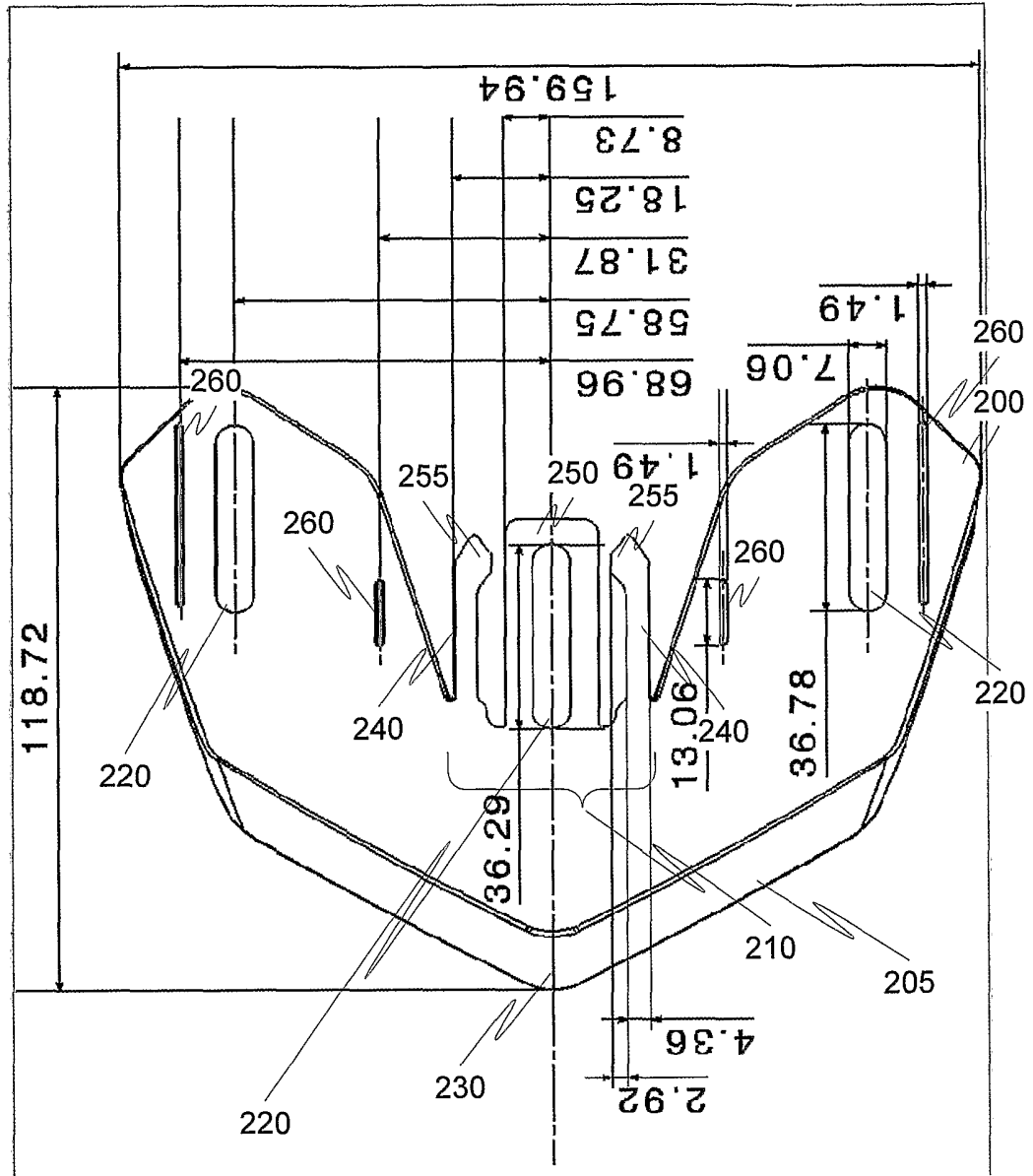


