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(72) Inventor; and

(71) Applicant : ERSIN, Sertaç [TR/TR]; Hurriyet Mah. Çamlıbel Cad. No:23/A Botanika Evleri A6, Çorlu/Tekirdag (TR).

(74) Agent: DESTEK PATENT, INC.; Lefkose Cad. NM Ofis Park B Blok No: 36/5 Besevler, 16110 Bursa (TR).

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(54) Title: SPOILER WING EMBODIMENT WITH LOW CENTER OF GRAVITY

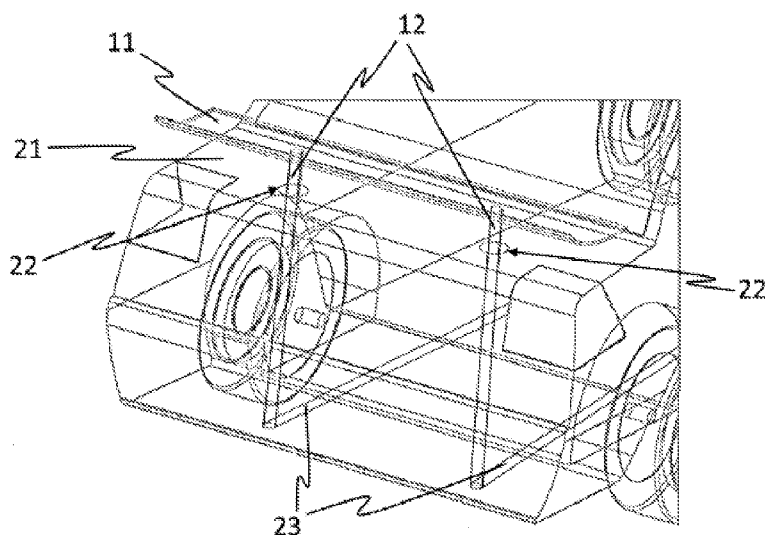


Figure 2

(57) Abstract: A low center of gravity spoiler wing embodiment (10) comprising spoiler wing (11) component for improving handling of vehicles (20) by regulating unwanted air flow, and it is characterized in that; it comprises at least one connection component (12) ensuring connection of said spoiler wing (11) directly to the vehicle (20) frame (23) without contacting other components. In this way, the spoiler wing embodiment (10) is connected directly to the vehicle (20) frame (23) without contacting other components of the vehicle, and thus the center of gravity is brought closer to the ground by means of transferring both its own weight and the counter force formed due to speed, directly to the frame (23).

DESCRIPTION

Spoiler Wing Embodiment with Low Center of Gravity

5 **The Related Art**

The invention relates to a spoiler wing embodiment regulating and controlling air flow on vehicles.

- 10 The invention particularly relates to spoiler wings connected directly to the vehicle frame without contacting other components of the vehicle, and thus bringing the center of gravity closer to the ground by means of transferring both its own weight and the counter force formed due to speed, directly to the frame.

15 **The Prior Art**

- Spoiler wings are developed in vehicles in order to regulate unwanted air flows. Spoiler wings generally formed in wing shape regulate air flow and improve aerodynamics and also in most cases, increase handling by forming a reverse aerofoil effect by means of
- 20 applying a downward force during acceleration. Spoiler wings mostly preferred in high performance and sports vehicles may also find use in common passenger cars these days.

- Although having various application areas, the spoiler wings are mostly mounted at the
- 25 rear upper parts or at the rear splash guards of vehicles. In the Chinese patent document with No. CN103342137, entitled: "Vehicle tail wing regulating air stream" presents a wing that is fixed on the vehicle rear trunk cover. In these kinds of embodiments, the center of gravity is pulled upward both due to the own weight of the wing and since the impact of the downward pressure force formed in accordance with the increasing speed acts on the
- 30 upper part. Even though the aerodynamically increasing downward pressing weight increases the cornering ability of the vehicle at high speeds, since it applies the pressing weight from above, it inevitably moves the center of gravity away from the ground and this cornering ability is lost in the form of skidding. Therefore, solution is provided to this problem by generally providing a low design to these kinds of vehicles. In the prior art

embodiments, a system in which the weight of the spoiler wing and the force formed due to wind pressure can be directly transferred to the vehicle frame is not found.

As a result, the inadequacy of the prior art solutions about the subject and the need for spoiler wings connected directly to the vehicle frame without contacting other components of the vehicle, and thus bringing the center of gravity closer to the ground by means of transferring both its own weight and the counter force formed due to speed, directly to the frame, have necessitated an improvement in the related technical field.

10 **Purpose of the Invention**

The invention relates to a spoiler, which meets the above said requirements, eliminates all of the drawbacks, and brings some additional advantages.

15 The main purpose of the spoiler wing according to the invention is to ensure that the own weight of the spoiler wing and the force formed due to the wind pressure are transferred directly to the vehicle frame by means of connecting the spoiler wing directly to the vehicle frame via connecting components without contacting to any other component of the vehicle. In this way, the center of gravity is brought closer to the ground and prevented
20 from negatively affecting the skidding of the vehicle. The most significant advantage is not to have any loss in handling during sharp bends.

