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GB 2567811 A
GB 2470067 A
JP 2012110916 A
JP 2011126179 A
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(54) Title of the Invention: **Method for producing an ornamental design in a clearcoat layer**
Abstract Title: **Method for producing an ornamental design in a clearcoat layer**

(57) A method for producing an ornamental design 0 in a clearcoat layer K is disclosed. The ornamental design is produced by a selective matting of the clearcoat layer by means of a working of the clearcoat layer by a laser. The working of the clearcoat layer is preferably performed by means of a UV laser. Preferably, the working of the clearcoat layer is performed by means of electromagnetic waves with a wavelength of about 355 nm. Further the working of the clearcoat layer is preferably performed by means of a laser operating at a frequency of about 23,500 Hz. Preferably, the working of the clearcoat layer is performed by means of a laser operating with a pulse duration of about 2µs. The working of the clearcoat layer is preferably performed by means of a laser operating with a line spacing of about 0.03 mm. The invention also relates to a component for a motor vehicle, in particular a body component for a motor vehicle
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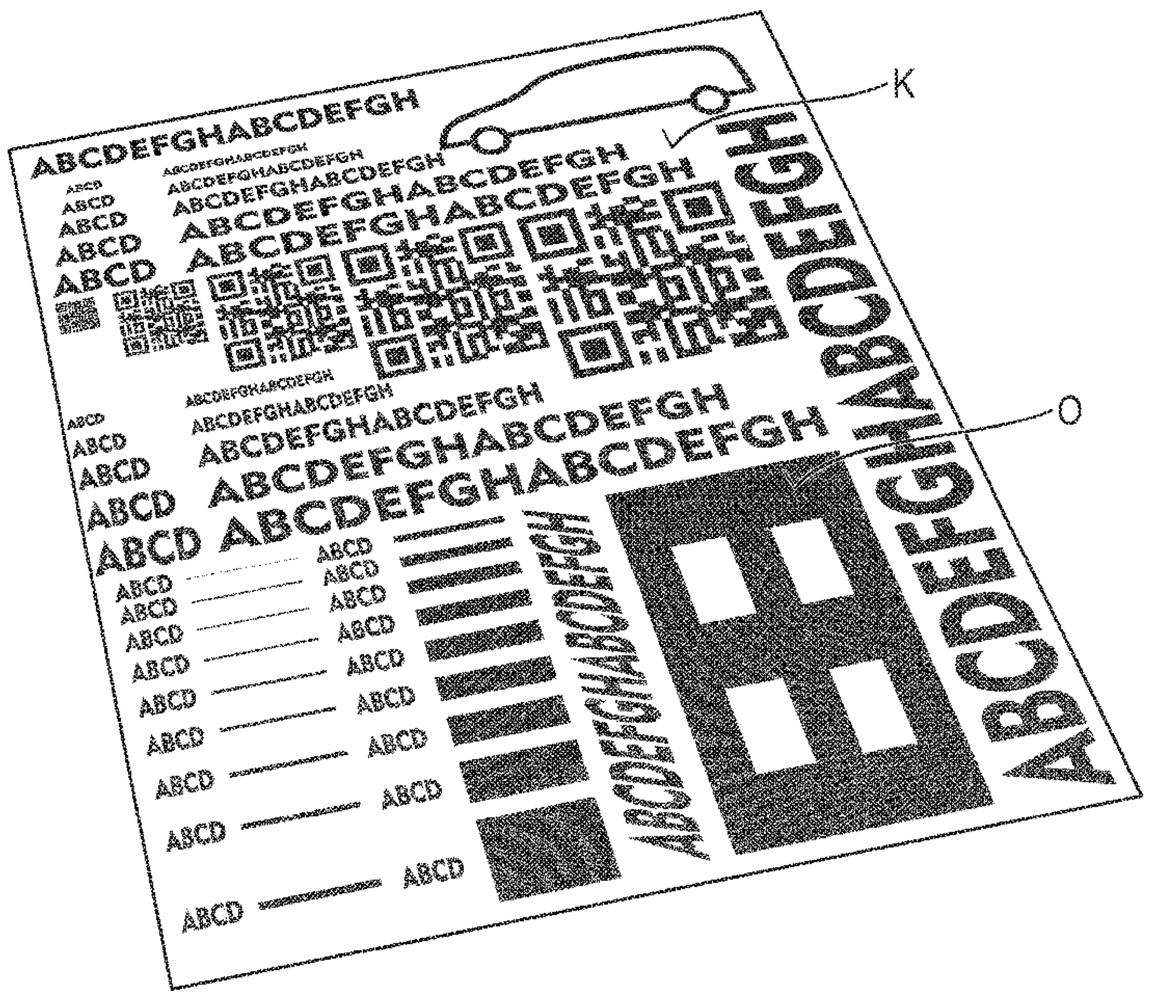

