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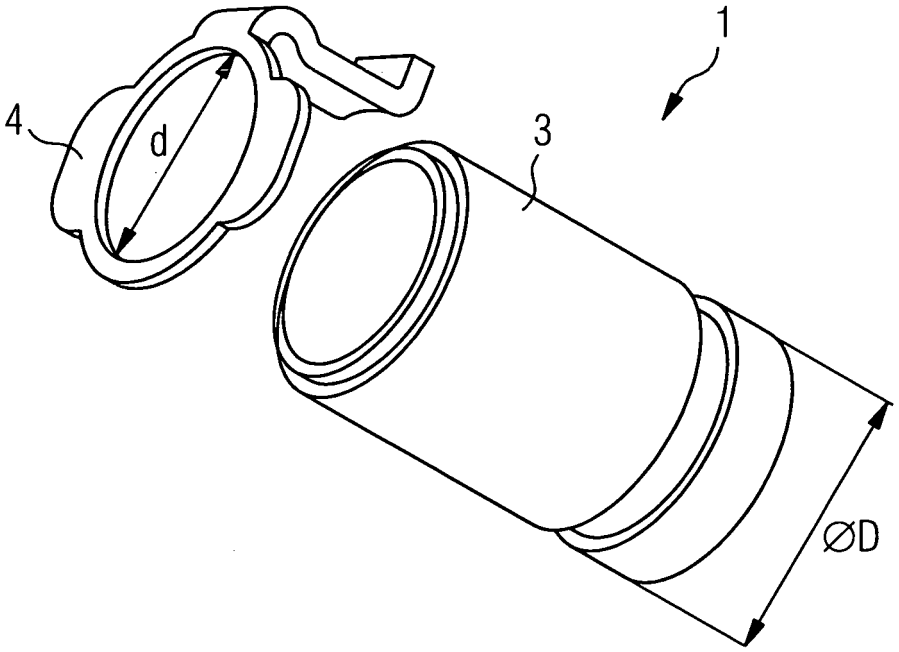
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(54) Mounting element for an injector

(57) The invention relates to a mounting element (1) for an injector (2) of a fuel injection system, comprising at least one sleeve (3) for partially receiving an injector (2) and a mounting plate (4) for mounting the injector (2) onto a motor vehicle. The sleeve (3) and the mounting plate (4) are configured here as two individual components. The use of two individual components for manufacturing the mounting element allows these to be particularly easily and cost-effectively manufactured. The material wastage can be reduced to a minimum, thereby significantly reducing material costs.

FIG 1



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Description

[0001] The invention relates to a mounting element for an injector of a fuel injection system as well as an injector with such a mounting element.

[0002] Injectors generally serve to inject finely atomized fuel into the combustion chamber of an internal combustion engine. During the injection process, the injectors generate a spray cone, which must be formed in the combustion chamber in a precisely defined region. For this purpose, it is necessary for the injector to be fixed in a completely specific position. To achieve this, the injector is mounted onto the cylinder head of the internal combustion engine by means of a mounting element.

[0003] A mounting element known from the prior art is displayed in Figure 4. The mounting element is manufactured in one piece from a tubular round component. The tubular base plate is made of a thick-walled material which is trued on one end of the tubular base plate until it achieves a narrow mounting coil. The manufacture is thereby very labor-intensive and time-consuming and is associated with a high material wastage.

[0004] Starting from the prior art, it is thus the object of the invention to provide a mounting element which can manufactured in a simple and rapid manner and with which only a minimal material wastage occurs.

[0005] The object is achieved by the independent claim 1.

[0006] Further advantageous embodiments of the invention which can be applied individually or in combination with one another are set down in the subclaims.

[0007] The mounting element according to the invention for an injector of a fuel injection system is characterized by at least one sleeve for partially receiving an injector and a mounting plate for mounting an injector onto a motor vehicle, with the sleeve and the mounting plate being embodied as two individual components. The two-part embodiment of the mounting element allows the shell to be manufactured from a thin-walled material. Subsequently, the mounting plate can be easily attached to the sleeve. The individual components can thus be manufactured with a very minimal material wastage, which results in low material costs and additionally reduces the processing time for manufacturing the mounting element.

[0008] A particularly advantageous embodiment of the invention is characterized in that the sleeve is configured essentially cylindrical and complementary to a cylindrically configured mounting region of the injector. In this case, the cylindrical sleeve can be formed from a conventional tube. In particular, drawn tubes are suitable for this purpose. These feature a high dimensional accuracy so that only a minimal post-processing is required. Drawn tubes are available at low cost in a very wide variety of sizes. The mounting plate can in turn be subsequently attached to the cylindrical sleeve of the mounting element in a simple manner.

