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(54) **VEHICLE BLOCKER SYSTEM IN RED TRAFFIC LIGHT**

(57) The present invention refers to a system and a method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle. The system preferably comprises of, at least one signal transmitter 2 provided at traffic signal location, at least one signal receiver 4 provided inside at least one wheel 3 of the vehicle, at least one breather valve 6 and at least on control block 5 provided in at least one wheel 3 of the vehicle. The signal receiver 4 connected to the control block 5 for transferring the received alert signal 7 from the signal transmitter 2 to the control block 5. The control block 5 configured for controlling and/or opening the breather valve 6 that is attached to the control block 5. The alert signal 7 enables the control block 5 for sending control signal to open the breather valve 6 to release air from the wheel 3 tire 9 for a predetermined time thereby to alert a driver of the vehicle for preventing the vehicle from crossing the red signal.

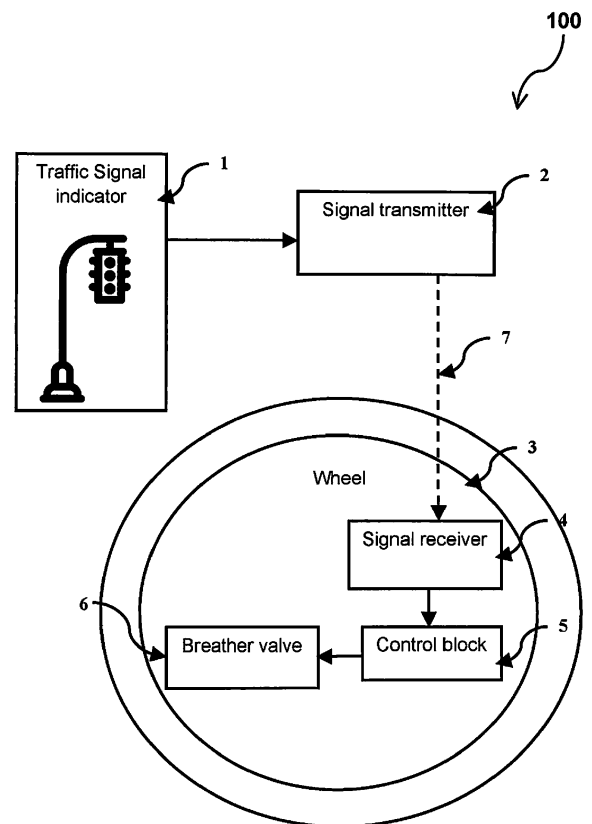


Fig. 1

Description

[0001] This invention refers to a system for preventing vehicles crossing from a red traffic signal that indicates to stop the vehicle according to claim 1 and a method thereof according to claim 6.

Background of the Invention

[0002] Violating traffic rules are common in present traffic condition, since some people do not care about traffic rules in a sufficient manner. In particular in places where there is no police or camera control systems, users / drivers may violate the traffic rule. Most of the accidents occur due to the violation of the traffic rules by the drivers. Hence, vehicles that pass a red traffic light are risking the life of themselves and others. Further, they cause traffic congestion. In most of the cases, the reason for the violation of the traffic rules is that there is no punishment for the violation. In case if the driver gets caught also the highest punishment may be a penalty. Moreover at many traffic signal crossings (cctv) camera controls are not implemented yet, because these systems are expensive and there are procedures that are time-consuming and costly.

[0003] At every pass of a red light, if the driver knows that if there is a problem then he/she may give an utmost care to avoid crossing the signal when the red traffic light displayed in the traffic signal indicator. Therefore there is a need for a system for preventing drivers from violating the traffic rules by themselves.

Object of the Invention

[0004] It is therefore the object of the present invention to provide a system and a method for preventing vehicles crossing from a red traffic signal that indicates to stop the vehicle in a simple manner compared to the known systems and methods.

