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- (54) Benævnelse: **Føringslegeme i form af en ring til montage af et element med friktion og med en hængslings- og/eller forskydningsmulighed**
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**FR-A- 1 019 801**  
**FR-A1- 2 376 330**  
**US-A1- 2004 042 698**



The invention concerns the technical domain of articulations of ring, rotary or slide type, with workings suitable to act as a grease reserve in order to lengthen the intervals of time at which greasing must be performed.

5        More particularly, the invention concerns all types of pivots and slides requiring periodic lubrication to improve the friction and slide between two parts that have a movement relative to each other.

Such is the case, for example, with a guidance device in ring form for assembly with a capacity for articulation and/or sliding of an element such as a shaft or pin.

10       The workings suitable to act as a grease reserve at the bore of the ring can be composed of holes, cells, grooves, etc.

Also note that, still in a known manner, the ring or the pin can have workings to feed grease, at given time intervals, to the friction area and more particularly the workings suitable to act as a grease reserve.

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Such a guidance device is known from document FR 738 343 A

In effect, it has been observed that during a standard lubrication, there is a renewal of grease in the operating play, but this renewal in the workings under load is only partial and uncontrolled in the case of major oscillations and non-existent in the case of weak oscillations.

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According to the state of the art, to remedy this disadvantage, it is necessary to undertake a very heavy maintenance operation that requires the dismounting of parts, in order to perform a manual lubrication, and then to remount said parts.

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This operation of dismounting of antagonist parts is long, costly by involving a time of intervention as well as a risk of damage of the various elements constituting the considered joint

30       The result of this lubrication is very often delayed, which is detrimental to the satisfactory operation of the assembly.

The invention is intended to remedy these disadvantages in a simple, safe, effective and rational manner.

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The problem that the invention is designed to solve is to be able to resupply grease to the workings suitable to act as a grease reserve and located under the load; the problem does not exist for workings located away from the load, because they can be resupplied with grease.

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The invention is described in claim 1.

These characteristics provide the possibility of resupplying the workings acting as a grease reserve without dismounting the components of the entire considered articulation.

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According to the invention, the facilities are constituted of channels connecting each of the workings suitable to act as a grease reserve.

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According to the invention, the channels are arranged in a helix.

According to an embodiment, the workings suitable to act as a grease reserve are constituted of holes or cavities or grooves.

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According to an embodiment, the grease supply workings are composed of an external peripheral groove formed on one part of the component and opening into the bore of the ring, said groove being in communication with a grease injection system.

The invention will be explained below in more detail, with the aid of the appended drawings, in which:

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- Figure 1 is a longitudinal cross section view of a guidance device in ring form for mounting of a pin-type component with friction, with the ring having workings suitable to act as a grease reserve, while the pin has workings for the injection of the grease at the friction area, including into the workings suitable to act as a grease reserve;
- Figure 2 is a side view corresponding to figure 1;
- Figures 3 and 4 are photographs illustrating the lubrication performed by an injection through the center of the pin, according to the state of the art;
- Figure 5 is a view in perspective of the ring, according to the characteristics of the invention;
- Figure 6 is a longitudinal cross section view of the ring, according to figure 5;

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- Figures 7 and 8 are photographs similar to figures 3 and 4, according to the characteristics of the invention.

Figures 1 and 2 illustrate a guidance device in the form of a ring (1), for mounting  
5 of an element (2) with friction and with articulation and sliding capacity, such as a pin  
for example.

The ring (1), notably its bore, has workings (1a) in the form of holes, cavities or  
grooves, for example, suitable to act as a grease reserve.

10 The pin (2) (or ring (1)) has workings to supply grease to the friction area,  
including the workings (1a), at given time intervals.

In the example illustrated in figures 1 and 2, the workings for the injection of the  
grease are constituted of a coaxial channel (3) for the injection of the grease from the  
exterior in communication with the radial channels (4) opening into a groove (5) in  
15 communication with the bore of the ring (1). Such arrangements are stated as  
examples perfectly known for a person skilled in the art.