Fig. 6

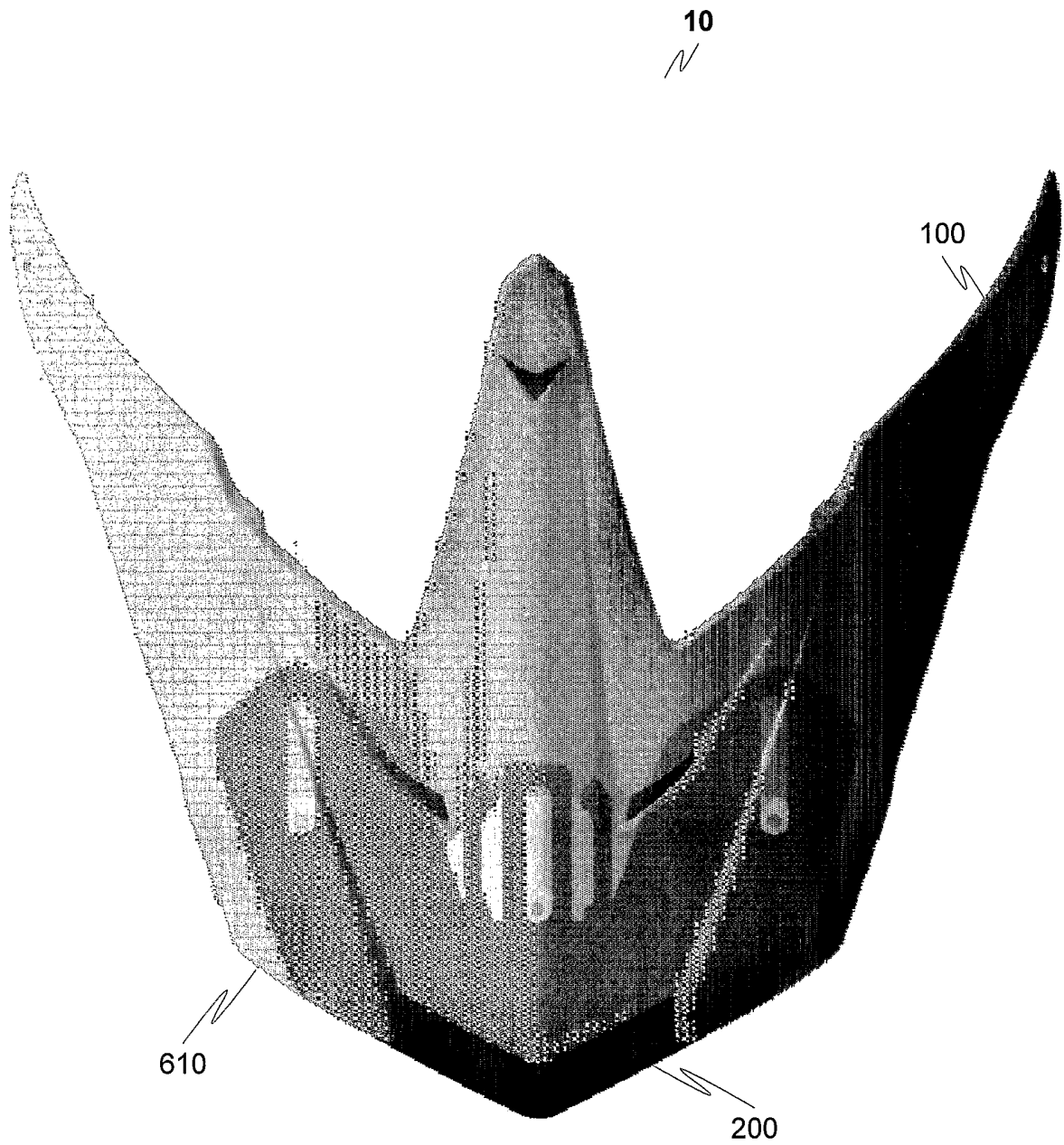