Fig. 1

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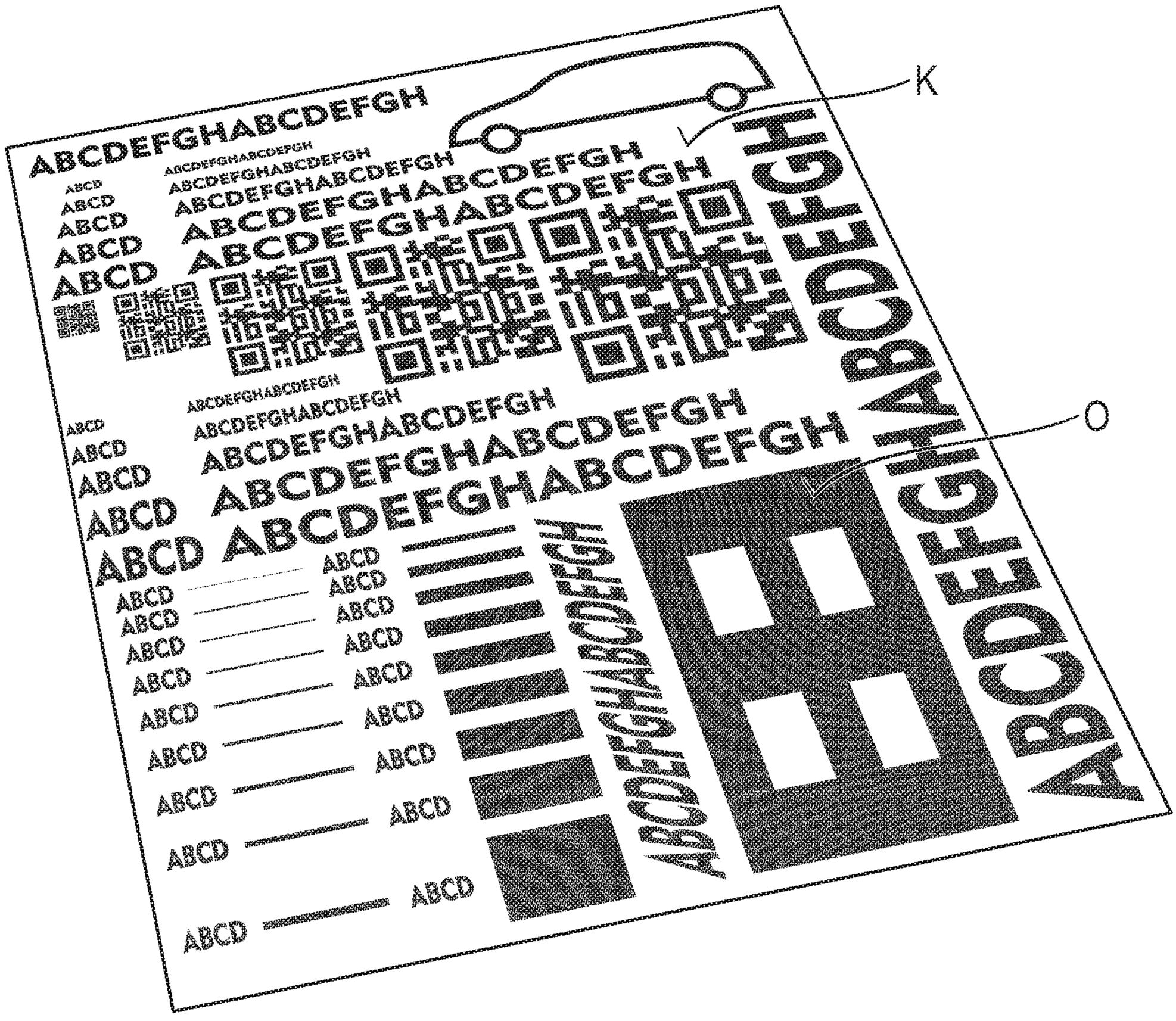

Fig. 1

Method for producing an ornamental design in a clearcoat layer

The invention relates to a method for producing an ornamental design in a clearcoat layer, to a component for a motor vehicle with a clearcoat layer and an ornamental design produced by such a method in the clearcoat layer and to a motor vehicle comprising such a component.

The printed document DE 10 2014 202 603 A1 discloses a method for producing an ornamental design in a clearcoat layer. The ornamental design is in this case introduced into the clearcoat layer mechanically by means of a rotating removal element, in that three-dimensional depressions are produced in the clearcoat layer.

The present invention seeks to propose a method for producing an ornamental design in a clearcoat layer that is distinguished by a quicker working time and less preliminary work.

The may be achieved by a method as claimed in claim 1, a component as claimed in claim 7 and a motor vehicle as claimed in claim 8.

The method according to an aspect of the invention is characterized in that the ornamental design is produced by a selective matting of the clearcoat layer by means of a working of the clearcoat layer by a laser.

