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⑤ **Method of washing, in particular for washing machines and dishwashers using either a low temperature or cold water with low tension and immersed electrodes.**

⑦ A method of washing consisting of one, two or more metal electrodes directly immersed in the water in the place of the usual heating element. These electrodes are connected to a transformer, preferably a piloted reluctance type, so as to isolate and decouple from the mains and are capable of activating the cleansing agent proposed for washing even with cold water.

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This invention concerns a method of washing in particular for washing machines and dishwashers using electrodes immersed in direct contact with the water.

It is common knowledge that in standard washing machines and dishwashers the role of activating the detergent is assigned to an electric heating element which functions on the 220 volt mains, and which, immersed in the water, raises the temperature up to 90°C; usually the capacity of this heating element is about 2000 Watts. However the use of said heating element besides bringing with it a considerable element of risk also causes the formation of limestone which, with time, reduces the technical efficiency and therefore increases the risk of the heating element itself breaking.

On a circulation level the above mentioned heating element, with a high consumption rate, requires the instalment of consensus and safety thermostats; this method also causes inevitable weakening of the cloth thus reducing its consistency and life.

It is the aim of this invention to enable the realization of a method of washing which, by using, one, two or more metal electrodes immersed in the washing liquid in the place of the usual heating element, can obtain, even with cold water, immediate molecular agitation and instant and homogeneous mixing of the water with the cleansing agent which does not clot in the cloth and is perfectly biodegradable.

Another aim is that these electrodes be connected to a transformer, preferably a piloted reluctance type, the primary winding of which is made up of two wound inductances, the first anticlockwise and the second clockwise connected to subtract potential difference.

A further aim is that by changing the shape and size of this piloted reluctance transformer it is also possible to heat the water used for washing to the desired temperature regulating it using a standard thermostat.

This and other aims which will be illustrated to the full further ahead are all achieved by the method of washing which is the subject-matter of this invention and which distinguishes itself by the fact that it is made up of one, two or more electrodes made of metal and immersed in the washing liquid and these electrodes are connected to a transformer, preferably a piloted reluctance type, so as to isolate and decouple from the mains and function at less than 50 volts.

Other aims and advantages will be set out in the description which follows and in the enclosed diagram which illustrates and exemplifies a way of realising the invention.

In reference to this diagram, the only drawing illustrates the electric link-up according to the invention, applied to household appliances such as washing machines and similar apparatus.

The feeder line 1 at mains tension, for example 220 Volts, is interrupted by an overall two-pole switch 2 for feeding the primary winding of the transformer 3, preferably a piloted reluctance type.

This transformer 3 is made up of a core consisting of a pack of double C shaped plates the external arms of which have a smaller cross section compared to the cross section of the central arm, and of two windings with copper coils, of which the primary is also made up of two inverted windings connected in parallel to subtract potential difference.

The exit line 4 from this transformer 3 feeds, at a low tension, e.g. 48 Volts, the two electrodes 8, immersed in the washing liquid 9. Nx 5 indicates the washing machine and 6 the container or tank and 7 the drum.

The method of washing, subject matter of this invention, enables a saving of about 30% in the quantity of cleansing agent and over 70% in electric energy needed to carry out a full washing cycle, which takes place at the same time in complete safety because of the low tension, 48 Volts and decoupling from the mains.

The size of the immersed electrodes varies with the dimensions of the clothes or dishes container, but the influence of the dimensions and distances between the electrodes themselves does not cause appreciable variations either in energy consumption or in activating capacity. The present invention, illustrated and described schematically and by example, is to be intended as extendable to those variations in accessories which as such come within the sphere.

In putting the present into practice shapes and dimensions can change according to the particular requirements, the electronic components of the washing machine can be constructed for low tension so as to increase the capacity of the inductive equipment and reduce leakage, the technical details may be substituted by others which are technically equivalent, without for this reason going outside the protective sphere of the claims herein.

Claims

1- METHOD OF WASHING USING EITHER A LOW TEMPERATURE OR COLD WATER WITH LOW TENSION AND IMMERSSED ELECTRODES ESPECIALLY FOR WASHING MACHINES AND DISHWASHERS, characterized by the fact that it includes one, two or more metal electrodes directly immersed in the washing liquid so as to activate the cleansing agent.

2- METHOD OF WASHING, as in claim 1, characterized by the fact that said electrodes are connected to a transformer having a secondary exit, for example at 48 Volts.

3- METHOD OF WASHING, as in claim 2, charac-

terized by the fact that said transformer is preferably a piloted reluctance type, with primary made up of two inverted windings connected in parallel to subtract potential difference.

4- METHOD OF WASHINGS, as in claims 1,2 and 3, characterized by the fact that, by changing the shape and dimensions of said electrodes and said piloted reluctance transformer, it is also possible to heat the water to be used for washing.

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Fig. 1

