

ABSTRACT

Given description discloses a cooling mechanism for the front mounted
embodiments without use of artificial cooling means. To fulfil this objective the a
modified front panel of scooter is made with aerodynamic features. These air
5 inlets are made at predefined locations on the front panel such that maximum air
can enter the front housing space of the vehicle. These aerodynamic modifications
are multiple reliefs provided in the front panel which has multiple planes and
directs air to the head lamp and internal parts. Mentioned reliefs further reduce the
vehicle movement friction due to which overall efficiency of the engine increases.

10

To be accompanied with Figure 1


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WHAT IS CLAIMED IS:

- 1) A front panel for a scooter, comprising an upper part, a lower part, and a rear part detachably fixed with each other and forming a front housing, characterized in that the upper part comprises a plurality of side panels, atleast one lower
5 portion and atleast one upper portion such that the lower portion and the upper portion are mounted in a plane lower than the plane of the side panels forming an air collection area configured to direct air towards atleast one air inlet on the front panel.
- 2) The front panel, as claimed in claim 1, wherein the side panel is covering the
10 sides of the upper part of the front panel such that an outer edge of the side panel is connected to the rear part and the lower part of the front panel.
- 3) The front panel, as claimed in claim 2, wherein an inner edge of the side panel is forming a concave shape such that upper portion of the side panel is extending forward and the lower portion is extending backward.
- 15 4) The front panel, as claimed in claim 1, wherein upper edge of the lower portion and lower edge of the upper portion are integrated.
- 5) The front panel, as claimed in claim 4, wherein the lower portion is forming a convex shape and is housing a headlamp on its upper area.
- 6) The front panel, as claimed in claim 5, wherein the lower portion has atleast
20 one air inlet along the convex surface.
- 7) The front panel, as claimed in claim 5, the convex surface is configured to direct air towards the air inlet, the upper portion and the headlamp.

8) The front panel, as claimed in claim 4, wherein the upper portion has atleast one downward projection configured to facilitate route air in pre specified direction.

9) The front panel, as claimed in claim 8, wherein the downward projection has atleast one air inlet such that air is routed towards said air inlet.

10) The front panel, as claimed in claim 1, wherein the upper portion of the front panel has atleast one air outlet for the air flowing inside the front housing.