Description of the Invention

[0005] The before mentioned object is solved by a system for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle according to claim 1. The system for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle preferably comprises at least one signal transmitter provided at traffic signal location, at least one signal receiver provided inside at least one wheel of the vehicle, at least one breather valve provided in at least one wheel of the vehicle, and at least one control block provided inside at least one wheel of the vehicle. The signal transmitter is provided for transmitting an alert signal to the signal receiver when the vehicle crosses the red traffic signals. The signal receiver is connected to the control block for transferring the received alert signal from the signal transmitter to the control block. The control block is con-

figured for controlling and/or opening the breather valve that is attached to the control block. The alert signal enables the control block for sending control signal to open the breather valve to release air from the wheel tire for a predetermined time thereby to alert a driver of the vehicle for preventing the vehicle from crossing the red signal.

[0006] This solution is beneficial since such a system for preventing the driver from violating the traffic rules and also prevents others from a risk of an accident.

[0007] Further preferred embodiments are subject-matter of dependent claims and/or of the following specification parts.

[0008] According to a preferred embodiment of the present invention, the signal transmitter is provided under a road near a zebra crossing and/or provided besides a traffic signal indicator. The breather valve is made to open for a duration ranging from 5 seconds to 15 seconds. The breather valves are controlled electromechanically by the control block. The release of air from the tire of the wheel due to violation of traffic rules by a driver reduces a pressure inside the tire thereby to make the vehicle movement difficult so that the driver should avoid such a scenario.

[0009] According to a further embodiment of the present invention, a method is provided for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle according to claim 6. The method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle comprises the steps of transmitting an alert signal to a wheel of the vehicle when the vehicle from crossing the red traffic signal, receiving the alert signal inside the wheel of the vehicle, transferring the received alert signal to control a breather valve provided in the wheel of the vehicle, opening the breather valve electromechanically to release air from the wheel tire for a predetermined time, and alerting a driver of the vehicle for preventing the vehicle crossing from the red traffic signal. The method further comprising the step of keeping the breather valve remain in open for a duration ranging from 5 seconds to 15 seconds.

[0010] Further benefits, goals and features of the present invention will be described by the following specification of the attached figures, in which components of the invention are exemplarily illustrated. Components of the devices and method according to the inventions, which match at least essentially with respect to their function can be marked with the same reference sign, wherein such components do not have to be marked or described in all figures.

[0011] The invention is just exemplarily described with respect to the attached figures in the following.

Brief Description of the Drawings

[0012]

Fig. 1 illustrates an exemplary block diagram of a system for preventing vehicles crossing from a red traffic signal that indicates to stop the vehicle, ac-

according to the present invention;

Fig. 2 illustrates an exemplary position of the signal transmitter provided in the system, according to an embodiment;

Fig. 3 illustrates an exemplary position of the breather valve in the wheel of the vehicle, according to an embodiment; and

Fig. 4 illustrates the steps involved in the method for preventing vehicles crossing from a red traffic signal that indicates to stop the vehicle, according to the present invention.

Detailed Description of the Drawings

[0013] Fig. 1 illustrates an exemplary block diagram 100 of a system for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle according to the present invention. The system for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle preferably comprises at least one signal transmitter provided at traffic signal location, at least one signal receiver 4 provided inside at least one wheel 3 of the vehicle, at least one breather valve 6 provided in at least one wheel 3 of the vehicle, and at least one control block 5 provided inside at least one wheel 3 of the vehicle. The signal transmitter 2 provided for transmitting an alert signal 7 to the signal receiver 4 when the vehicle from crossing the red traffic signals. The signal receiver 4 connected to the control block 5 for transferring the received alert signal 7 from the signal transmitter 2 to the control block 5. The control block 5 configured for controlling and/or opening the breather valve 6 that is attached to the control block 5. The alert signal 7 enables the control block 5 for sending control signal to open the breather valve 6 to release air from the wheel 3 tire 9 for a predetermined time thereby to alert a driver of the vehicle for preventing the vehicle from crossing the red signal.

[0014] This solution is beneficial since such a system for preventing the driver from violating the traffic rules and also prevents others from a risk of an accident. The invention provides the easiest way to get attention of the driver to the red traffic light by alerting precisely that the vehicle may reduce speed and needs to inflate the tire at least partly again after passing through a red light.

