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(54) **Outlet rotating means without brush discharge**

(57) The invented object is given to an outlet device rotating in comparison with the filex line conductor which uses a contact without brush discharge.

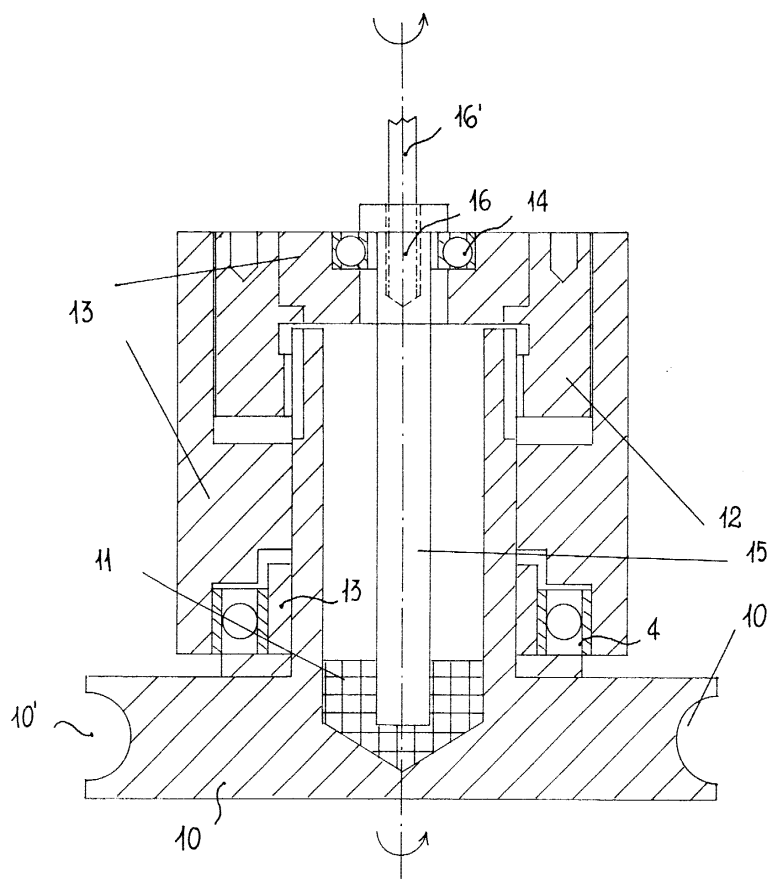


FIG. 3

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Description

[0001] The present invention refers to a kits device for the moving means to get current from a fixed contact wire particularly to be used with low-tension current, said kits device without operation brush discharge. Making reference to the current feed systems for trucks in motion, for which it is necessary to provide means of said type, according to the prior art different solutions are known, as for instance the expensive electrified bar called "bus trolley" which uses opportunely insulated contacts. Then it is known the cheaper but cumbersome solution called "to festoon" which uses an adequate extension cable to be carried away by the mobile truck. In the art the picking up difficulties of the current are known by moving outlet means mounted on trucks which necessary must have wiping or rotating contacts. Currently a solution is used which provides a wiping contact, called to charcoal, with the natural problem of the wear of the working parts with the consequent turn up of the brush discharge which causes together with the friction the heating of the parts in contact and substantial hydraulic loss. To reduce said irregular wear of the parts a solution provides a rolling contact replacing the charcoal with a small wheel. However also this solution does not complete resolve the problem such as said problem is only moved earlier in the chain of the wire parts, infact the wheel must always transmit the current to the motor line cord which inevitably stays fixed in comparison with the same wheel so creating however a wiping contact. The present invention has the object to principally obviate the said problems creating a new outlet rotating means able to be connected to the motion line cord without a wiping contact, at least in the conventional use, however able to reduce to a minimum the brush discharge and the heating. These and other objects are reached by the invented means that is characterized to be essentially formed in a first operative way to a wheel-shaped contact into which a magnet is placed to be in support attraction with a second magnet on which is wired the motor line cord so that the wiping contact was "in head" between the magnetic parts, parts themselves not very wearing out and not mechanically constrained by a clamping spring as it happened in the pass. In a second embodiment, which better solves the problem, while the contact with the power line is always wheel-shaped, the connection with the motor line cord is actuated by a ferrule on which the line cord is wired, bathed into a basin with mercury, said basin obtained inside the wheel, so that the wear of the parts will be practically null, the current conduction perfect and consequently without brush discharge. These and other features will be better apparent from the following execution form of the invented means showing by way of not limiting example. With reference to the enclosed drawings in sheet 1 fig. 1 is view of the invented contact of the first embodiment providing a "magnetic version" as to be mounted on a truck of the same type as described and