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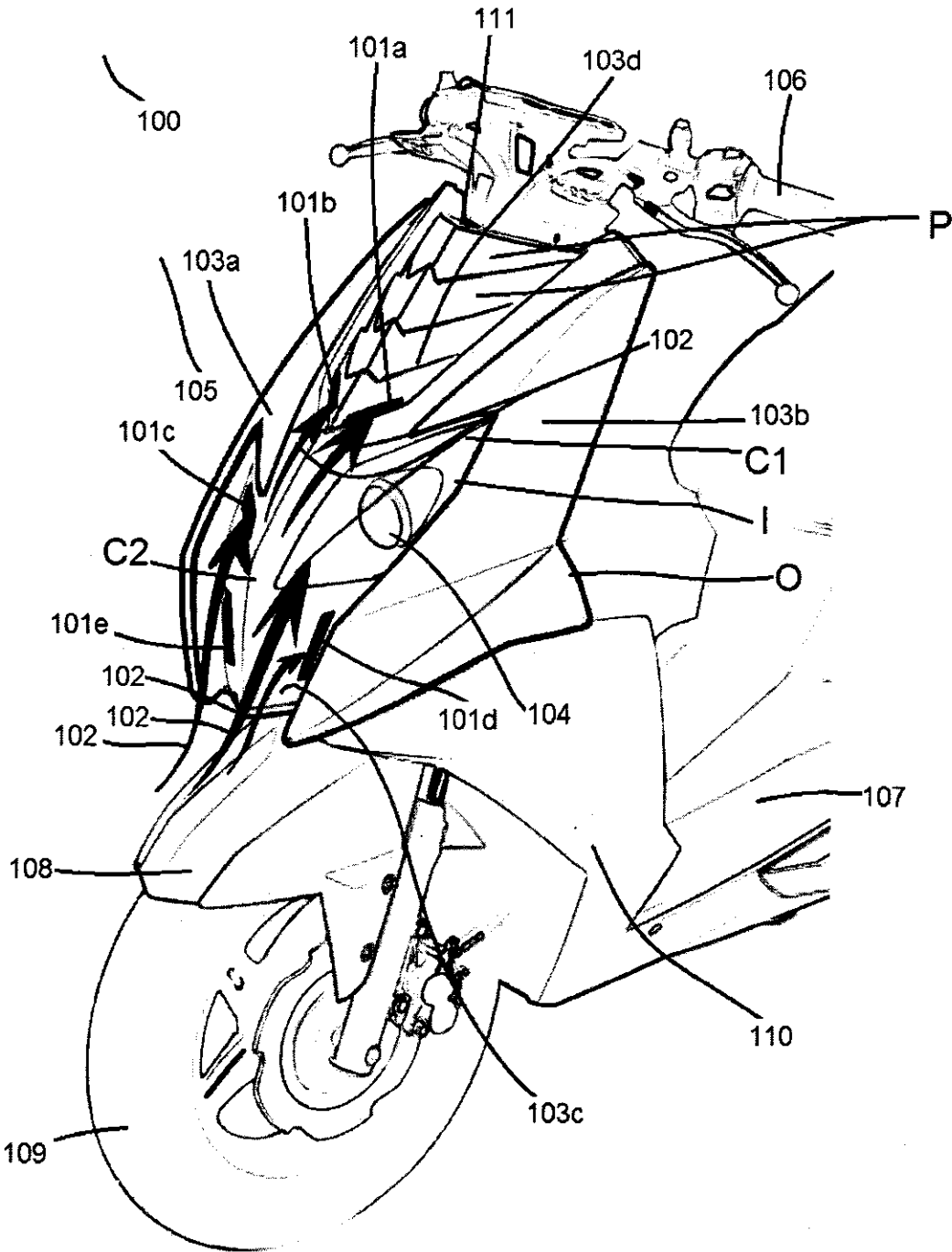
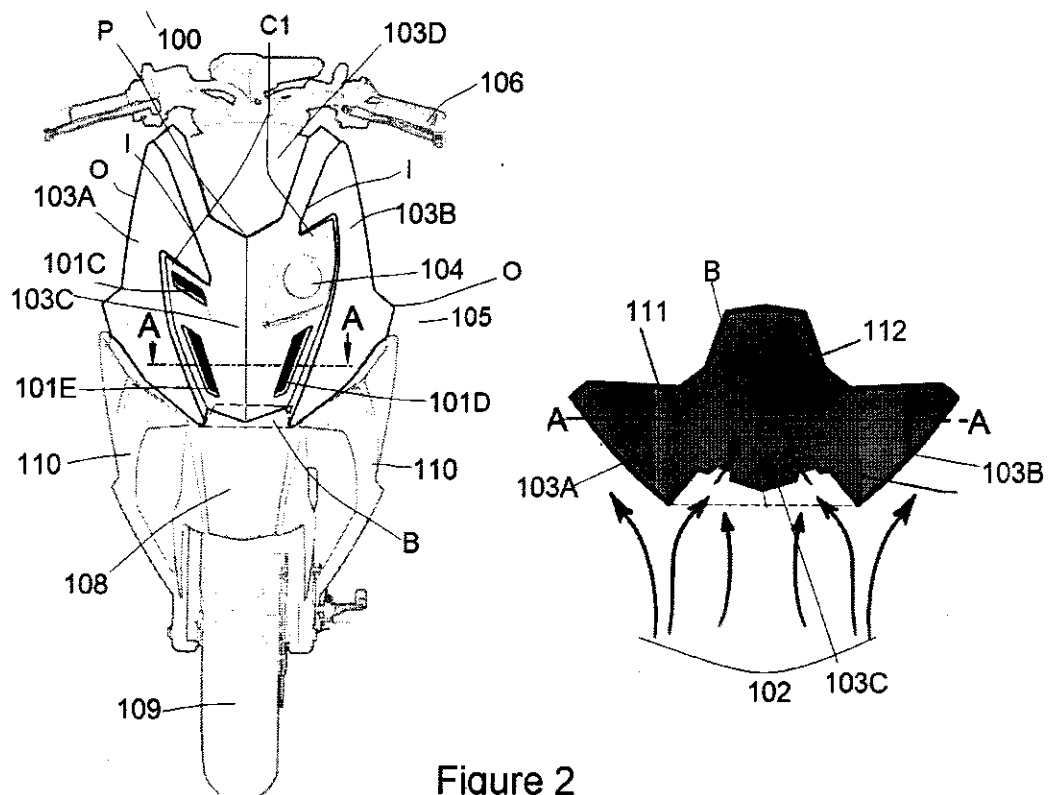


