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(54) **Improvement in electrical conductors in items for everyday use**

(57) Improvement in electrical conductors in items for everyday use, represented by a protective layer made of a suitable material, such as copper, placed be-

fore the external insulation, with a light to signify the correct functioning of the application.

Technical field: electrotechnic; application field: construction of household electrical items.

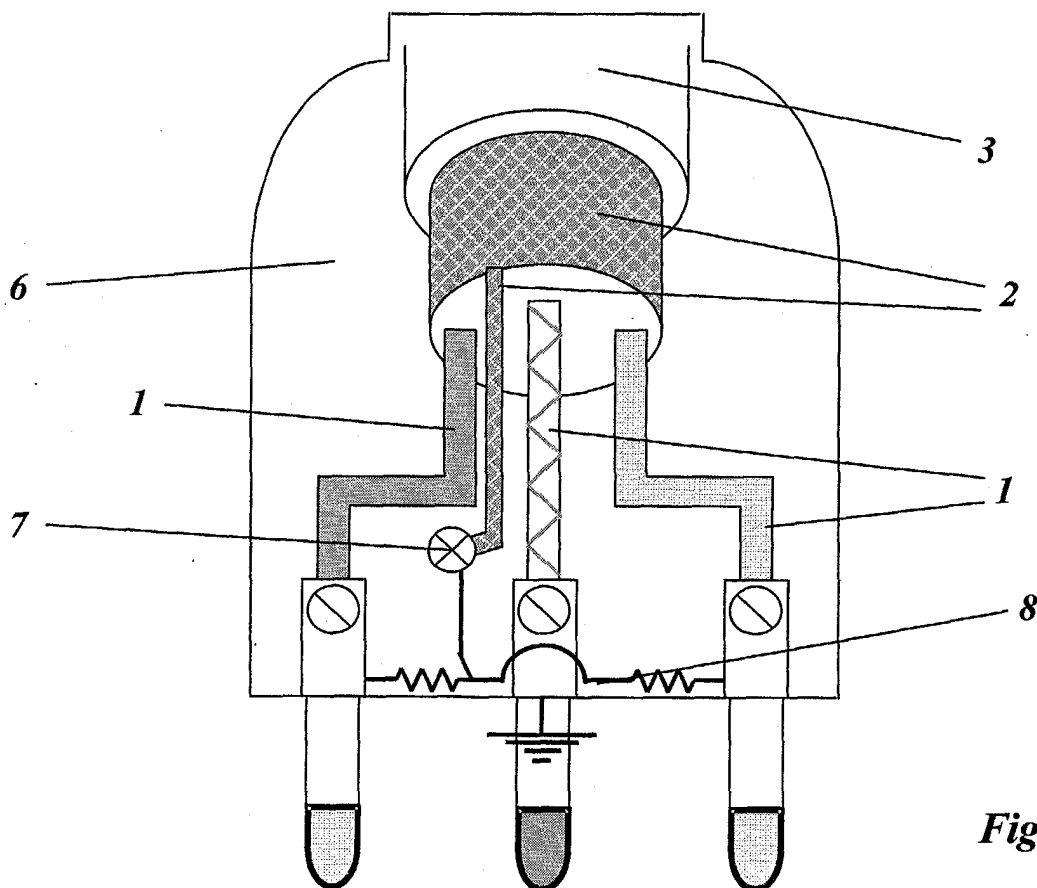


Fig. 2

Description

[0001] This invention concerns an electrical conductor to be applied to different types of household electrical items, especially if they are subjected to continuous use in which the electrical cord is heavily used, for example items used by hairdressers, such as hairdriers, and other electrical items for daily use, such as food mixers, centrifuges, drills, extension leads, shiners, vacuum cleaners, etc.

[0002] This invention comes under the field of electrotechnic applications and in the manufacture of the items mentioned above.

[0003] It is well known that when an electrical cord is heavily used, one of the internal conductors could break, burning the insulation, and can cause fires, especially if the electrical conductor carries the current.

[0004] Currently, many small and large household electrical items are made of plastic, and are therefore insulated, but many of them contain electrical circuits without an earth wire. This means that there is a serious risk of electrical shocks should the wire be accidentally damaged before the main electrical system can be shut down.