[0015] Fig. 2 illustrates an exemplary position 200 of the signal transmitter 2 provided in the system, according to the embodiment of the present invention. According to the preferable embodiment, a plurality of signal transmitters 2 are provided under a road near a zebra crossing 8 and/or provided besides a traffic signal indicator 1. The signal transmitter 2 can transmit signals in form of light waves or sound waves. The light waves may include but not limited to infrared (IR), visible light, laser and other light waves.

[0016] Fig. 3 illustrates an exemplary position 300 of the breather valve 6 in the wheel 3 of the vehicle, according to the embodiment of the present invention. The breather valve 6 is attached to the control block 5 that is provided inside the wheel 3. The control block 5 is attached to the signal receiver 4 to receive the alerting signal from the signal transmitter 2. The breather valve 6 is made to open for a duration ranging from 5 seconds to 15 seconds. The breather valve 6 is controlled electromechanically by the control block 5. The release of air from the tire 9 due to violation of traffic rules by a driver reduces a pressure inside the tire 9 thereby to make the vehicle movement difficult.

[0017] This system is beneficial since the system can work even in places where there are no police or camera control systems provided in the roads to control traffic. Strictly the drivers / users can not violate the traffic rules hence the driver get to know that there is a side effect for the traffic rules violation.

[0018] Fig. 4 illustrates the steps involved 400 in the method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle according to the embodiment of the present invention. The method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle preferably comprising the steps of transmitting an alert signal 7 to a wheel 3 of the vehicle when the vehicle from crossing the red traffic signal, receiving the alert signal 7 inside the wheel 3 of the vehicle, transferring the received alert signal 7 to control a breather valve 6 provided in the wheel 3 of the vehicle, opening the breather valve 6 electromechanically to release air from the wheel 3 tire 9 for a predetermined time, and alerting a driver of the vehicle for preventing the vehicle from crossing the red traffic signal. The method further comprising the step of keeping the breather valve 6 remain in an open position for a duration ranging from 5 seconds to 15 seconds.

[0019] According to an exemplary embodiment, more specifically, the method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle comprising the steps of

at block 10, an alert signal 7 from the signal transmitter 2 is transmitted to a wheel 3 of the vehicle when the vehicle crossing from the red traffic signal,

at block 11, the alert signal 7 is received inside the wheel 3 of the vehicle through the signal receiver 4,

at block 12, the received alert signal 7 is transferred to a control block 5 to control a breather valve 6 provided in the wheel 3 of the vehicle,

at block 13, the breather valve 6 is opened by an electromechanical means to release air from the wheel 3 tire 9 for a predetermined time. The breather valve 6 is kept to be remain in open state for a duration ranging from 5 seconds to 15 seconds,

at block 14, a driver of the vehicle is alerted for preventing the vehicle from crossing the red traffic signal. Hence the release of air from the tire 9 can make the tire 9 to slow down the movement of the vehicle.

[0020] Thus, a system and a method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle are achieved. The system for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle preferably comprises of, at least one signal transmitter 2 provided at traffic signal location, at least one signal receiver 4 provided inside at least one wheel 3 of the vehicle, at least one breather valve 6 provided in at least one wheel 3 of the vehicle, and at least one control block 5 provided inside at least one wheel 3 of the vehicle. The signal transmitter 2 provided for transmitting an alert signal 7 to the signal receiver 4 when the vehicle crossing from the red traffic signals. The signal receiver 4 connected to the control block 5 for transferring the received alert signal 7 from the signal transmitter 2 to the control block 5. The control block 5 configured for controlling and/or opening the breather valve 6 that is attached to the control block 5. The alert signal 7 enables the control block 5 for sending control signal to open the breather valve 6 to release air from the wheel 3 tire 9 for a predetermined time thereby to alert a driver of the vehicle for preventing the vehicle from crossing the red signal.