Figure 1

Manual



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FIELD OF THE INVENTION

The present invention generally relates to the front panel of a scooter and more particularly to the upper part of the front panel of the scooter.

BACKGROUND OF THE INVENTION

- 5 In existing technology, front panel of the vehicle covers mountings of the front embodiments of the vehicle such as steering tube, horn, head tube, front fork unit, battery, wiring harness and headlamp etc. This front cover is used to protect said embodiments from foreign elements and external factor. Said front cover also increase aesthetic look of the vehicle defining the visual features of the vehicle.
- 10 Said front cover has front upper, front lower, front side and front rear parts which form a housing space that accommodates mentioned embodiments. As this housing is a closed space and air flow is less, temperature of said housing and embodiments increases during working condition. To facilitate better cooling inside this housing, artificial cooling means are required. Use of such means
- 15 increases the manufacturing complexity, space requirement and cost for the vehicle.

SUMMARY OF THE INVENTION

- Main objective of present invention is to provide a cooling solution for the front mounted embodiments through flowing air and without use of artificial
- 20 cooling means. Front panel of scooter is made with aerodynamic modifications such that air is directed towards the air inlet such that air can reach to the inner

embodiments. These air inlets are made at specific locations through which maximum air can enter the front housing space of the vehicle.

These aerodynamic modifications are multiple reliefs provided in the front panel which has multiple planes and directs air to the head lamp and internal parts. Mentioned reliefs further reduce the vehicle movement friction due to which overall efficiency of the engine increases. Air flowing inside the housing space comes out of it through an outlet provided on the top of the front panel.

Summary provided above explains the basic features of the invention and does not limit the scope of the invention. Additional detailed information related to the enablement of the invention will be provided in the detailed description and accompanying claims. Scope of the invention shall be based on the claims provided.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given herein below and the accompanying drawing(s). Provided drawings are incorporated in and constitute embodiments of the invention and illustrates several aspects of the invention and together with a description of the embodiments serve to explain the principles of the invention. Drawings given below are provided to support the description of the invention and are not limiting the scope of the present invention. A brief description of the drawing is as follows:

Figure 1 is depicting the main embodiments and enablement of the claimed invention.

Figure 2 is showing and essential embodiments of the vehicle and depicting the best mode of enablement.

Figure 3 is showing an embodiment of the claimed invention which is reducing front friction for the vehicle.

5 **DETAILED DESCRIPTION OF THE INVENTION**

The embodiments disclosed below are not intended to be exhaustive or to limit the invention to the precise forms disclosed in the following detailed description. Rather, the embodiments are chosen and described so that best enabling arrangements of the invention can be explained through all possible embodiments
10 and examples of it. The invention may have application to all kind of two wheeled vehicles.

Referring to **Figure 1**, scooter **100** is shown in order to describe different embodiments of said scooter **100** with a focus on the essential embodiments of the invention. As shown, scooter **100** has a front panel **105** having upper part **103**, a
15 lower part **110** and a rear part (not shown in Figure) detachably fixed with each other and forming a front housing. Front embodiments like front suspension, steering assembly headlamp etc. are housed in said front housing.