Another purpose of the invention is to ensure that the connection components reach the vehicle frame contact-free, by means of holes formed on the vehicle body. In this way,
25 there would be no need for different designs of connection components that would increase the weight, and they are allowed to reach the vehicle frame in the shortest manner.

In order to achieve the above said purposes in the most general sense, the invention
30 relates to a spoiler wing connected directly to the vehicle frame without contacting other components of the vehicle, and thus bringing the center of gravity closer to the ground by means of transferring both its own weight and the counter force formed due to speed, directly to the frame. The developed spoiler wing comprises a wing improving handling by means of regulating unwanted air flow on vehicles, and at least one connection component

allowing the spoiler wing to be directly connected to the vehicle frame without contacting any other component of the vehicle.

The structural and characteristic features of the invention and all of its advantages shall be understood better with the figures and the detailed description given below in reference to the figures, and therefore, the assessment should be made by taking into account the said figures and detailed explanations.

Figures for Better Understanding of the Invention

For better understanding of the embodiment of the present invention and its advantages with its additional components, it should be evaluated together with below described figures.

Figure – 1: is the general view of the spoiler wing according to the invention mounted on the vehicle.

Figure – 2: is the close-up isometric view of the spoiler wing according to the invention mounted on the vehicle.

Parts References

- 10 Spoiler wing embodiment
- 11 Spoiler wing
- 12 Connection component
- 20 Vehicle
- 21 Body
- 22 Hole
- 23 Frame

Detailed Description of the Invention

The low center of gravity spoiler wing embodiment (10) developed for use on vehicles (20), basically comprises a spoiler wing (11) improving handling by means of regulating

unwanted air flow, and a connection component (12) allowing the spoiler wing (11) to be directly connected to the vehicle frame (23) without contacting any other component of the vehicle (20). In Figure 1, the general view of the spoiler wing embodiment (10) according to the invention is shown in mounted form on a vehicle (20). Although the number may
5 change, in the preferred embodiment, the spoiler wing (11) is connected to the vehicle (20) by means of two connection components (12).

The connection components (12) are connected to the frame (23) by passing through the
10 holes (22) formed on the vehicle (20) body (21), as shown in the close-up isometric view given in Figure 2, where the spoiler wing embodiment (10) is mounted on the vehicle (20). In this way, passage of the connection component (12) without contacting the hood, covering etc. body (21) components is made possible. Therefore, it is aimed to transfer the weight of the spoiler wing embodiment (10) and the pressure force formed on the spoiler wing (11) due to wind, directly to the frame (23) without dispersing. By means of focusing
15 all the forces at the frame (23), the center of gravity is also brought closer to the ground and thus handling is improved. Fixing of said connection component (12) directly to the vehicle (20) frame (23) is made by welding or other fixing techniques. In addition, it is also possible to make the fixing operation by other fixing components such as bolt and nut.

CLAIMS

- 5 **1.** A low center of gravity spoiler wing embodiment (10) comprising spoiler wing (11) component for improving handling of vehicles (20) by regulating unwanted air flow, and it is characterized in that; it comprises:
- at least one connection component (12) ensuring connection of said spoiler wing (11) directly to the vehicle (20) frame (23).
- 10 **2.** A spoiler embodiment (10) according to Claim 1, characterized by comprising at least one hole (22) formed on said vehicle (20) body (21) and ensuring contact-free passage of the connection component (12) through the body (21).
- 15 **3.** A spoiler embodiment (10) according to Claim 1, characterized by comprising welding or fixing components enabling fixing of said connection component (12) directly to the vehicle (20) frame (23).