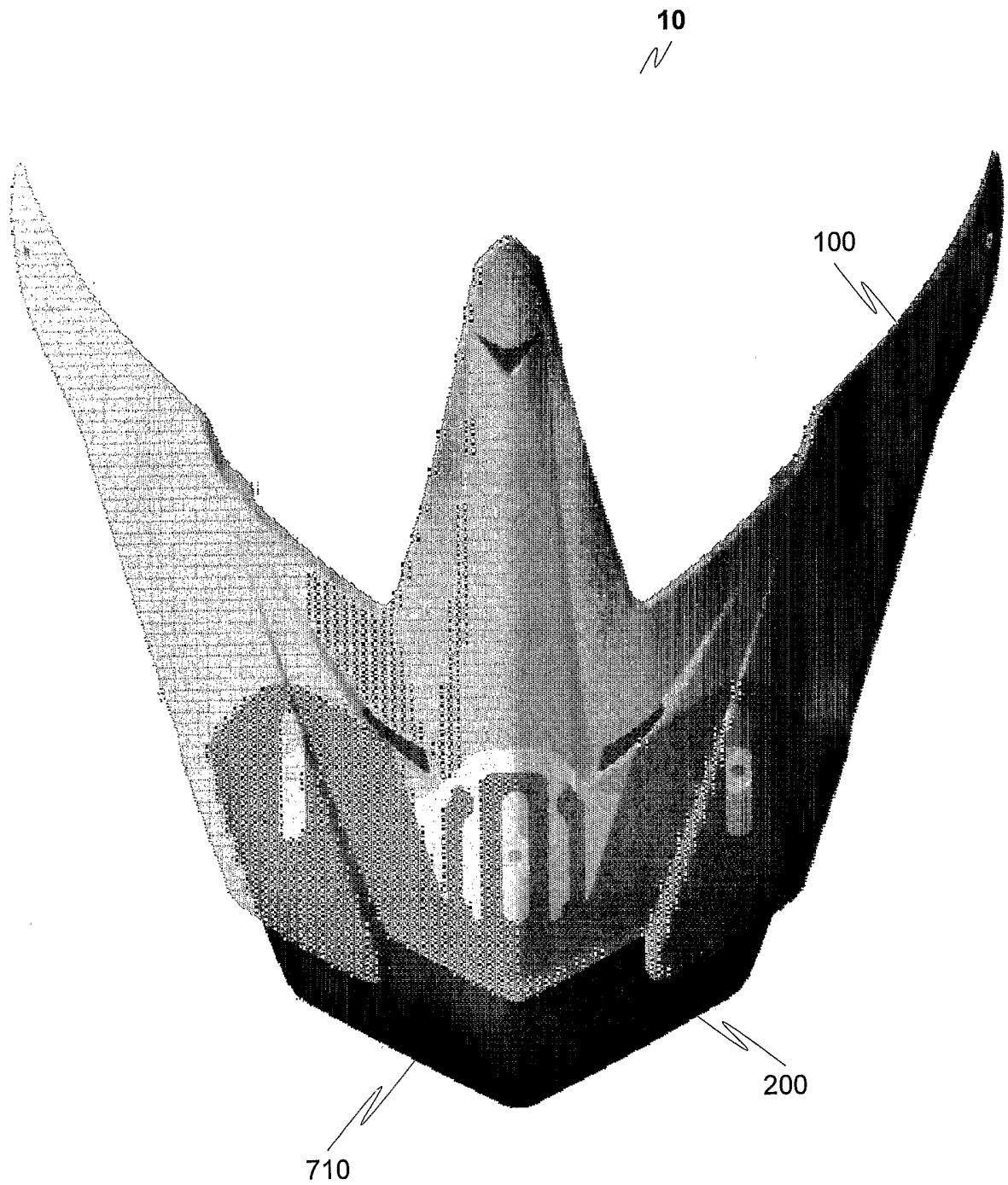