claimed in the Italian Patent Application number B099A 00390 of the same applicant. In sheet 2 fig. 2 showed the magnetic contact in exploded view. In sheet 3 fig. 3 showed the invented contact in second version "to mercury". In sheet 4 fig. 4 is exploded view of the mercury contact. Making reference to said drawings are to be noted the rotating contact 1, the concave outline groove 1', the fixed convex conductor 2 opportunely isolated in part 2' laterally mounted on left and right rail 3 on which is moved with its bearing wheels the not showed track, the rolling-contact bearing 4, the contact magnets 5, the lower one integral with the wheel 1 by the screw 7 while the upper one integral with the isolating body 7 by the grain 8, the room 9 for the wiring of the line cord which feeds the motor. In sheet 3 are to be noted the rotating contact 10, the groove 10', the conductive liquid 11 for example mercury contained inside a hollow of the wheel 10 to be realized in conduction material like the parts 12 of the device, while the parts 13 are in isolated material, a second rolling-contact bearing 14 that permits to a ferrule 15 also it in conduction material to remain immobile in comparison with the line cord 16' wired in point 16 which feeds the motor while the mercury 11 rotating without brush discharge around the ferrule 12 together with the contact 10 conducts perfectly current. In the use all the execution elements, the dimensions, the materials and others of the invention are to be provided in different way without exit from the present invention. Infact the invented means so created can be modified without exit from the invented device. Moreover all the parts are to be replaced with others technically similar.

Claims

1. Outlet rotating means without brush discharge providing a contact (1), (10), rotating on the fixed conductor (2), a ferrule on which is wired the line cord which feeds the motor, immobile in comparison with the rotating contact; characterized in that
 - in a first embodiment the current passage between the wheel (1) and the cord (9') feeding the motor is realized by two magnets (5), in frontal support, the first of which integral with the wheel (1) by the screw (6), the second to the cord (9') by the grain (8) and in constant contact each other for magnetic attraction;
 - in a second embodiment the current passage between the wheel (10) and the cord (16') feeding the motor is realized by a certain quantity of conductive liquid for example mercury (11) to be contained inside a hollow of the wheel (10) and a ferrule (15) inside which is wired the cord (16') bathed in the mercury.
2. Outlet rotating means without brush discharge, as

per claim 1, characterized in that the ferrule (15) remains immobile in comparison with the line cord (10), mounted on a rolling-contact bearing (4), for the presence of a second rolling-contact bearing (14) integral with the isolating element (13) and with the same ferrule. 5

3. Outlet rotating means without brush discharge, as per claim 1, characterized in that the version called "to mercury" able to transmit current without brush discharge with the ferrule (15) extraction from the hollow containing mercury (11) could be in correct way to be used like current switch. 10