[0005] This invention is intended to prevent these sort of accidents and offers advantages in terms of safety, a requirement that is now mandatory according to EU regulations governing prevention and personal safety.

[0006] This therefore involves covering the three wires that make up the electrical cord with a copper coating, or a coating made of another conducting material, before the final external insulation is applied. Therefore, the conductor, being coated with a protective layer, will prevent the risk of electric shocks and possible fires. In fact, in the case of one of the wires being accidentally damaged, the protective layer will intervene and the main electrical system will be interrupted before the outside insulation is damaged, thus protecting the user from the resultant electric shock and possible fire.

[0007] Furthermore, the covering, as it is in a suitable material such as copper, prevents the formation of electromagnetic waves that are harmful to those who use such items everyday, such as hairdressers, etc.

[0008] The inventor preferred version of the item will now be described on the basis of the design drawings attached, which are:

Fig. 1 is a schematic view of the cord, which is made up of three wires and the protective layer;

Fig. 2 is a cross-section of a schematic view of the plug with the cord inserted;

Fig. 3 is a schematic view of the end of the cord to be attached to the application in question and

Fig. 4 shows a variation of Fig. 2.

[0009] With reference to the drawings representing the wiring system, 1 indicates the wires that make up the cord, 2 indicates the protective layer and 3 indicates

the final or outside insulation.

[0010] The conductor 2, which has been called a "protective layer", is connected to the earth wire at the users' end. Although there is no earth wire inside the application being used, by inserting the cord concerning the invention (which does contain an earth wire), this wire will be connected to the protective layer, which creates the protection by deviating the current towards the plug.

[0011] Fig. 2 shows the plug 6, which has a small light 7 (for example a neon light) connected to the protective layer 2 and a resistor 8, which is connected to the internal phase and the neutral plug. This allows continuous indication of the correct functioning of the protective system.

[0012] Fig. 3 shows how to make the connection if there is no earth wire inside the application in question. In this drawing, 1 indicates the cord wires, 2 indicates the protective layer, 3 indicates the external insulation, 4 indicates the connection between the earth wire and the protective layer and 5 indicates the terminals on the application being used.

[0013] If there is an earth terminal within the application being used, the connection 4, shown in Fig. 3, (connection between the protective layer and the earth wire) will be part of the earth terminal within the application in question.

Claims

1. Electrical conductor **characterised by** the fact that it is made up of internal wires (1) surrounded by a protective layer (2) before the external insulation (3).
2. Electrical conductor as in the claim 1, **characterised by** the fact that it is composed of three wires, including the earth wire.
3. Electrical conductor as in the claim 1, **characterised by** the fact that the protective layer (2) is connected to the earth wire of the electrical conductor inside the plug.
4. Electrical conductor as in the preceding claims, **characterised by** the fact that the protection system is constantly monitored by a light (7), for example a neon light, connected to the protective layer (2) and a resistor (8), said resistor being connected to the internal phase and the neutral plug.
5. Electrical conductor as in the preceding claims, **characterised by** the fact that it can be used in any situation requiring a specific use of electrical items such as hairdriers or other household electrical items used daily, such as centrifuges, food mixers, etc.