List of reference numbers

[0021]

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|----|---|--|
| 1 | traffic signal indicator | |
| 2 | signal transmitter | |
| 3 | wheel | |
| 4 | signal receiver | |
| 5 | control block | |
| 6 | breather valve | |
| 7 | alert signal transfer between the signal transmitter and the signal receiver | |
| 8 | zebra crossing | |
| 9 | wheel tire | |
| 10 | transmitting an alert signal to a wheel of the vehicle when the vehicle crossings from the red traffic signal | |
| 11 | receiving the alert signal inside the wheel of the vehicle | |
| 12 | transferring the received alert signal to control a breather valve provided in the wheel of the vehicle | |
| 13 | opening the breather valve electromechanically to release air from the wheel tire for a predetermined time | |
| 14 | alerting a driver of the vehicle for preventing the vehicle crossing from the red traffic signal | |

Claims

1. A system for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle, wherein the system comprises at least one signal transmitter 2 provided at traffic

signal location, at least one signal receiver 4 provided inside at least one wheel 3 of the vehicle; at least one breather valve 6 provided in the wheel 3 of the vehicle, and at least one control block 5 provided inside the wheel 3 of the vehicle; wherein the signal transmitter 2 is provided for transmitting an alert signal 7 to the signal receiver 4 when the vehicle crosses the red traffic signal; wherein the signal receiver 4 is connected to the control block 5 for transferring the received alert signal 7 from the signal transmitter 2 to the control block 5; wherein the control block 5 is configured for controlling and/or opening the breather valve fi that is attached to the control block 5; wherein the alert signal 7 enables the control block 5 for sending a control signal to open the breather valve 6 to release air from the wheel 3 for a predetermined time thereby to alert a driver of the vehicle for preventing the vehicle from crossing the red signal.

2. The system of claim 1, wherein the signal transmitter 2 is provided under a road near a zebra crossing 8 and/or provided besides a traffic signal indicator 1.
3. The system of claim 1, wherein the breather valve 6 is able to open for a duration ranging from 5 seconds to 15 seconds.
4. The system of claim 1, wherein the breather valve 6 is controlled electromechanically by the control block 5.
5. The system of claim 1, wherein the release of air from the a tire 9 of the wheel 3 due to violation of traffic rules by a driver reduces a pressure inside the tire 9 thereby to make the vehicle movement difficult.
6. A method for preventing vehicles from crossing a red traffic signal that indicates to stop the vehicle, wherein the method comprising the steps of, transmitting an alert signal 7 to a wheel 3 of the vehicle when the vehicle crossing from the red traffic signal; receiving the alert signal 7 inside the wheel 3 of the vehicle; transferring the received alert signal 7 to control a breather valve 6 provided in the wheel 3 of the vehicle; opening the breather valve 6 electromechanically to release air from the wheel 3 for a predetermined time; and alerting a driver of the vehicle for preventing the vehicle from crossing the red traffic signal.
7. The method of claim 6, wherein the method further comprising the step of keeping the breather valve 6 remain in open for a duration ranging from 5 seconds

to 15 seconds.