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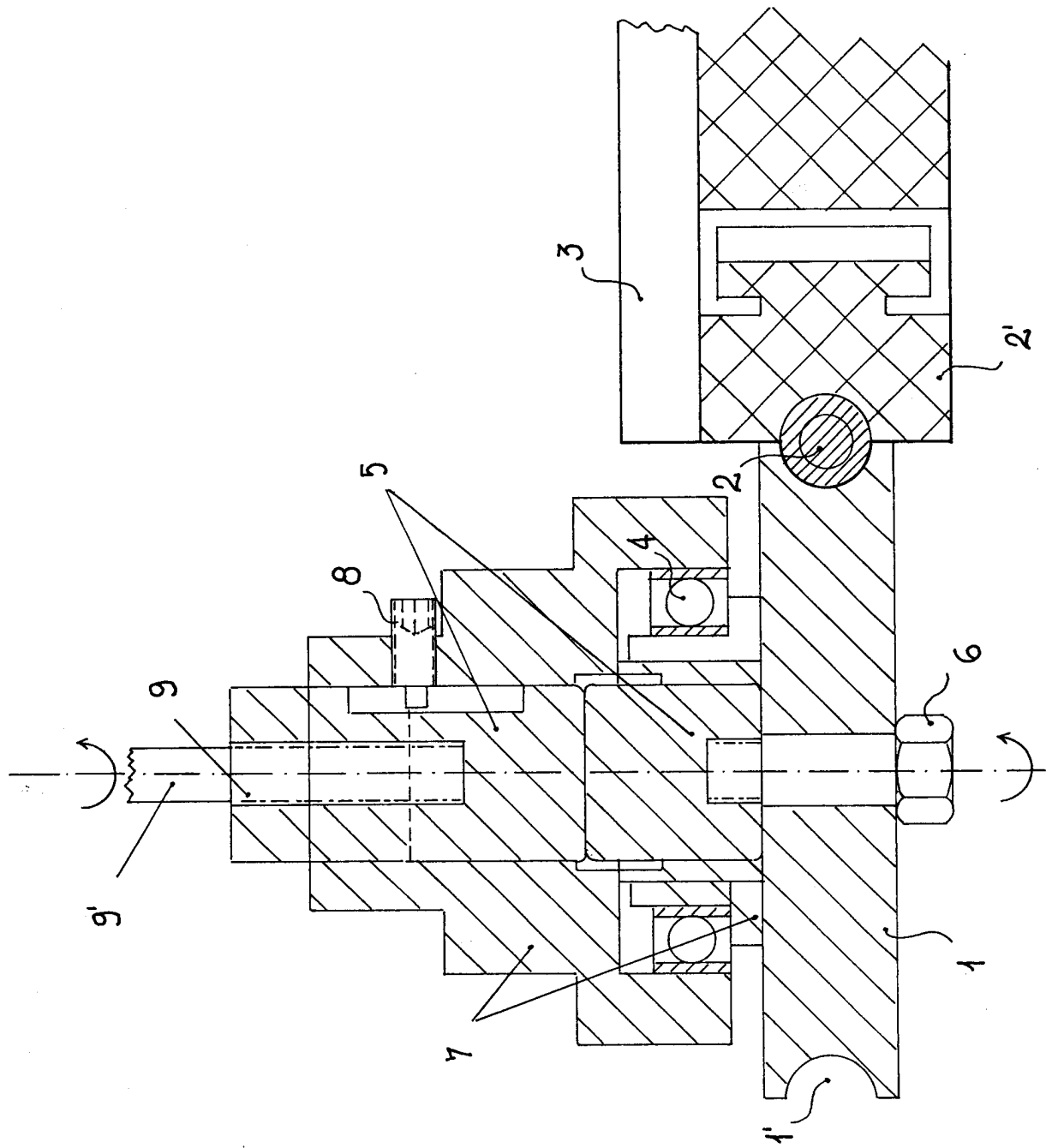