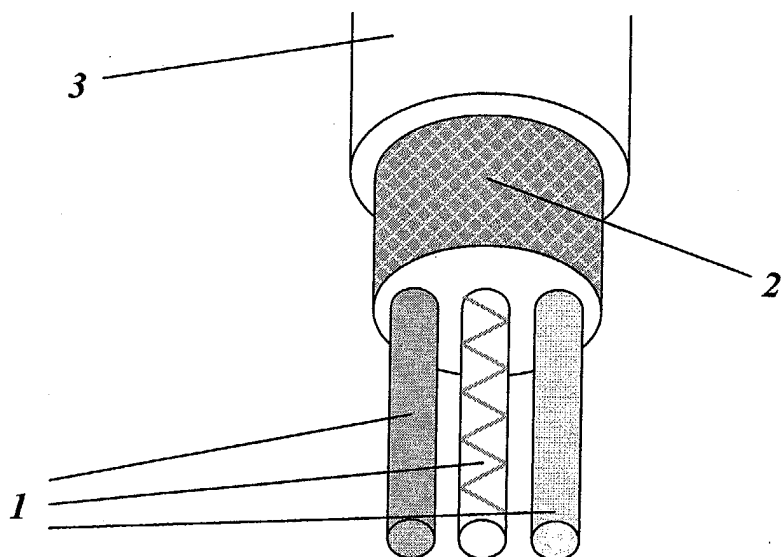


Fig. 1

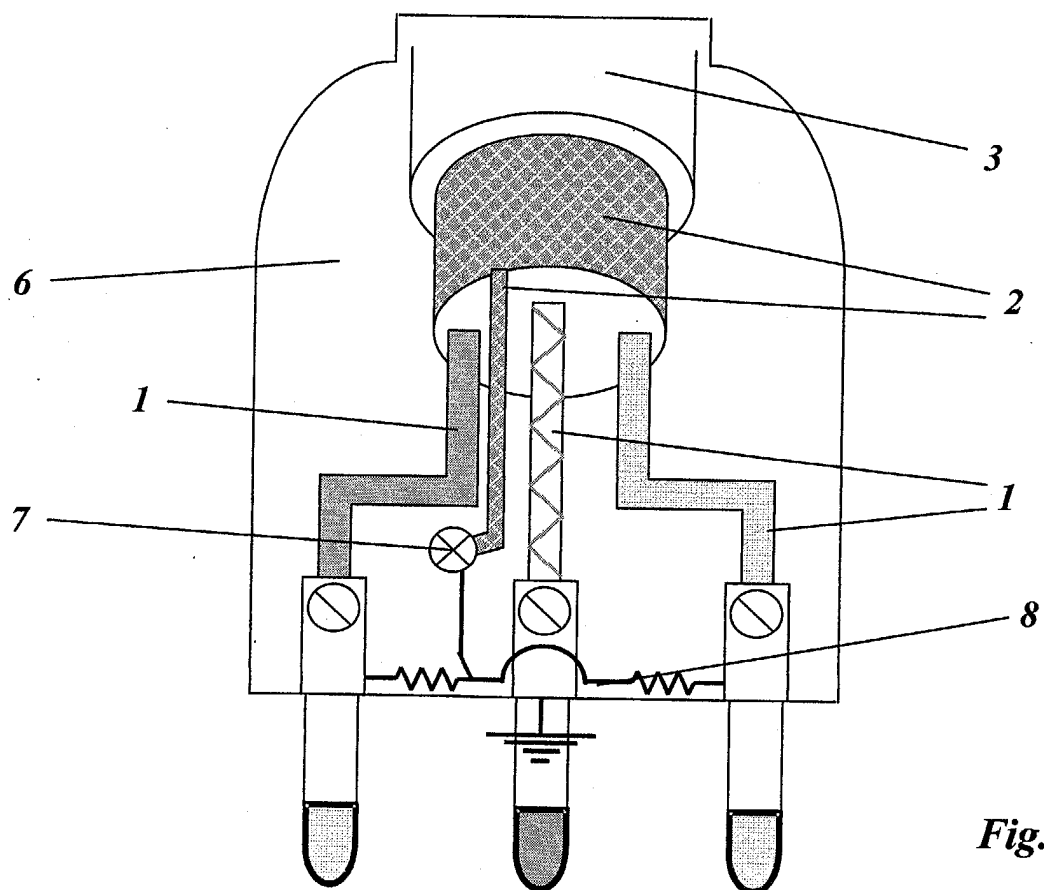


Fig. 2

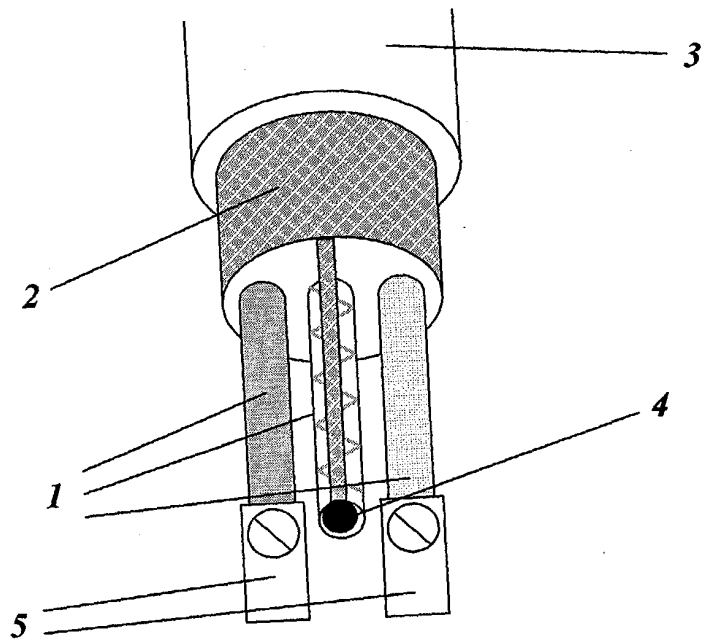


Fig. 3

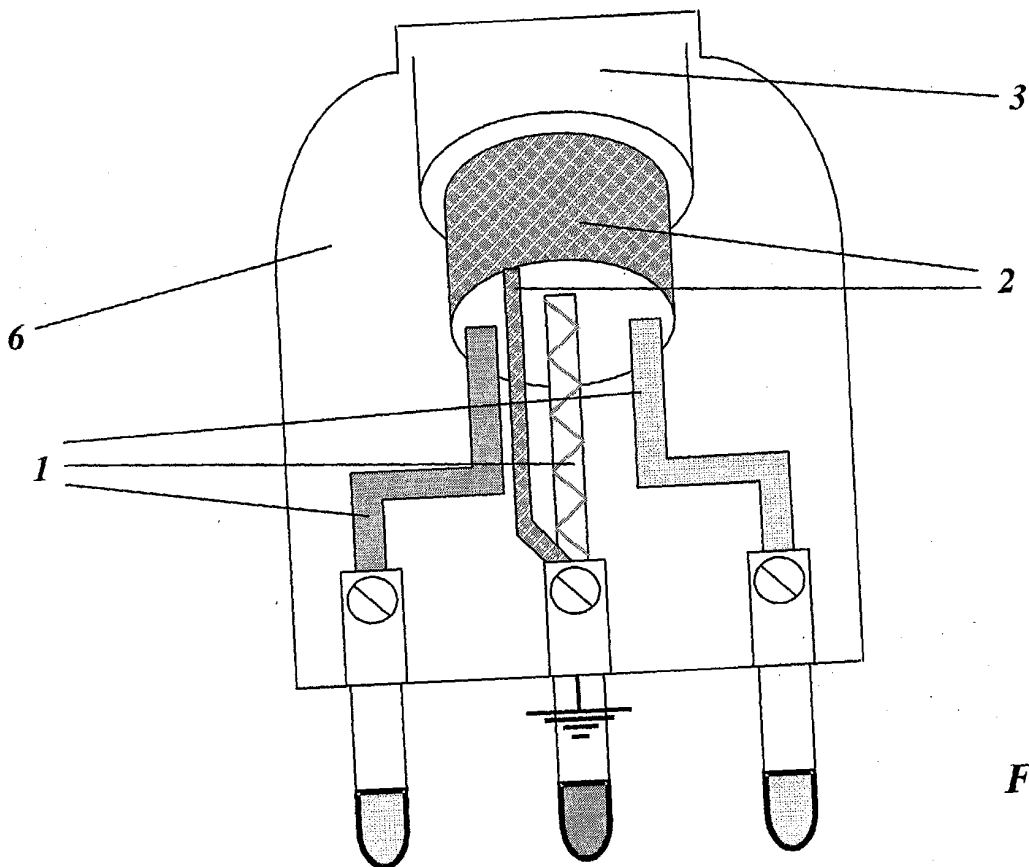


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 04 42 5156

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)
X	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 09, 30 July 1999 (1999-07-30) & JP 11 111391 A (CANON INC), 23 April 1999 (1999-04-23) * abstract *	1-3, 5	H01B9/02 H01B7/32 H01R13/717
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A	US 3 890 030 A (MCDANIEL JOHNNY B) 17 June 1975 (1975-06-17) * column 3, line 1 - column 6, line 50; figures 1-3 *	4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H01B H01R
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		6 July 2004	Demolder, J
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 (P04/C01)

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

EP 04 42 5156

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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06-07-2004

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82