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(54) **Paper rolls.**

(57) A roll of paper, such as toilet paper, is wound up on a hollow cylindrical former, the inner surface of the former being coated with a coating containing rupturable microcapsules containing an odoriferous substance.

This invention is concerned with improvements in and relating to rolls of paper supported on hollow cylindrical formers, especially rolls for domestic use such as rolls of toilet paper and rolls of kitchen paper.

Many systems are known whereby an odoriferous material may be introduced into the atmosphere of a confined space, such as a toilet or kitchen. It is an object of the present invention to provide a roll of paper, supported upon a hollow cylindrical former, which roll, in use, is capable of displacing a fragrance or odour to the atmosphere surrounding it.

Basically, the present invention provides a roll of paper wound up on a hollow cylindrical former, the inner surface of the former being coated with a coating containing rupturable microcapsules containing an odoriferous substance. In use, the roll of paper will be supported by a rod-like support passing through the centre of the hollow former and it has found that the mechanical interaction between the surface of the support rod and the coated inner surface of the former causes rupture of some of the microcapsules contained in the coating and, as a result, release of the fragrance or perfume contained therein to the atmosphere.

The hollow cylindrical former, on which the paper is wound, will generally, as is conventional, be formed of cardboard but, of course, other materials, such as plastics materials, may be employed. The coating, comprising microencapsulated odoriferous material, is conveniently applied to the inner surface of the cylindrical format by spraying thereon a dispersion or slurry of microcapsules in a suitable vehicle, typically water. The suspension may have dissolved in the liquid carrier thereof a binding agent for promoting adhesion of the microcapsules to the former surface but in many cases the material of which the outer surface of the microcapsules is formed will of itself have adequate adhesive properties to secure adequate adhesion of the microcapsules to the surface. Thus, for example, one common class of microcapsule comprises, as wall materials, an inner wall of material (in contact with liquid contained in the microcapsule) of gelatin and an outer wall formed of a gum such as gum arabic. The art of forming microcapsules containing organic liquids, such as organic or odoriferous materials, is of course well established and widely practised.

The microcapsules used in accordance with the present invention suitably have a mean particle size in the range 10 to 30 microns, especially 18 to 22 microns. Such capsules will comprise an outer solid shell containing a small charge of liquid odoriferous material which may consist wholly of odoriferous material or comprise a solution in an appropriate carrier of odoriferous material. The shell wall will typically form less than half the weight of the capsule, e.g. 10 to 40% by weight thereof.

We have found that, in order to achieve in-use

fragrance dispensing qualities over the in-use life of the roll, the microcapsules are suitably put down at a rate such as to give from 1 to 2.5 g/m² of residual fragrance at the surface.

The invention is particularly applicable to toilet rolls, that is rolls of toilet paper wound upon a cylindrical hollow former, the web of the roll being perforated in the usual fashion to facilitate its later separation into individual sheets. However, other paper rolls used in domestic situations, particularly in the kitchen, may also be arranged in accordance with the invention, for example rolls of kitchen towels made of absorbent paper. It is an important advantage of the present invention that the storage life of the rolls is good, in excess of 12 months.

Claims

1. A roll of paper wound upon a hollow cylindrical form, the inner surface of the form being coated with a coating containing rupturable microcapsules containing an odoriferous substance.
2. A roll as claimed in claim 1 in the form of a roll of toilet paper.



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 94 30 2156

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.5)
X	US-A-2 999 642 (F. B. STONE) * the whole document * -----	1,2	A47K10/32
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			A47K
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 June 1994	Examiner Delzor, F
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