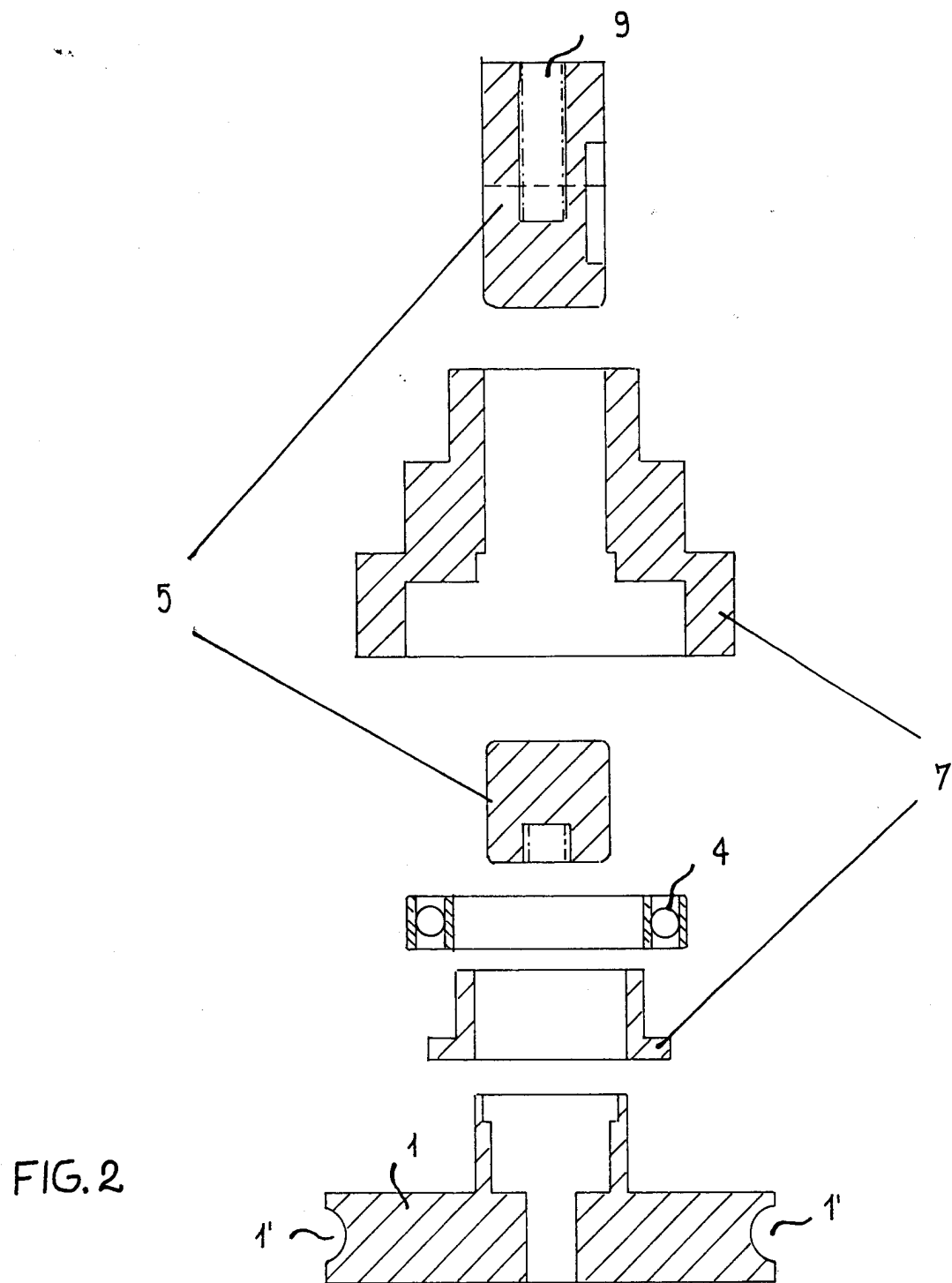
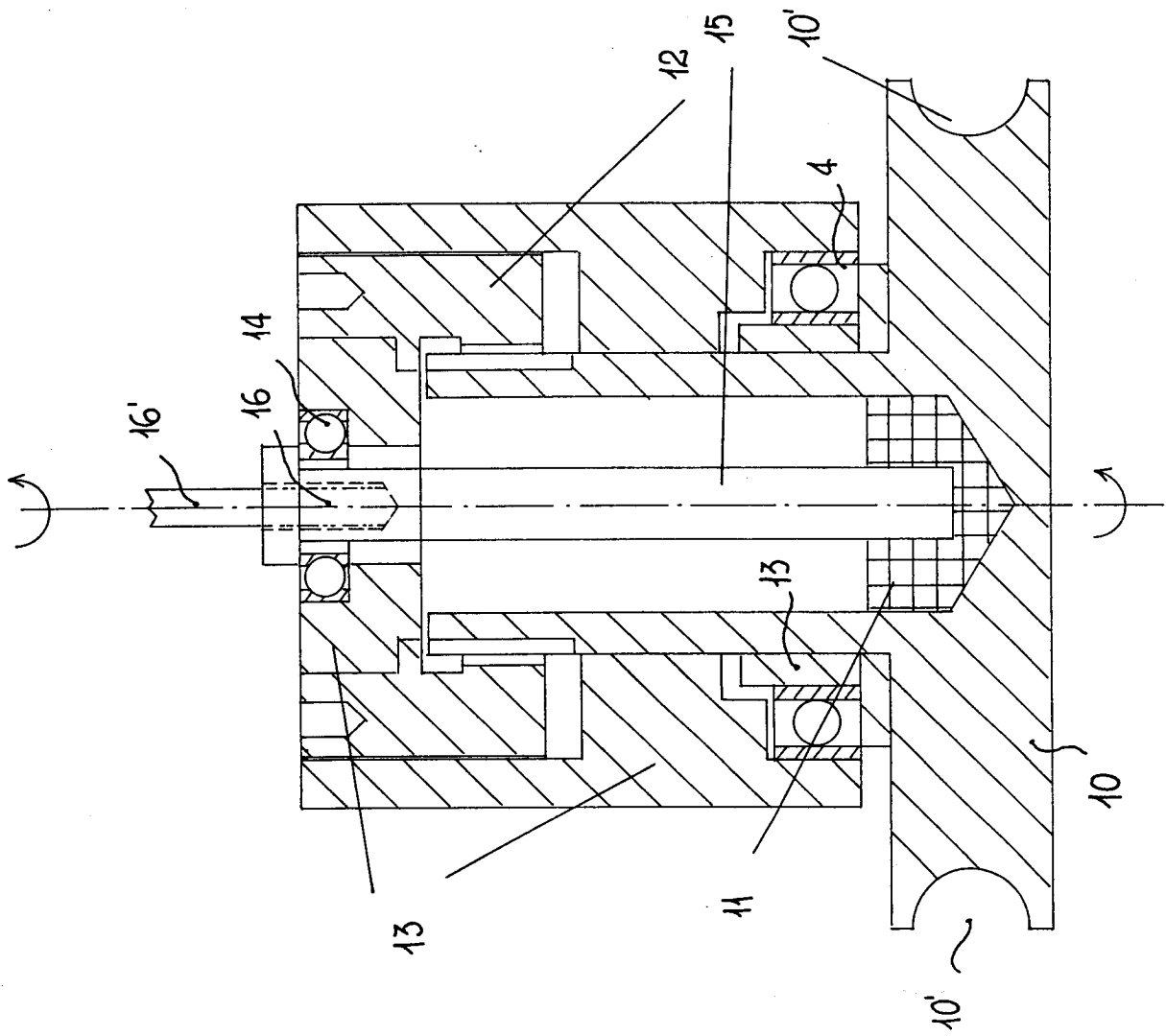