The method according to an aspect of the invention allows a quicker working time to be achieved. There is no further preliminary work. Thus, in particular, the prior application of a film to the clearcoat layer is unnecessary.

In a preferred refinement, the working of the clearcoat layer is performed by means of a UV laser.

Preferably, the working of the clearcoat layer is performed by means of electromagnetic

waves with a wavelength of about 355 nm.

In a preferred refinement, the working of the clearcoat layer is performed by means of a laser operating at a frequency of about 23 500 Hz.

Preferably, the working of the clearcoat layer is performed by means of a laser operating with a pulse duration of about 2 µs.

In a preferred refinement, the working of the clearcoat layer is performed by means of a laser operating with a line spacing of about 0.03 mm.

The invention also relates to a component for a motor vehicle, in particular a body component for a motor vehicle, with a clearcoat layer and an ornamental design produced by the method according to the invention in the clearcoat layer.

Finally, the invention relates to a motor vehicle comprising a component according to the invention.

Details and further advantages of the method according to the invention for producing an ornamental design in a clearcoat layer are explained on the basis of the exemplary embodiment described below. In the illustration:

Figure 1 shows a perspective view of a component having a clearcoat layer in which an ornamental design has been produced by means of the method according to the invention.

The application relates to a method for producing an ornamental design O in a clearcoat layer K. The ornamental design O is produced by a selective matting of the clearcoat layer K by means of a working of the clearcoat layer K by a laser.

The method according to the application allows a quicker working time to be achieved. There is no further preliminary work. Thus, in particular, the prior application of a film to the

clearcoat layer is unnecessary.

The working of the clearcoat layer K may be performed by means of a UV laser.

The working of the clearcoat layer K may be performed by means of electromagnetic waves at a wavelength of about 355 nm.

The working of the clearcoat layer K may be performed by means of a laser operating at a frequency of about 23 500 Hz.

The working of the clearcoat layer K may be performed by means of a laser operating with a pulse duration of about 2 µs.

The working of the clearcoat layer K may be performed by means of a laser operating with a line spacing of about 0.03 mm.

The application also relates to a component for a motor vehicle, in particular a body component for a motor vehicle, with a clearcoat layer K and an ornamental design O produced by the method according to the application in the clearcoat layer K.

The working of the clearcoat layer K may be performed by means of a laser of the Trumpf brand, in particular by means of the TruMark 3330 model. In this case, the laser may be operated at a power output of 65% with respect to the maximum output.

Finally, the application relates to a motor vehicle comprising a component according to the application.

Patent claims

1. A method for producing an ornamental design in a clearcoat layer, wherein the ornamental design is produced by a selective matting of the clearcoat layer by means of a working of the clearcoat layer by a laser.

2. The method as claimed in claim 1, wherein the working of the clearcoat layer is performed by means of a UV laser.

3. The method as claimed in either of claims 1 and 2, wherein the working of the clearcoat layer is performed by means of electromagnetic waves at a wavelength of about 355 nm.

4. The method as claimed in any one of claims 1 to 3, wherein the working of the clearcoat layer is performed by means of a laser operating at a frequency of about 23 500 Hz.

5. The method as claimed in any one of claims 1 to 4, wherein the working of the clearcoat layer is performed by means of a laser operating with a pulse duration of about 2 µs.

6. The method as claimed in any one of claims 1 to 5, wherein the working of the clearcoat layer is performed by means of a laser operating with a line spacing of about 0.03 mm.

7. A component for a motor vehicle, in particular a body component for a motor vehicle, with a clearcoat layer and an ornamental design produced by the method as claimed in any one of claims 1 to 6 in the clearcoat layer.

8. A motor vehicle comprising a component as claimed in claim 7.

Intellectual Property Office

Application No:	GB1916367.4	**Examiner:**	Marc Collins
Claims searched:	1-8	**Date of search:**	12 May 2020

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-8	JP 2012110916 A (TRINITY IND. CO. LTD.) See EPODOC abstract; WPI Abstract Accession No. 2012-G70336 and figure 2.
X	1-8	JP 2011126179 A (TRINITY IND. CO. LTD.) See EPODOC abstract; WPI Abstract Accession No. 2011-H36825 and figure 9.
X	1-8	US 4803114 A (SCHLEDORN) See whole document especially figure.
A	-	GB 2567811 A (DE LA RUE INTERNATIONAL LTD.)
A	-	GB 2470067 A (INCA DIGITAL PRINTERS LTD.)

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

Worldwide search of patent documents classified in the following areas of the IPC

B41J; B41M; B60R

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC

Intellectual Property Office

International Classification:

Subclass	Subgroup	Valid From
B41M	0005/26	01/01/2006
B41M	0007/00	01/01/2006
B60R	0013/00	01/01/2006