As stated, the radial channels (4) are in communication with the outside peripheral  
groove (5) formed on the pin (2) and which opens into the bore of the ring (1).  
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As stated in the analysis of the state of the art, it will be remembered that during a  
lubrication performed via the center of the pin, a certain quantity of the grease injected  
exits via the play existing between the pin (2) and the ring (1). However, at the bottom  
part, which corresponds to the application of the load (*symbolized by arrows at figures*  
25 *1 and 2*), the grease does not overflow.

Similarly, one can observe, after dismounting the pin (figure 4), that after this  
lubrication operation, there is no grease in the area located under the load, as  
specified, and notably the working acting as a grease reserve.

30 According to a fundamental characteristic of the invention, to overcome this  
disadvantage, the bore of the ring (1) has facilities (1b) able to put in communication  
the lubrication workings (4-5) and workings (1a) suitable to act as a grease reserve  
with the effect of supplying all said grease reserve workings, including those located  
under the load.

35 As shown in figures 5 and 6, the facilities (1b) are constituted of channels  
connecting each of the workings (1a) suitable to act as a grease reserve.

The channels (1b) are advantageously positioned as a helix, so as to supply all the grease reserve workings, including those positioned under the load.

Given these characteristics, there is a continuity between the lubrication groove  
5 (5) and the workings (1a) suitable to act as a grease reserve by means of irrigation channels (1b). Refer to the photos in figures 7 and 8, which show that the grease overflows, including under the load (figure 7) and in the workings (1a) which act as a grease reserve, positioned under said load (Figure 8).

The advantages - are clear from the description; in particular, we remind you of  
10 the possibility of resupplying the workings acting as a grease reserve without requiring the dismounting of the various components of the entire articulation.

**PATENTKRAV**

1. Føringsindretning i form af en ring (1) og et element (2) til montage med friktion og med hængslings- og/eller forskydningsmulighed for elementet (2) i ringen (1), hvilken  
5 ring (1) eller hvilket element (2) har udformninger (3-4-5) til at tilføre fedt til friktionsområdet med givne tidsintervaller, idet boringen i ringen (1) har udformninger (1a), som er egnede til at fungere som fedtreserve, **kendetegnet ved, at** boringen i ringen har kanaler (1b), som forbinder hver af udformningerne (1a), som er egnede til at fungere som fedtreserve, for at bringe fedtforsyningsudformningerne (3-4-5) i forbindelse med alle udformningerne (1a), som fungerer som fedtreserve, idet kanalerne (1b)  
10 er placerede i en skruelinieform.

2. Føringsindretning ifølge krav 1, **kendetegnet ved, at** udformningerne (1a), som er egnede til at fungere som fedtreserve, udgøres af huller eller hulrum.  
15

3. Føringsindretning ifølge krav 1, **kendetegnet ved, at** udformningerne (1a), som er egnede til at fungere som fedtreserve, udgøres af riller.

4. Føringsindretning ifølge ethvert af kravene 1 til 3, **kendetegnet ved, at** fedtforsyningsudformningerne udgøres af en udvendig perifer rille (5) udformet på en del af elementet (2), og som udmunder i boringen i ringen (1), idet rillen står i forbindelse med et fedtindsprøjtningssystem (3-4).  
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FIG.2