FIG. 1





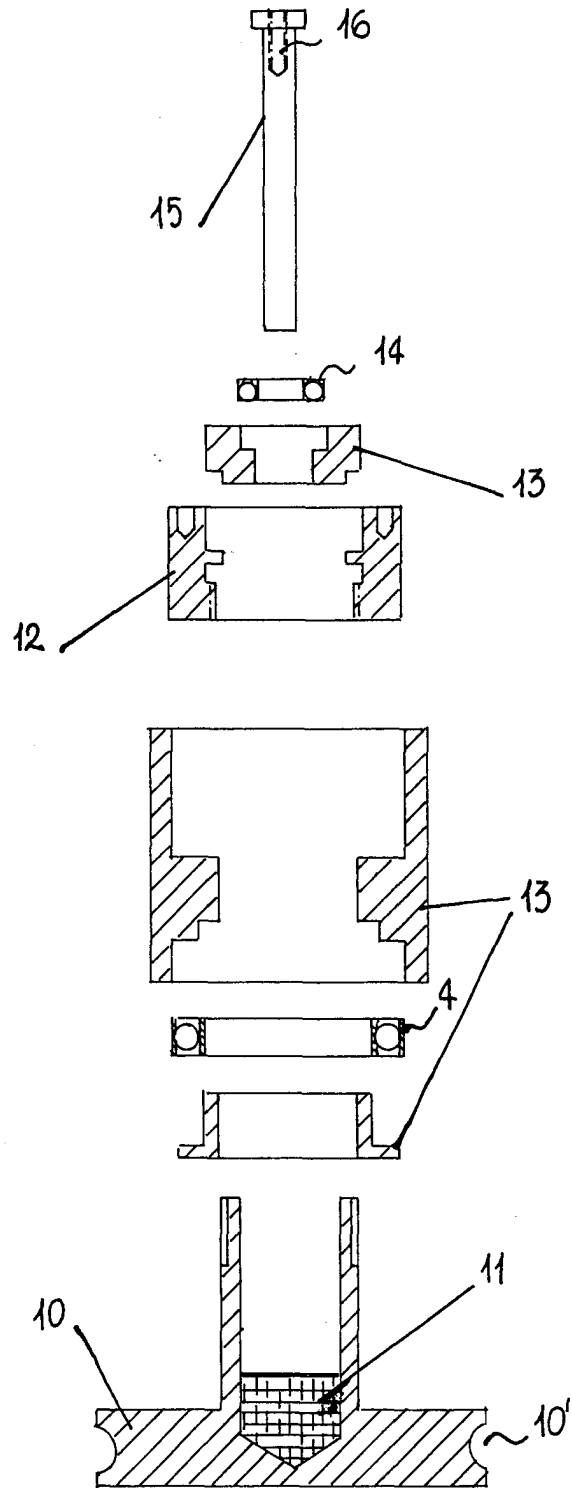


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 00 12 5090

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	EP 0 099 601 A (SKF) 1 February 1984 (1984-02-01) * page 5, line 30 - page 6, line 20; figures 1,2 *	1,2	H01R39/64
A	US 4 733 038 A (R.GIRARDIN) 22 March 1988 (1988-03-22) * column 3, line 48 - column 4, line 5; figures 1,2 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H01R
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 5 March 2001	Examiner Alexatos, G
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			

EPO FORM 1503 03/82 (P04C01)

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

EP 00 12 5090

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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