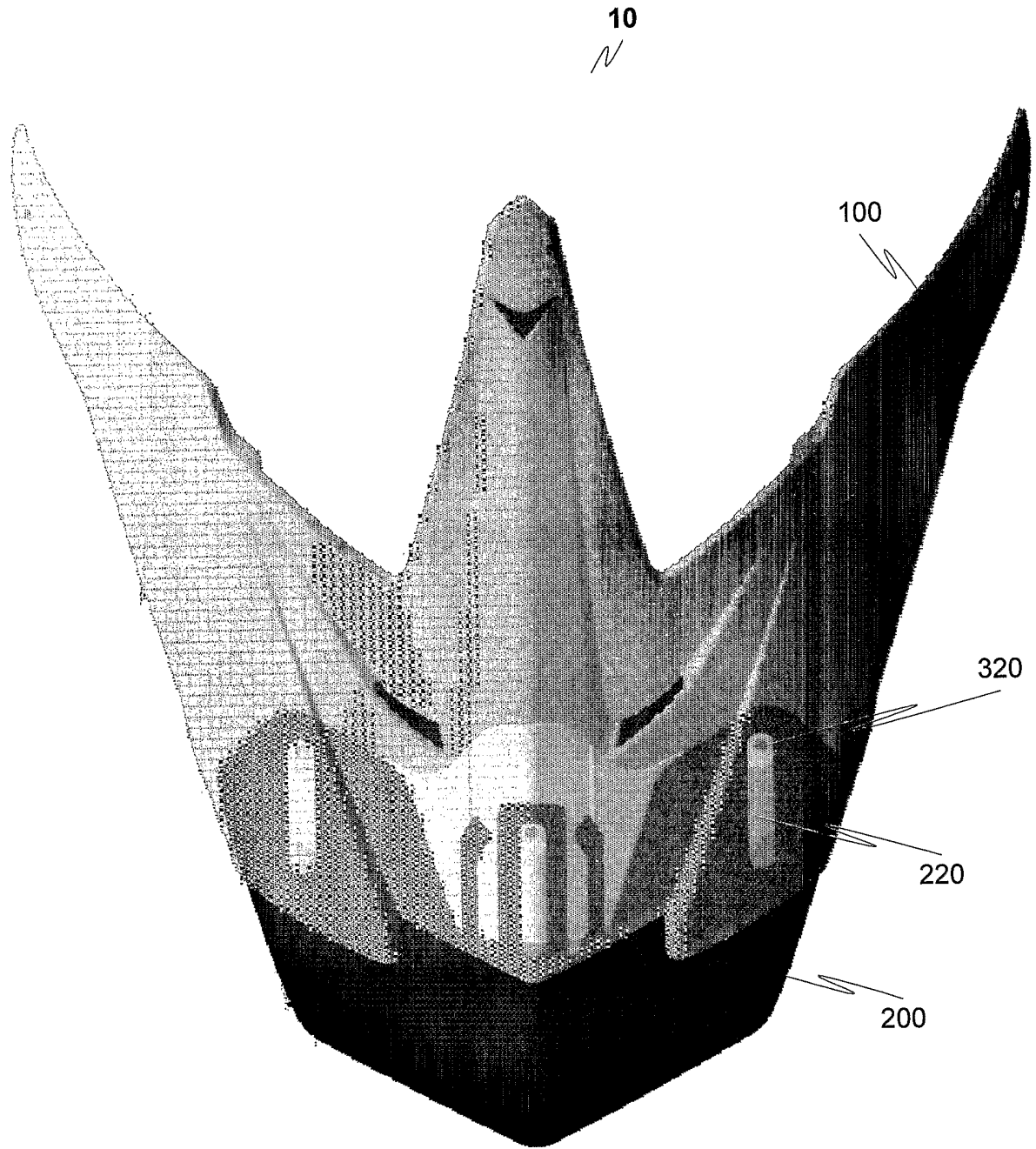