[0009] A further special embodiment of the invention provides for the mounting plate to be attached to the sleeve by means of welding or soldering. The welding or soldering offers a simple, safe and cost-effective option for securely connecting the mounting plate to the sleeve.

[0010] In accordance with the invention, the mounting plate preferably comprises a circular flange, the internal diameter of which corresponds to the external diameter of the cylindrical sleeve, so that the mounting plate can be moved onto the external diameter of the cylindrical sleeve and can be particularly easily mounted.

[0011] An exemplary embodiment of the invention as well as further advantages are described below with reference to the figures, in which;

Figure 1 shows a schematic representation of a claimed two-part mounting element with a sleeve and a mounting plate in an unmounted state;

Figure 2 shows a schematic detailed view of a mounting plate according to Figure 1,

Figure 3 shows a schematic representation of a claimed two-part mounting element in accordance with Figure 1 in a mounted state

Figure 4 shows a schematic representation of an injector with a mounting element according to the prior art.

[0012] Identical as well as functionally identical components are provided below with the same reference characters.

[0013] Figure 1 shows an exemplary embodiment of a claimed two-part mounting element 1 in the unmounted state. The mounting element 1 is made of an essentially cylindrically embodied sleeve 3 and a mounting plate 4. As illustrated in the detailed view in Figure 2, the mounting plate 4 comprises a circular flange 5. The circular flange 5 has an internal diameter d which corresponds to the external diameter D of the cylindrical sleeve 3. The mounting plate 4 can be easily moved onto and fixed to the external diameter D of the cylindrical sleeve 3. The mounting plate 4 is advantageously mounted to the cylindrical sleeve 3 by means of welding or soldering. Other mounting methods such as gluing or press fitting are however also conceivable.

[0014] The mounting plate 4 can be particularly easily manufactured by means of deep-drawing. During the deep-drawing process, the hole with the internal diameter d can be simultaneously punched out of the mounting plate 4. The deep-drawing of the mounting plate 3 enables a particularly cost-effective, simple and rapid manufacture. This hereby allows the mounting plate 4 to be directly formed into its final state in one production step, thereby rendering reworking unnecessary.

[0015] The cylindrical sleeve 3 can be manufactured from a simple conventional tube. Drawn tubes are particularly suitable here, since these feature a particularly

high surface quality and a high dimensional accuracy. By virtue of the fact that the mounting element 1 is configured to consist of two parts, it is no longer necessary to select a sleeve with thick wall thicknesses and then to true these until a narrow mounting coil is achieved. In fact, the tube must still only be minimally reworked. In comparison with the single-part embodiment of the mounting known in the prior art, the manufacture can thus be essentially simplified. The use of two-part components allows a high material wastage to be avoided and considerably reduces the manufacture time.

[0016] After the mounting plate 4 has been drawn over the cylindrical sleeve 3 and mounted by means of welding or soldering (see Figure 3), the mounting element 1 can be moved over a cylindrical mounting region configured on the injection and can be permanently fixed to the injector. This process is identical to the prior art. The injector does not have to be specially adjusted. Older injectors can thus also be reconditioned at any time with the new two-part mounting element 1. The mounting element 1 and the injector are preferably connected by means of welding or soldering.

[0017] After the mounting element 1 is connected to the injector, the injector can be inserted into the cylinder head and can be preferably mounted onto the cylinder head with the mounting plate 4. In this way, the mounting plate 4 is preferably configured such that the injector can only be inserted in a definite arrangement. This ensures that the injector is always mounted into the cylinder head in the prescribed manner.

[0018] In summary, it may be said that the two-part embodiment of the mounting element 1 provides a particularly simple option for manufacturing the mounting element 1. To this end, a high material wastage can be avoided. The two components of the mounting element 1 can be manufactured from standard components in a simple manner.

Claims

1. Mounting element (1) for an injector (2) of a fuel injection system comprising at least

- a sleeve (3) for partially receiving the injector (2) and
- a mounting plate (4) for mounting the injector (2) onto a motor vehicle,

with the sleeve (3) and the mounting plate (4) being configured as two individual components.

2. Mounting element according to claim 1, **characterized in that** the sleeve (3) is configured essentially cylindrical and complementary to a cylindrically configured mounting region of the injector (2).