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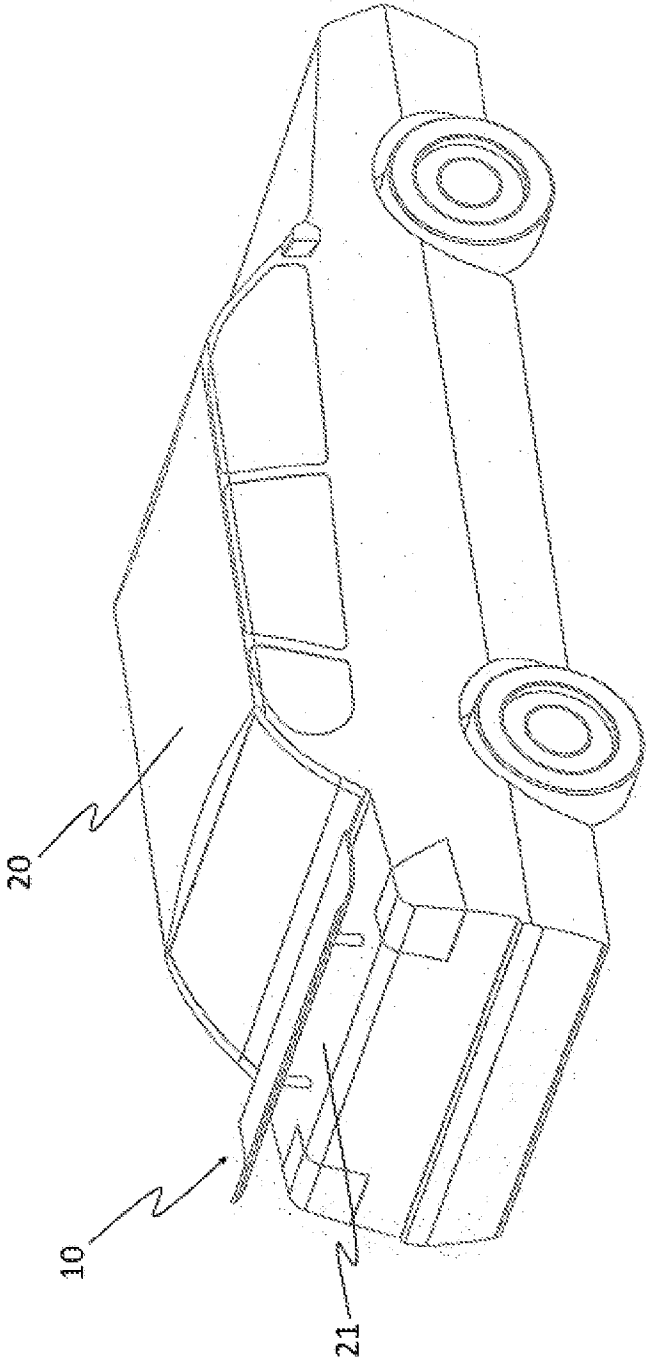


Figure 1

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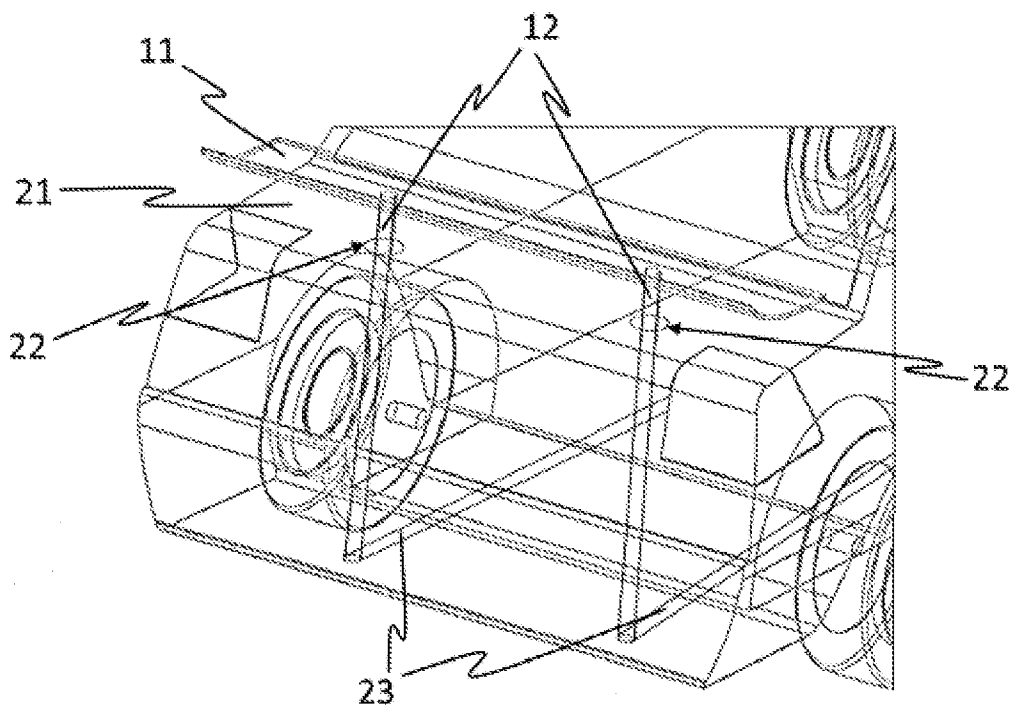


Figure 2

INTERNATIONAL SEARCH REPORT

International application No
PCT/TR2016/050301

A. CLASSIFICATION OF SUBJECT MATTER
INV. B62D35/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B62D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 473 293 A (TRYSOME LTD [GB]) 9 March 2011 (2011-03-09) page 8, last paragraph running to first line of page 9; figure 4	1-3
X	----- JP S60 163772 A (MITSUBISHI MOTORS CORP) 26 August 1985 (1985-08-26) abstract; figures 4,6	1-3
X	----- EP 2 080 694 A2 (HS GENION GMBH [DE]) 22 July 2009 (2009-07-22)	1,3
A	paragraph [0029]; figure 2	2
X	----- US 2003/201289 A1 (SWAIN DANIEL B [US]) 30 October 2003 (2003-10-30) paragraph [0020]; figures 1,3	1,2



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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24/01/2017

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Burley, James

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/TR2016/050301

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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