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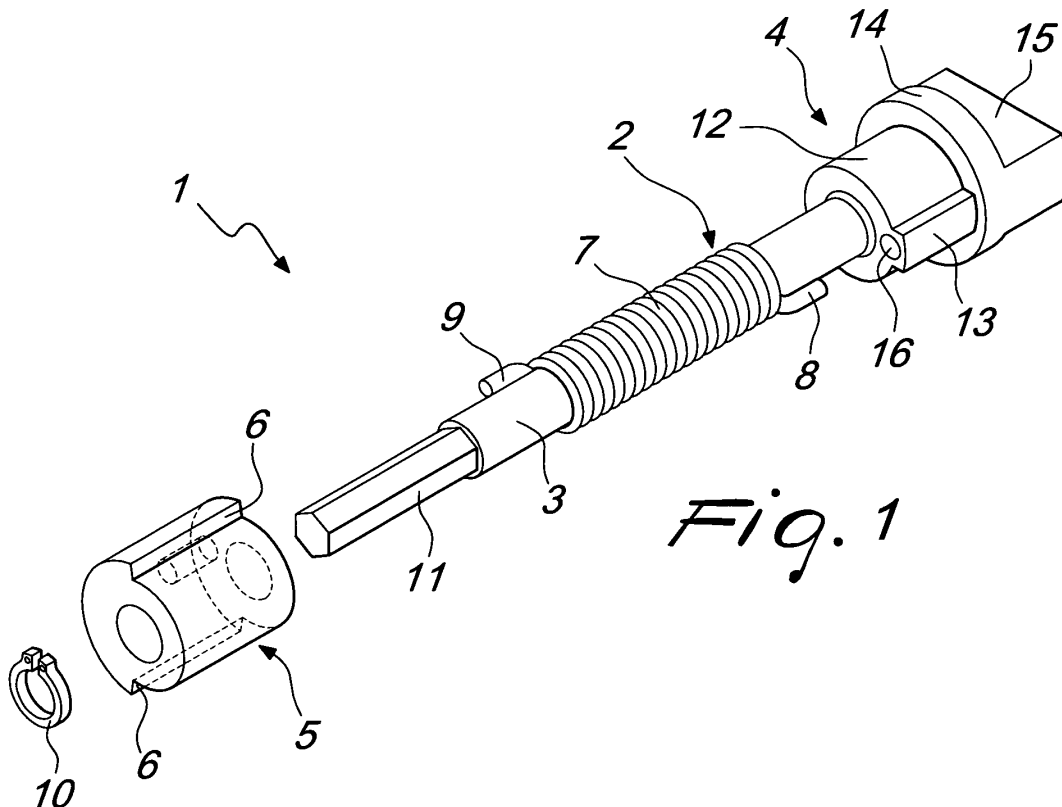
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Hinge for household appliances, particulary for cookers

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A hinge for household appliances, particularly for cookers, which comprises a central body (2), which is provided with a substantially cylindrical elongated stem (3) for insertion in a receptacle of the footing of the cooker and forms, at one end, a contoured flange (4) for rigid mating to the rotating cover of the cooker, a drum (5) that is engaged so that it can slide along the stem (3) and is provided with means (6) for coupling to the footing of the cooker, and a torsion spring (7), which is fitted coaxially along the stem (3), with a first end (8) and a second end (9) which are mutually opposite and are fixed respectively to the flange (4) and to the drum (5).



Description

[0001] The present invention relates to a hinge for household appliances, particularly for cookers.

[0002] Modern household appliances, with particular reference to cookers, are generally provided with an upper cover for protecting the cooking plates when they are not being used, which also constitutes a useful supporting surface.

[0003] Such cover is coupled to the footing of the cooker by means of a pair of lateral hinges, which are generally made of metallic material and have a rather complicated structure, since they must comply with exact specifications related to safety in use and to resistance to high temperatures.

[0004] However, currently the need is felt, due to economic and manufacturing considerations, to have hinges that are substantially cheap to manufacture and quick to assemble.

[0005] The aim of the present invention is to meet this requirement, by providing a hinge for household appliances, particularly for cookers, that is provided by means of the smallest possible number of components and with the maximum containment of production costs.

[0006] Within this aim, an object of the present invention is to provide a hinge for household appliances that is highly safe and reliable and has excellent resistance in all operating conditions.

[0007] Another object of the present invention is to provide a hinge that is versatile in application to household appliances of various kinds and sizes.

[0008] Another object of the present invention is to provide a hinge for household appliances that is simple, relatively easy to provide in practice, safe in use, effective in operation, and has a relatively low cost.

[0009] This aim and these and other objects that will become better apparent hereinafter are achieved by the present hinge for household appliances, particularly for cookers, characterized in that it comprises a central body, which is provided with a substantially cylindrical elongated stem for insertion in a receptacle of the footing of the cooker and forms, at one end, a contoured flange for rigid mating to the rotating cover of the cooker, a drum that is engaged so that it can slide along said stem and is provided with means for coupling to the footing of the cooker, and a torsion spring, which is fitted coaxially along said stem and has mutually opposite first and second ends, which are fixed respectively to said flange and to said drum.

[0010] Further characteristics and advantages of the present invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a hinge for household appliances, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is an exploded perspective view of the hinge according to the invention;

Figure 2 is a partially sectional side elevation view of the hinge;

Figure 3 is a top view of the hinge according to the invention.

[0011] In the embodiment that follows, individual characteristics may actually be interchanged with other different characteristics that exist in other embodiments.