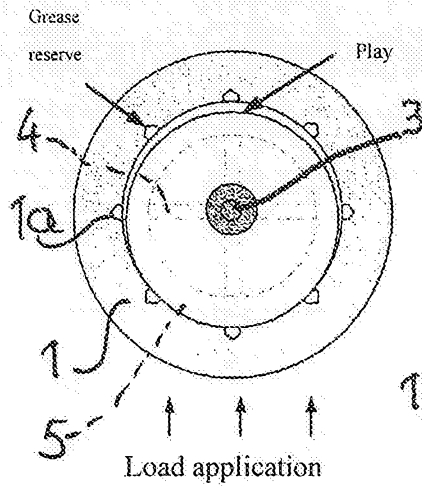


FIG.1

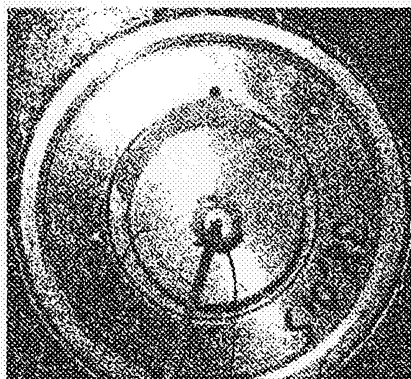
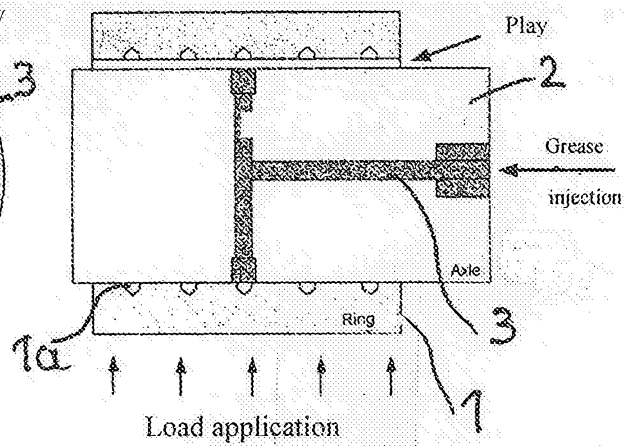


FIG.3

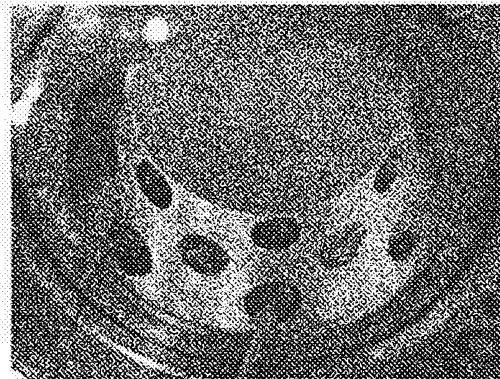


FIG.4



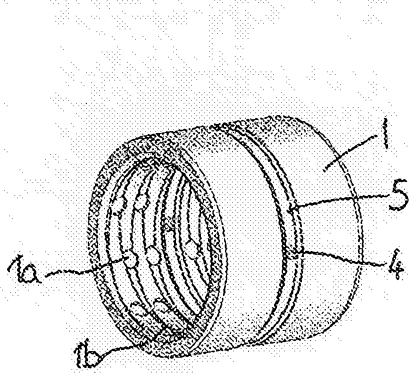


FIG. 5

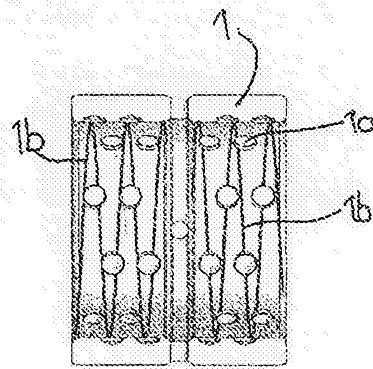


FIG. 6

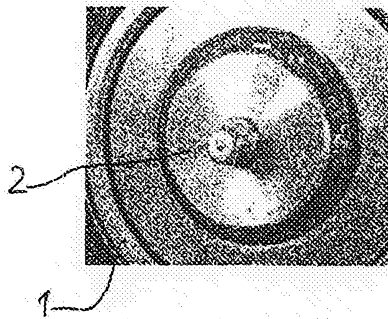


FIG. 7

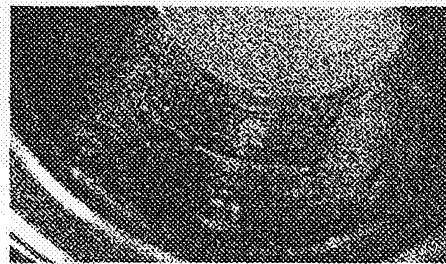


FIG. 8