Fig. 7



7/9

Fig. 8



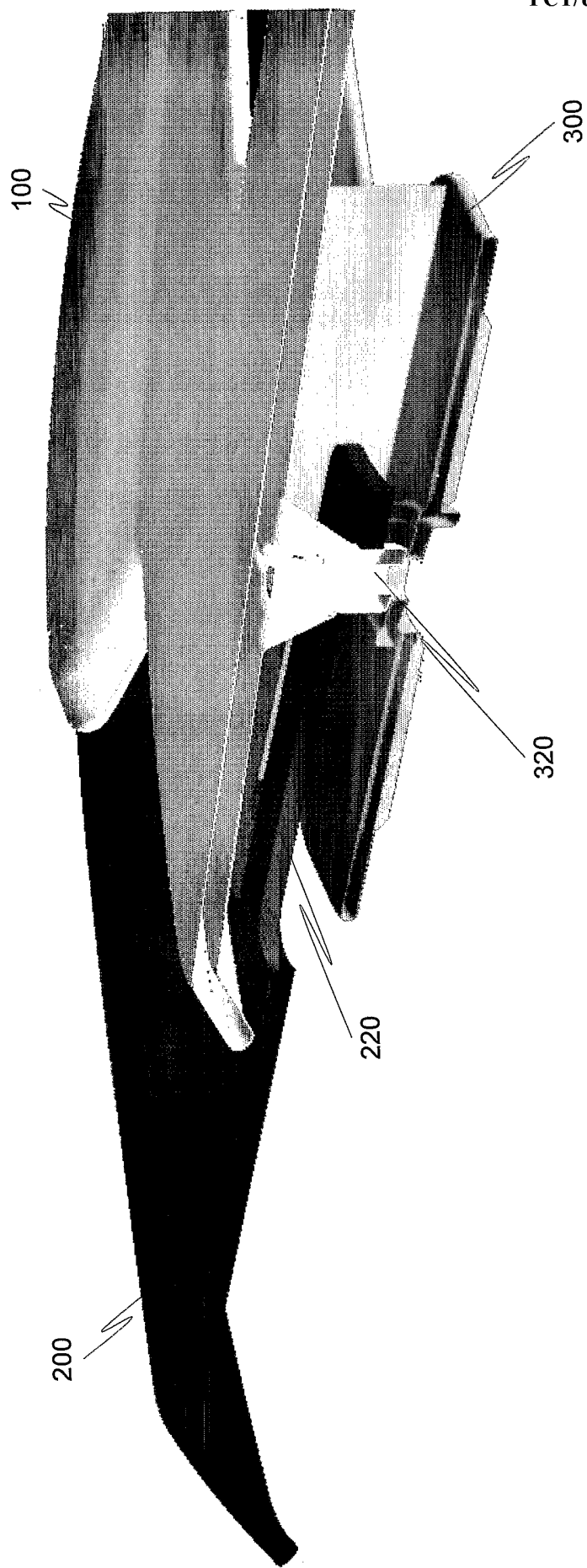


Fig. 9

9/9

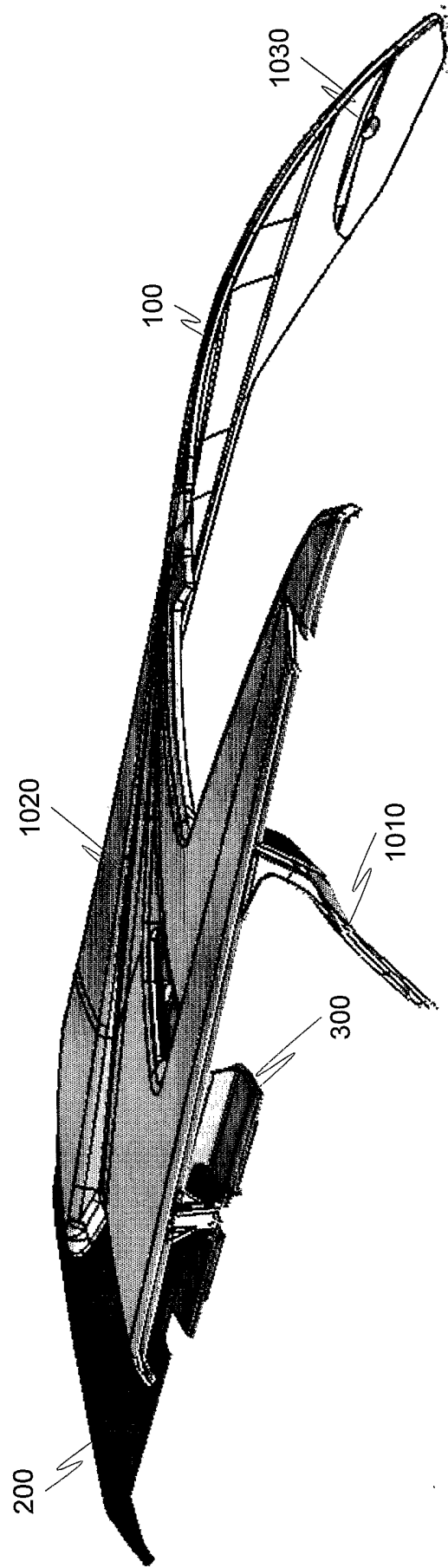


Fig. 10