[0012] Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject of a disclaimer.

[0013] With reference to the figures, the reference numeral 1 generally designates a hinge for household appliances, particularly cookers, according to the invention.

[0014] The hinge is of the type suitable to be fitted to the sides of the footing of the cooker in order to support rotatably the access panel or cover for protecting the cooking plates.

[0015] The hinge according to the invention comprises a central body, generally designated by the reference numeral 2, which forms a substantially cylindrical elongated stem 3 for insertion in a receptacle provided in the footing of the cooker and, at one of its ends, a flange, generally designated by the reference numeral 4, for rigid mating at an appropriately provided receptacle provided in the side of the access panel. The hinge further comprises a drum 5, which is engaged so that it can slide along the stem 3 and is provided with means 6 for coupling to the footing of the cooker: a torsion spring 7, of the cylindrical helical type, is fitted coaxially along the stem 3 and has a first end 8, which is fixed to the flange 5, and a second end 9, which is fixed to the drum 5. The first and second ends 8 and 9 are substantially parallel to the axis of the turns of the torsion spring 7.

[0016] According to the invention, the central body 2 and the drum 5 are made of a synthetic material such as polyarylamide (also known by the registered trademark IXEF), which is lightweight, cheap and easily workable by molding, and has optimum mechanical strength characteristics at high temperatures.

[0017] The drum 5 is locked axially along the stem 3, in the extraction direction, by means of an elastic safety ring 10.

[0018] The stem 3 forms, at its free end, an end shank 11 that has a polygonal, preferably regular hexagonal, transverse cross-section; this cross-section allows to center the stem 3 in a complementary drum, not shown in the figures for the sake of simplicity, which is provided in the receptacle of the footing cited above and is provided with a hole that has a complementary cross-section.

[0019] The flange 4 is constituted by an inner portion 12, which is substantially cylindrical and forms a sort of longitudinal raised rib 13, which is suitable for mating with the receptacle provided in the cover, a substantially circular central portion 14, and a substantially parallel-

epipedal outer portion 15, which is advantageous since it allows to grip the central body 2 during hinge assembly or maintenance. The internal portion is affected by a first dead hole 16, whose axis is parallel to the stem 3, suitable for the insertion of the first end 8 of the torsion spring 7.

[0020] The drum 5 is substantially cylindrical and has a central through hole 17 for insertion along the stem 3; the drum is further affected by a second dead hole 18, whose axis is parallel to the through hole 17 and in which the second end 9 of the torsion spring 7 is suitable to engage.

[0021] The means 6 for coupling the drum 5 to the footing of the cooker are advantageously constituted by two abutment surfaces, which are orientated substantially diametrically with respect to the axis of the drum and are provided along the lateral surface of the drum 5 and are such as to constitute respective stop references in the rotation of the access panel in one direction or the other (opening and closure).

[0022] It has thus been shown that the invention achieves the intended aim and objects.

[0023] The hinge is provided in the smallest possible number of components, which are further made of lightweight, low-cost and tough material.

[0024] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0025] All the details may further be replaced with other technically equivalent ones.

[0026] In practice, the materials used, as well as the shapes and dimensions, may be any according to requirements without thereby abandoning the scope of the protection of the appended claims.

[0027] The disclosures in Italian Patent Application No. B02003U000129, from which this application claims priority, are incorporated herein by reference.

[0028] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A hinge for household appliances, particularly for cookers, **characterized in that** it comprises a central body (2), which is provided with a substantially cylindrical elongated stem (3) for insertion in a receptacle of the footing of the cooker and forms, at one end, a contoured flange (4) for rigid mating to the rotating cover of the cooker, a drum (5) that is engaged so that it can slide along said stem (3) and is provided with means (6) for coupling to the footing of the cooker, and a torsion spring (7), which is fitted

coaxially along said stem (3) and has a first end (8) and a second end (9) which are mutually opposite and are fixed respectively to said flange (4) and to said drum (5).

2. The hinge according to claim 1, **characterized in that** said central body (2) is made of a synthetic material such as polyarylamide.

3. The hinge according to claims 1 and 2, **characterized in that** said drum (5) is made of a synthetic material such as polyarylamide.

4. The hinge according to one or more of the preceding claims, **characterized in that** said drum (5) is locked axially along said stem (3) by an elastic ring (10).

5. The hinge according to one or more of the preceding claims, **characterized in that** said flange (4) and said drum (5) are affected respectively by a first hole (16) and a second hole (18), which have parallel axes, for the engagement of said first and second ends (8, 9) of said torsion spring (7).

6. The hinge according to one or more of the preceding claims, **characterized in that** said flange (4) is constituted by a substantially cylindrical inner portion (12), which forms a sort of longitudinal protruding rib (13) that is suitable for rigid mating with the access panel, a substantially circular central portion (14), and a substantially parallelepipedal outer portion (15).

7. The hinge according to one or more of the preceding claims, **characterized in that** said coupling means (6) are constituted by two abutment surfaces, which have a substantially diametrical orientation, are provided on the lateral surface of said drum (5), and are suitable to constitute respective stop references for the rotation of the door of the cooker.

8. The hinge according to one or more of the preceding claims, **characterized in that** said stem (3) forms, at its free end, an end shank (11) that has a regular hexagonal transverse cross-section for fixing to the footing of the cooker.

9. The hinge according to one or more of the preceding claims, **characterized in that** said torsion spring (7) is of the cylindrical helical type, in which said first and second ends (8, 9) are substantially parallel to the axis of the turns.