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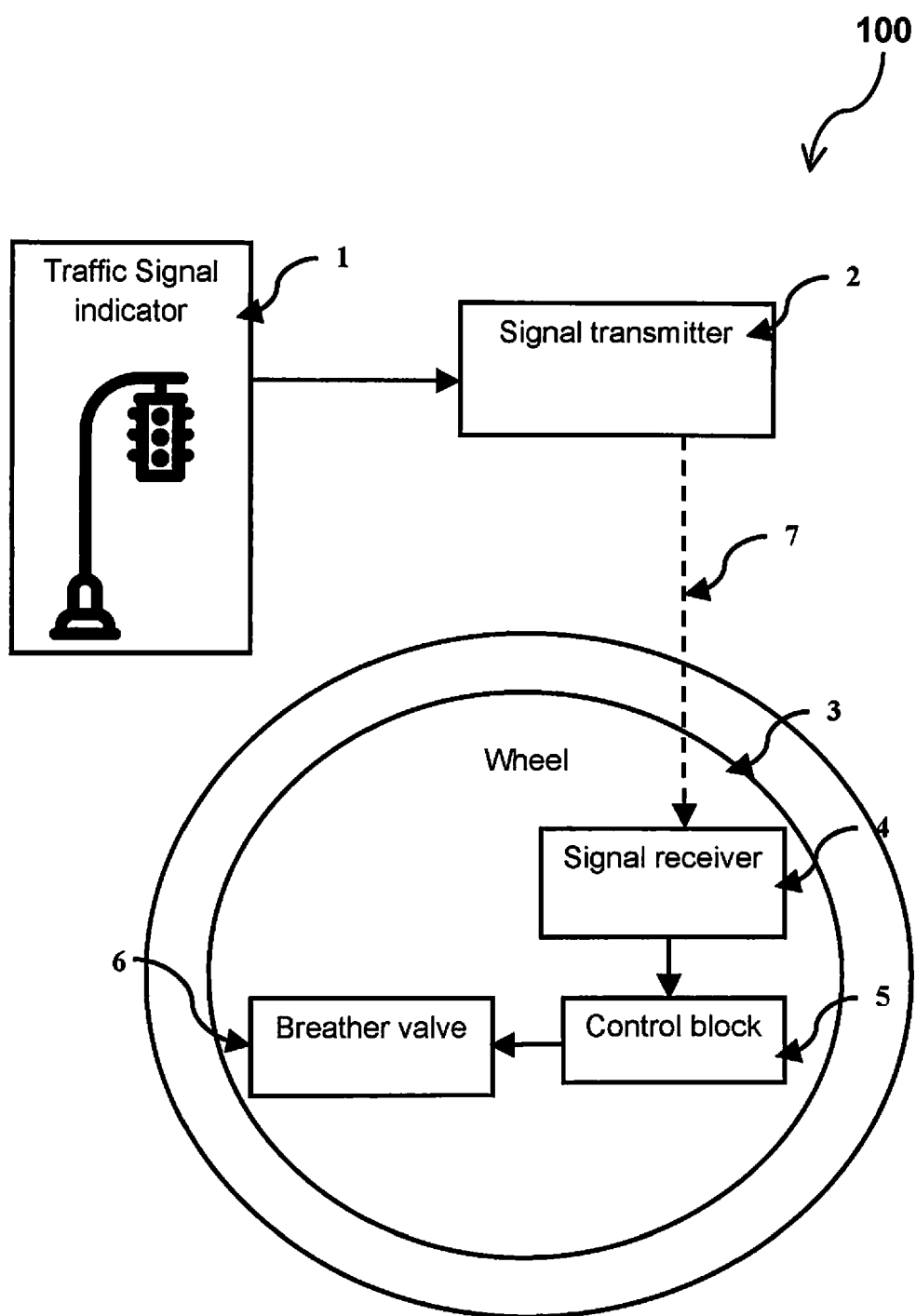


