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(54) **Protective cover for an electric grinding machine**

(57) Grinding machine, comprising a motor part (1), a transmission part (2), a drive spindle, a connection part for mounting a grinding disk (3) to the drive spindle and a safety and exhaust cover (5) which partly covers the grinding disk when mounted to the drive spindle, which cover is mounted to a bearing shaft (4) which surrounds said drive spindle. A flexible interface between said cover

and said bearing shaft is arranged in a way that the cover is movable w.r.t. said bearing shaft. The flexible interface may comprise an O-ring (8) between the cover and the bearing shaft which may be made of a natural or synthetic rubber or elastomer.

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Description

[0001] The invention concerns an electric grinding machine which is especially intended for deburring, i.e. grinding burrs of e.g. metal constructions etc.

[0002] The present invention aims to present a grinding machine which has improved capabilities with respect to the exhaust efficiency of the particles which release during deburring and with respect to the ergonomics and manoeuvrability of the machine.

[0003] To that end in the grinding machine - comprising a motor part, a transmission part, a drive spindle, a connection part for mounting a grinding disk to the drive spindle and a safety and exhaust cover which partly covers the grinding disk when mounted to the drive spindle, which cover is mounted to a bearing shaft which surrounds said drive spindle - according to the invention comprises a flexible interface between said cover and said bearing shaft, enabling that the cover is movable - with respect to the shaft and - in consequence - with respect to the rest of the whole machine.

[0004] The flexible interface between the machine's cover and bearing shaft is preferably arranged in a way that the cover is movable along the axis of the bearing shaft. Preferably, the flexible interface between the machine's cover and bearing shaft is, moreover, arranged in such way that the cover is pivotally movable around the axis of the bearing shaft.

[0005] As will be clear from the accompanying figure, a preferred embodiment of the flexible interface comprises an O-ring of a flexible material between the cover and the bearing shaft, which O-ring may be made of a natural or synthetic rubber or elastomer.

Figure 1 shows such a preferred embodiment of the grinding machine according to the invention.

[0006] The grinding machine shown in figure 1 comprises a motor part 1, a square, block shaped transmission part 2, a drive spindle (not shown explicitly), including a connection part for mounting a grinding disk 3 to the drive spindle and a bearing shaft 4 which surrounds said drive spindle.

[0007] The grinding machine may be provided with a detachable cover 5 which - when mounted to the bearing shaft surrounding the drive spindle - partly covers the grinding disk for personal safety and forming an exhaust nozzle with which can be connected, via a connection part 6 with a exhaust system (not shown).

[0008] In the figure the cover 5 comprises an mounting part 7 the inside shape and dimensions of which are compatible with the outside shape and dimensions of the bearing shaft 4.

[0009] Between the bearing shaft 4 and the cover's mounting part 7 a flexible interface is provided which is arranged in a way that the cover is movable with respect to said bearing shaft. In the shown embodiment the flexible interface is formed by an O-ring 8 between the mount-

ing part 7 of the cover 5 and the bearing shaft 4, made of a natural or synthetic rubber or elastomer. The O-ring may be accommodated in a groove (not explicitly shown) in the outside of the bearing shaft 4. Moreover a (shallow) groove 9 at the inside of the mounting part 7 may be provided to prevent that the cover 5 may slide off from the bearing shaft 4.

[0010] The mounting part 7 can be clamped around the bearing shaft 4 by means of any kind of (releasable) clamp coupling (not shown).

[0011] In the preferred embodiment shown in figure 1 the grinding machine's cover 5 and bearing shaft being arranged - by means of the "interfacing" O-ring 8 - that the cover is movable along the axis of the bearing shaft - and thus with respect to the grinding disk -, which in practice means a substantial improvement in operational comfort and efficiency, as well as in exhaust efficiency, thanks to improved adaptation of the plain of the cover to the plain and/or shape of the construction to be deburred. As the grinding disk 3 can be brought closer to the construction to be deburred, viz. with less hindrance of the cover 5 thank to its flexibility, a greater deburring efficiency can be obtained.

[0012] Besides, the comfort and efficiency is additionally improved thanks to the ability provided by the configuration discussed here that, moreover, the mounting part 7 of the cover 5 is pivotal around the axis of the bearing shaft 4 which is additionally enabled by the flexible O-ring interface 8 between the mounting part 7 and the bearing shaft 4.

