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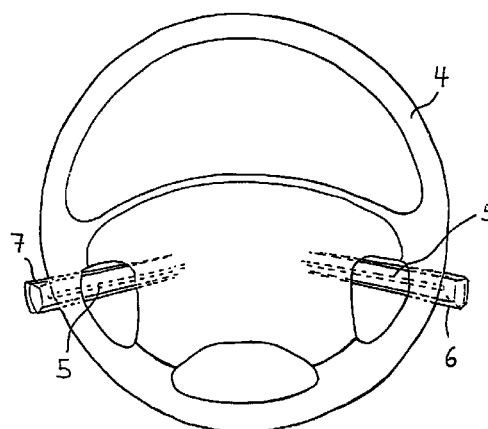
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(54) **Device for keyless locking and unlocking of motor vehicle doors**

(57) Described is a device for keyless locking and unlocking of motor vehicle doors, comprising a remote control with a transmitter, a control element located in the motor vehicle, said control element controlling the respective locking mechanism of the door, and a receiving aerial associated with the control element. In order to create such a device with a powerful receiving aerial for ultra high frequency signals, it is proposed that the receiving aerial (5) be arranged in at least one of the control stalks (6, 7) of the motor vehicle.

FIG. 2



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Description

[0001] The invention relates to a device for keyless locking and unlocking of motor vehicle doors, comprising a remote control with a transmitter, a control element located in the motor vehicle, said control element controlling the respective locking mechanism of the door, and a receiving aerial associated with the control element.

[0002] Already many motor vehicles are equipped with devices of the type mentioned above.

[0003] It is the object of the present invention to create a device of the type mentioned in the introduction, which comprises a particularly powerful aerial for receiving ultra high frequency transmission signals.

[0004] In a generic device this object is met in that the receiving aerial is arranged in at least one of the control stalks of the motor vehicle. The geometry of usual control stalks makes it possible to accommodate an aerial which is particularly suitable for the frequency range of interest here.

[0005] According to an advantageous embodiment, preferably a conductive structure present within the control stalk forms part of a receiving aerial. For example if the control stalks themselves or their support structure is conductive, they can be used as aerial elements by galvanic or capacitive coupling. Furthermore it is possible to use already existing electrical cables within the stalks as an aerial.

[0006] By contrast, where the control stalks are made of plastic, an alternative embodiment provides for a conductive structure to form a receiving aerial which is embedded therein.

[0007] Below, the invention is explained in detail by means of a drawing showing one embodiment, as follows:

Fig. 1 is a perspective view of a vehicle equipped with a device according to the invention; and

Fig. 2 is a diagrammatic front view of a steering wheel with two control stalks arranged on it.

[0008] Fig. 1 shows a motor vehicle equipped with a remote-control device 1 for locking and unlocking the vehicle doors 2. The battery-operated remote-control device comprises a transmitter with control electronics and comprises a lock button as well as an unlock button. The remote control device transmits ultra high frequency signals.

[0009] In the vehicle, a receiving aerial is arranged which receives the transmission signals of the remote control device 1 and conveys them to a control element. The control element locks or unlocks the locks of the vehicle doors 2, depending on which button 3 of the remote control device 1 was activated.

[0010] Fig. 2 shows the steering wheel 4 of the vehicle. As shown diagrammatically, the receiving aerial

5 is arranged in the control stalks 6, 7 which are themselves arranged on the steering wheel 4. Due to their layout, the control stalks 6, 7 make it possible to accommodate a powerful receiving aerial for the UHF range.

[0011] The left control stalk 7 serves to activate the turn signal indicator, while the right control stalk 6 among other things serves to operate the windscreen wipers. Both control stalks 6, 7 are made of plastic and comprise an aerial conductor 5 which has been injection moulded into each of them.

[0012] Often, the control stalks also incorporate electrical switches (not shown) such as e.g. a cruise control switch or an interval switch for the rear windscreen wiper. According to a preferred embodiment of the invention, the electrical cables leading to such switches can be additionally used as aerial elements if required.

Claims

1. A device for keyless locking and unlocking of motor vehicle doors, comprising a remote control with a transmitter, a control element located in the motor vehicle, said control element controlling the respective locking mechanism of the door, and a receiving aerial associated with the control element, characterised in that the receiving aerial (5) is arranged in at least one of the control stalks (6, 7) of the motor vehicle.
2. A device according to claim 1, characterised in that a conductive structure present within the control stalk (6, 7) forms part of a receiving aerial.
3. A device according to claim 1, characterised in that the control stalks (6, 7) are made of plastic, with a conductive structure to form a receiving aerial (5) being embedded in them.

FIG. 1

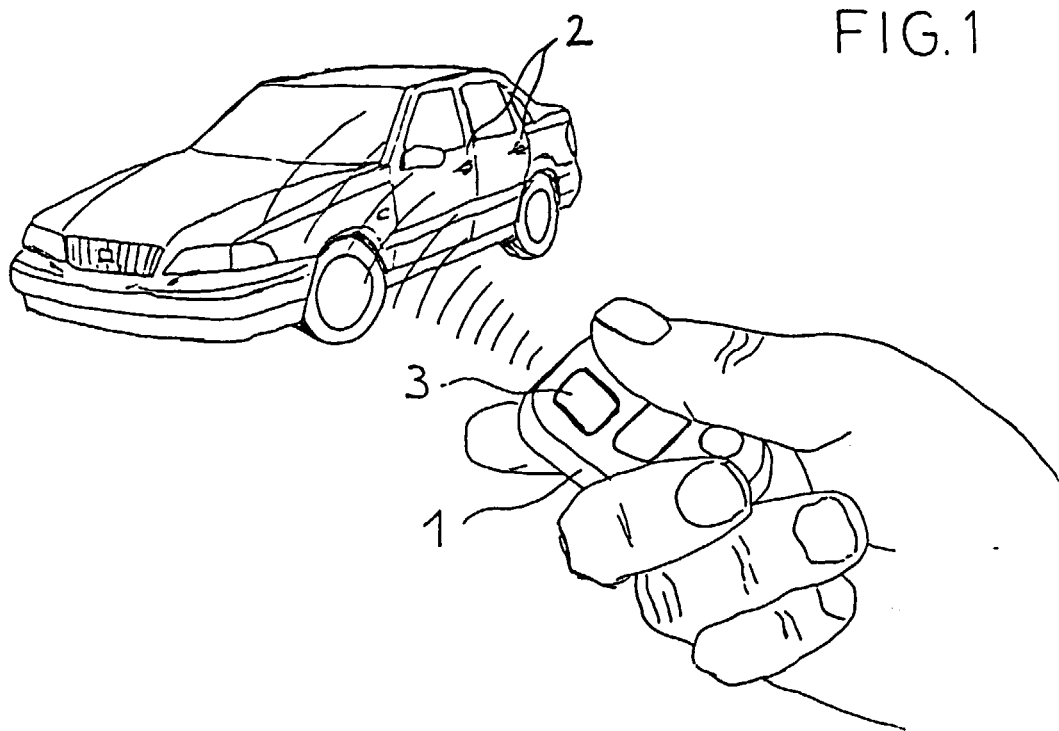


FIG. 2