Fig. 1

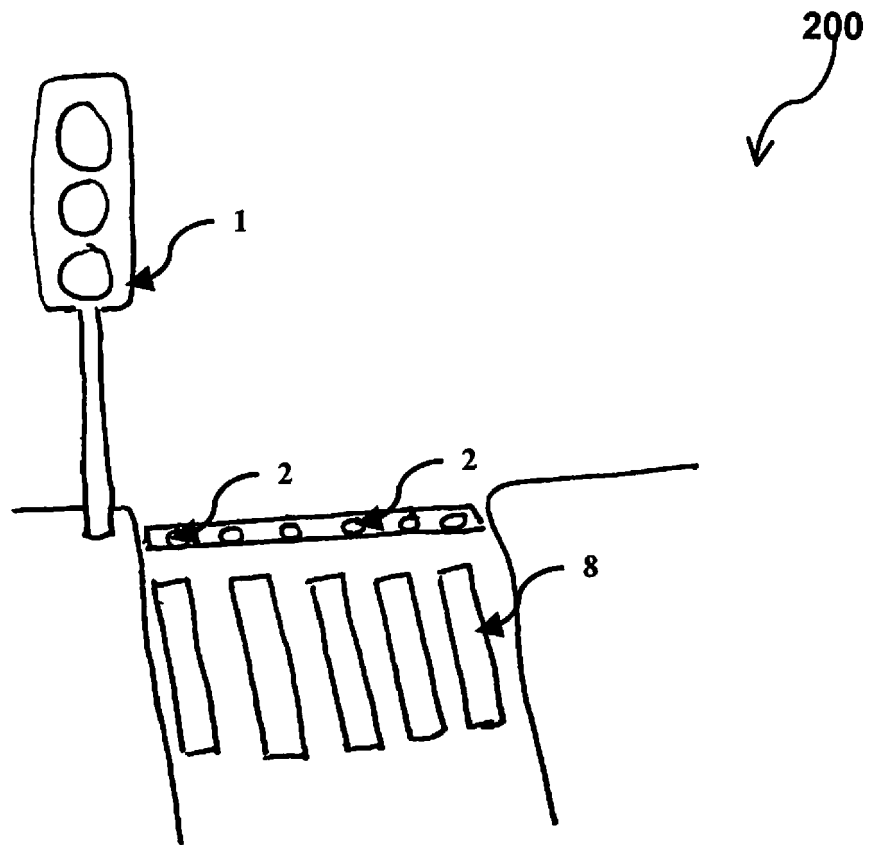


Fig. 2

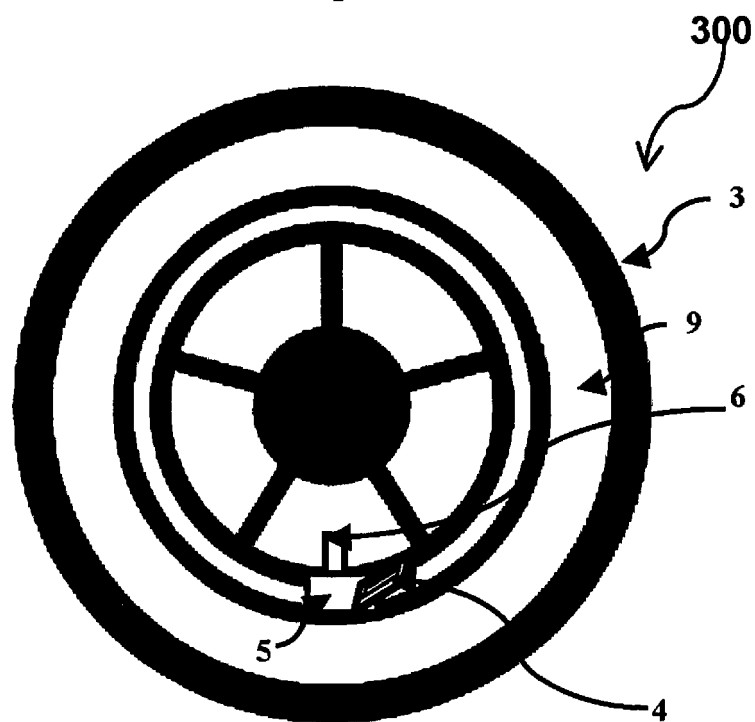


Fig. 3

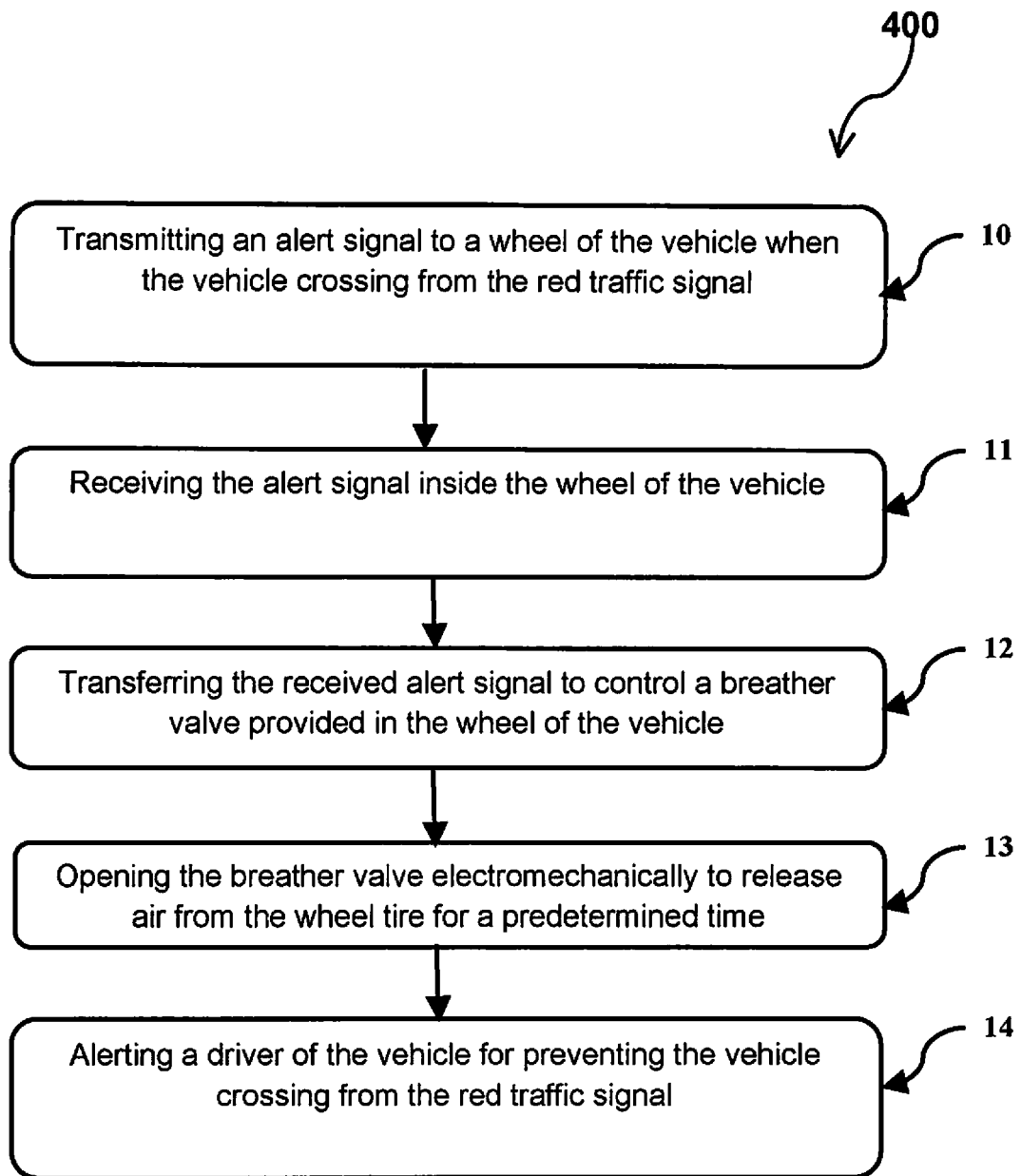


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 17 20 4414

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2007/222638 A1 (CHEN YANG [US] ET AL) 27 September 2007 (2007-09-27) * abstract * * paragraphs [0018] - [0020], [0025] - [0029] * * figures 1, 2 *	1-7	INV. G08G1/095 G08G1/0967
A	US 2007/080012 A1 (RASTEGAR JAHANGIR S [US] ET AL) 12 April 2007 (2007-04-12) * abstract * * paragraphs [0002], [0092], [0094] * * figure 13 *	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
			G08G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 2 May 2018	Examiner Van den Bosch, I
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 20 4414

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The members are as contained in the European Patent Office EDP file on
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02-05-2018

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007222638 A1	27-09-2007	NONE	
US 2007080012 A1	12-04-2007	NONE	

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