3. Mounting element according to claim 1 or 2, **characterized in that** the mounting plate (4) is a deep drawn component.

4. Mounting element according to one of the preceding claims, **characterized in that**
the mounting plate (4) is mounted to the sleeve (3) by means of welding or soldering.

5. Mounting element according to one of the claims 2 to 4, **characterized in that**
the mounting plate (4) comprises a circular flange (5), the internal diameter (d) of which corresponds to the external diameter (D) of the cylindrical sleeve (3), in such a way that the mounting plate (4) can be moved and mounted onto the external diameter (D) of the cylindrical sleeve (3).

6. Injector (2) with a mounting element according to one of the preceding claims

FIG 1

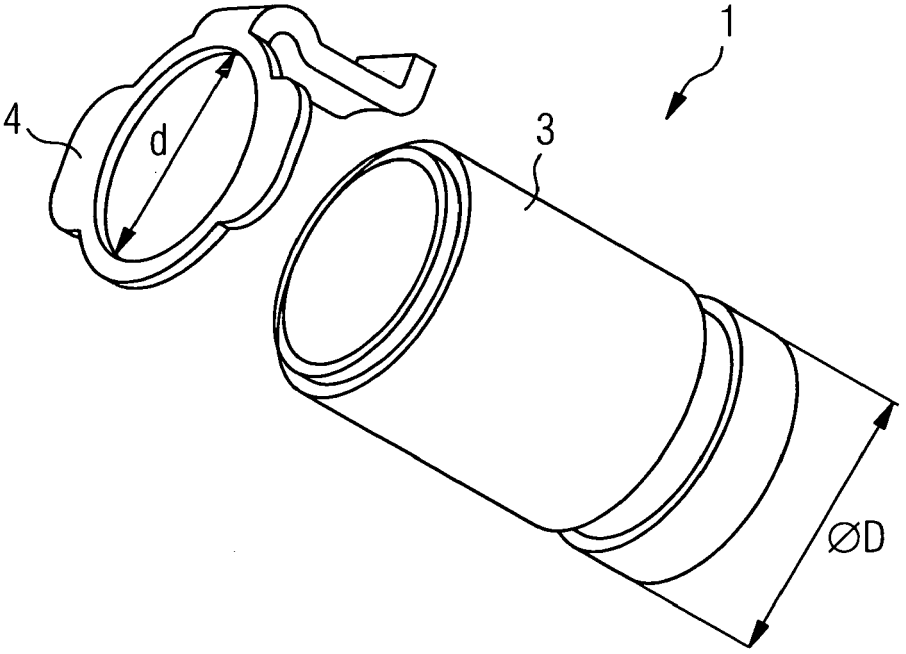


FIG 2

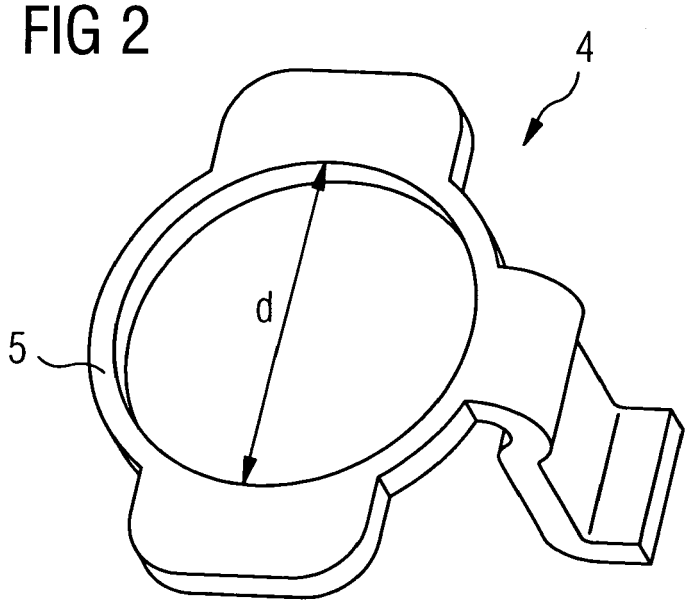


FIG 3

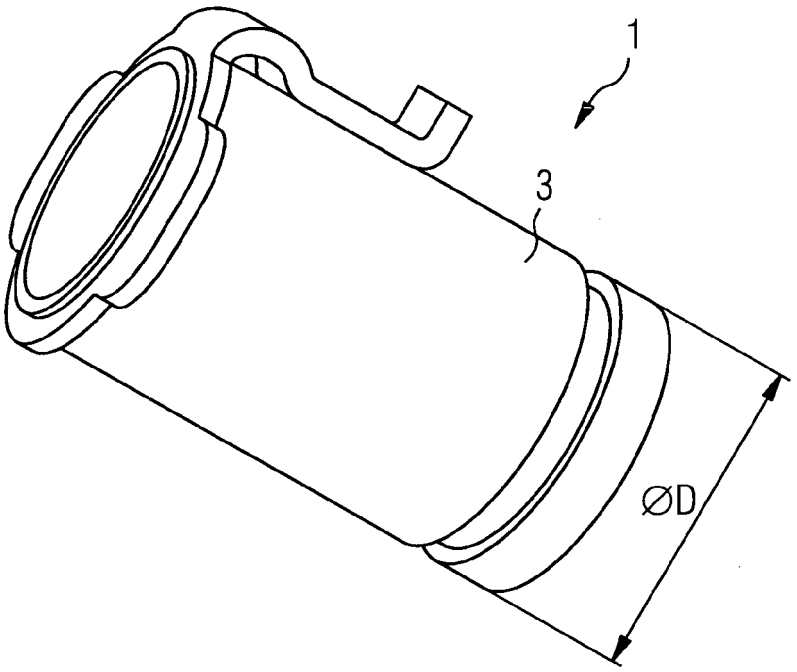
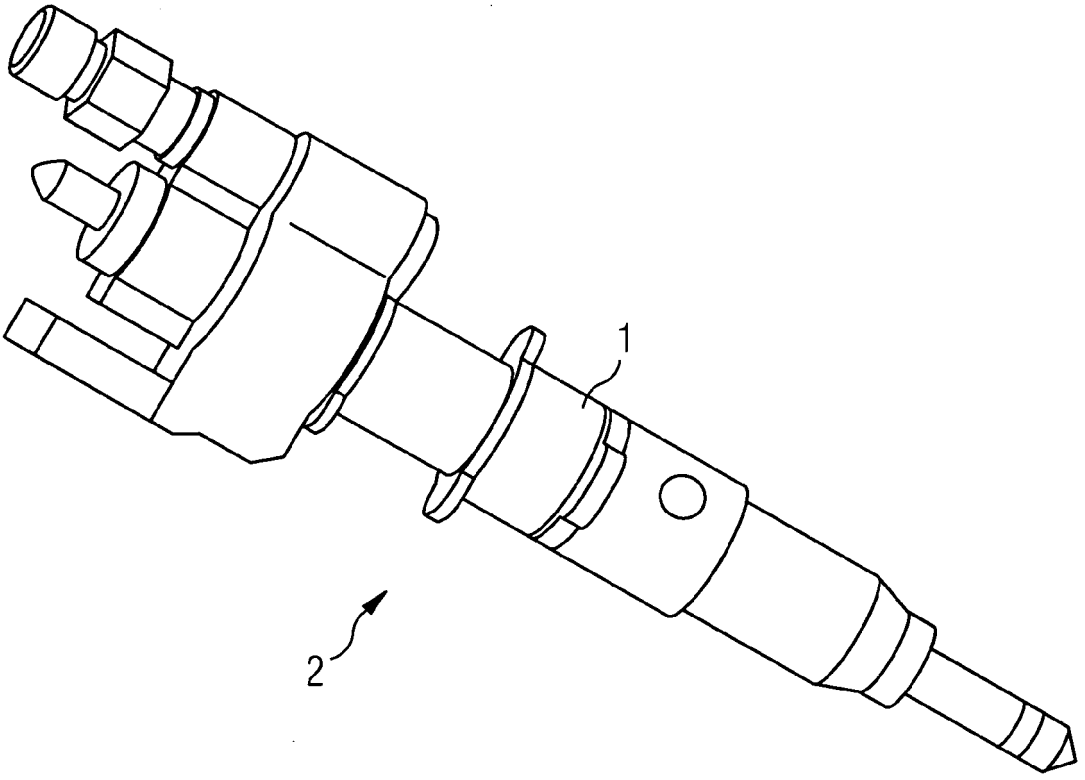


FIG 4



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EUROPEAN SEARCH REPORT

Application Number
EP 06 00 8956

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

F02M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	12 September 2006	Morales, Miguel

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 06 00 8956

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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12-09-2006

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