Referring to **Figure 1** to **Figure 3**, an exemplary embodiment of the claimed invention, a cooling mechanism for the front mounted embodiments, without use
20 of artificial cooling means is explained. As shown the front panel **105** of scooter **100** is made with aerodynamic modifications such that air **102** is directed towards the air inlets **101a**, **101b**, **101c**, **101d**, **101e** to reach said inner embodiments.

These air inlets **101a, 101b, 101c, 101d, 101e** are made at one or more locations on upper **103d** and lower portion **103c** of the front part **103** of the front panel **105**, such that maximum air **102** can enter the front housing space of the scooter **100**.

- 5 Upper part of the front panel **105** has two side panels **103a** and **103b** identical to each other and mounted on the sides of the front panel **105**. These side panels **103a** and **103b** have outer edges **O** and inner edges **I**. Mentioned outer edge **O** is connected to the rear part and lower part **110** of the front panel **105**. Inner edges **I** of side panels **103a, 103b** form a concave surface **C1** in each side panel such that
- 10 upper part of said side panels **103a, 103b** extends outwards and lower part of the side panel extends inwards.

- Further, lower portion **103c** and upper portion **103d** of the front panel **105** are integrated with each other. Said lower portion **103c** forms a convex shape **C2** and houses head lamp **104** on its upper area. It also provides platform for multiple air
- 15 inlets e.g. **101c, 101d, 101e** at different locations.

This convex shape **C2** of lower portion **103c** facilitates change in direction of the flowing air **102** and directs maximum air towards air inlets **101c, 101d** and **101e**.

- Further, above mentioned upper portion **103d** has multiple downwardly
- 20 extended projections **P** arranged in a downward directions such that said projections **P** overlaps each other. Multiple air inlets **101a, 101b** are formed between two consecutive projections **P** through which air **102** enters in front

housing space. These projections **P** may or may not overlap in the front panel **105** depending on the design requirement of the scooter **100**.

Above mentioned side panels **1013a** and **103b** are mounted in a plane A-A upper than the plane of said lower portion **103c** and upper portion **103d**. This
5 difference in the planes forms an air collection area **B**.

From this air collection area **B**, concave shape **C1** of the inner edge **I** of the side panel **103b**, directs air **102** towards the air inlets **101c**, **101d**, and **101e** and headlamp **104** by reflecting coming air **102**.

Further, Convex shape **C2** of the lower portion **103c** of the front panel **105**
10 directs air **102** towards headlamp **104** and air inlets **101c**, **101b** and **101a**.

Mentioned downward projections **P**, stops air from flowing upwards and forces it through the air inlets **101a** and **101b**. Air circulating inside the front housing space behind the front panel **105** comes out of it from the outlet **111** providing in proximity of the handle bar assembly **106**. Due to these, entry and exit provisions
15 circulation of air **102** in the front panel **105** remains constant.

Further, as shown in **Figure 3**, respective concave **C1** and convex shapes **C2** of front panel **105** directs air **102** in different directions. Also difference in planes of the side panels **103a**, **103b** and the upper **103d** and lower **103c** portions split force of coming air **102** and spread it for a larger surface area. Thus overall vehicle
20 movement friction reduces which improves efficiency of the vehicle engine.

NUMERAL CLASSIFICATION

	100	Scooter
	101a, 101b, 101c, 101d, 101e	Air Inlets
	102	Air Direction
5	103a, 103b,	Side Panels of Front Panel
	103c,	Lower Portion of Front Panel
	103d	Upper Portion of Front Panel
	104	Head Lamp
	105	Front Panel
10	106	Handle Bar Assembly
	107	Foot Board
	108	Front Fender
	109	Front Wheel
	110	Front Side Covers
15	111	Air Outlet
	P	Downward Projections
	C1	Concave Projections
	C2	Convex Projections
	I	Inner Edge of Side Panels
20	O	Outer Edge of Side Panels
	B	Air Collection Area
	A-A	Plane of Side Panels