Claims

1. Grinding machine, comprising a motor part (1), a transmission part (2), a drive spindle, a connection part for mounting a grinding disk (3) to the drive spindle and a safety and exhaust cover (5) which partly covers the grinding disk when mounted to the drive spindle, which cover is mounted to a bearing shaft (4) which surrounds said drive spindle, **characterized by** a flexible interface between said cover and said bearing shaft which is arranged in a way that the cover is movable with respect to said bearing shaft.
2. Grinding machine according to claim 1, said flexible interface between the machine's cover and bearing shaft being arranged in a way that the cover is movable along the axis of the bearing shaft.
3. Grinding machine according to claim 1 or 2, said flexible interface between the machine's cover and bearing shaft being arranged in a way that the cover is pivotally movable around the axis of the bearing shaft.
4. Grinding machine according to any of the preceding

claims, said flexible interface comprising an O-ring (8) of a flexible material between the cover and the bearing shaft.

5. Grinding machine according to claim 4, said O-ring being made of a natural or synthetic rubber or elastomer.

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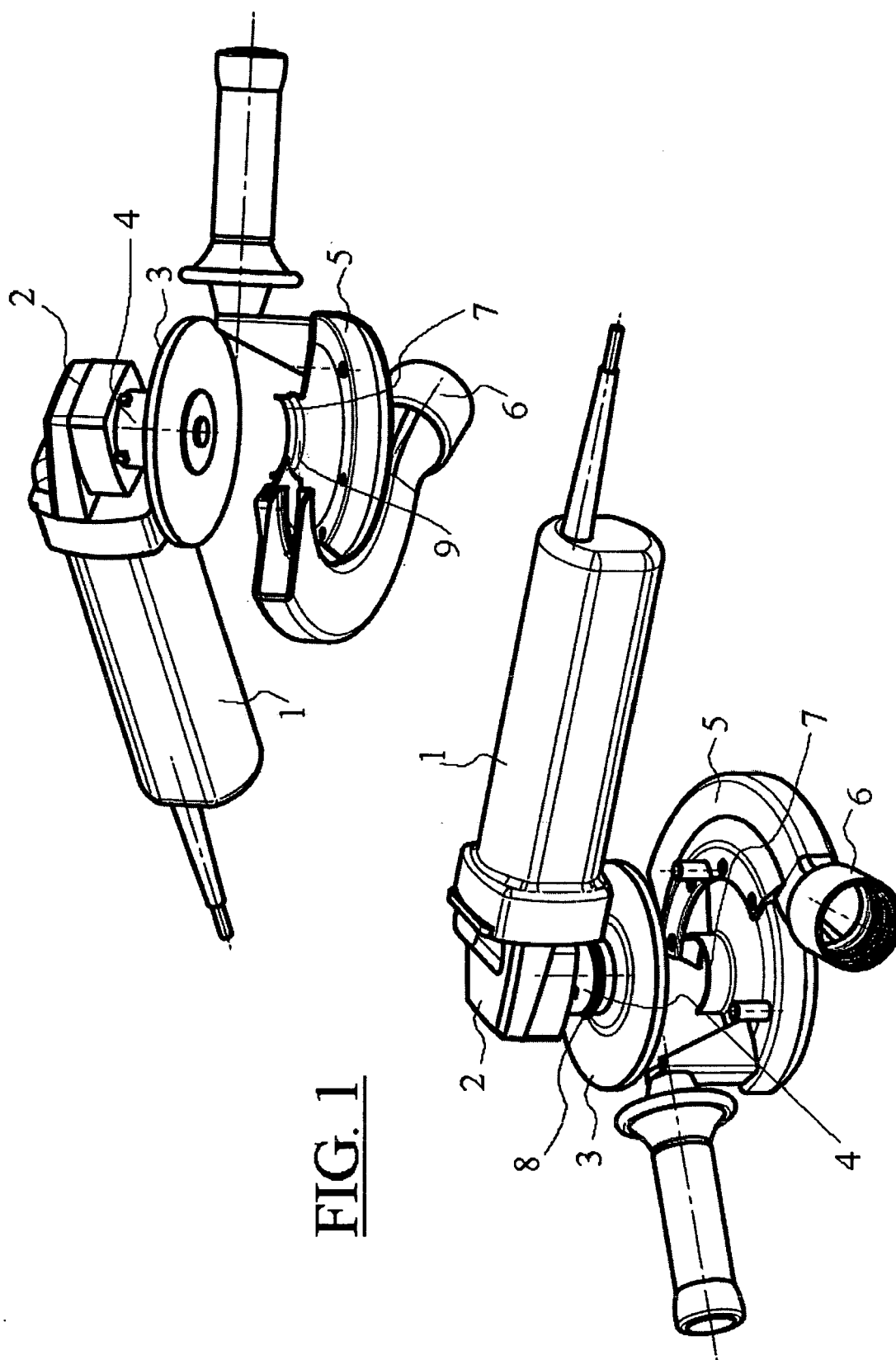


FIG. 1



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EUROPEAN SEARCH REPORT

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EP 06 07 6177

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 August 2006	Examiner Sluimer, P
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
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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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