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(11)

**EP 2 213 588 A1**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:

**04.08.2010 Bulletin 2010/31**

(51) Int Cl.:

**B65D 75/00** (2006.01)

**D21H 21/22** (2006.01)

**D21H 27/00** (2006.01)

(21) Application number: **10425013.9**

(22) Date of filing: **22.01.2010**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL  
PT RO SE SI SK SM TR**

Designated Extension States:

**AL BA RS**

(30) Priority: **30.01.2009 IT FI20090023**

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(54) **A handkerchief in paper material containing a substance having an adjuvant effect in the treatment of allergic rhinitis**

(57) The handkerchief contains substances, such as for example essential oils of vegetal origin, having an adjuvant effect in the treatment of the allergic rhinitis. The

substances can be applied for example through lotion application, or applied in microen-capsulated form.

**EP 2 213 588 A1**

## Description

### Technical field

**[0001]** The present invention relates to improvements to paper products, especially tissue paper products, in particular for example handkerchiefs in tissue paper or the like.

### State of the Art

**[0002]** In the field of paper products manufacturing, in particular tissue paper, single-use products are often produced provided with particular features according to their final destination, usually features which make the use of the product more pleasant and therefore increase the sales thereof. Typically, handkerchiefs with different fragrances are for example produced. In some cases products made of tissue paper are produced, soaked with cleansing substances, for face cleaning, make-up removal or for similar uses. These products are usually singularly packaged in sealed envelopes to prevent evaporation of the cleansing substances.

**[0003]** Other products of this type are soaked with disinfectant substances and are sold singularly sealed, again to prevent evaporation of the disinfectant liquid and to avoid contamination of the product destined to medication.

### Summary of the Invention

**[0004]** The invention provides a paper product, preferably a tissue paper product, for example a handkerchief made of paper material, which has further functions in addition to those traditionally known in this field.

**[0005]** Substantially, according to one aspect, the present invention provides a handkerchief in paper material comprising at least one substance applied to it, said substance having an adjuvant effect in the treatment of allergic rhinitis. This substance can be applied by means of a lotion applicator on the handkerchief, that will be preferably singularly packaged or packaged in the form of a series of handkerchiefs inside a package preferably sealed or partly sealed to reduce or avoid the evaporation of the substance.

**[0006]** In other preferred embodiments of the present invention, the substance can be previously microencapsulated and the microcapsules can be applied on the paper material. This allows a better preservation of the product and of the adjuvant substance applied to it. The use of the handkerchief according to the usual way of use entails the rupture of the microcapsules and therefore the release of the substance having an adjuvant effect in the treatment of allergic rhinitis. In fact, it is sufficient to rub the handkerchief with the fingers, or on the nose to cause rupture of the microcapsules.

**[0007]** A handkerchief manufactured in this way and containing a substance of the above mentioned type of-

fers an innovative function in addition to the products currently on the market, as it allows people suffering allergic rhinitis to derive benefit from the use of the handkerchief so treated.

**[0008]** In general, substance having an adjuvant effect in the treatment of allergic rhinitis means any substance which, through contact, inhalation or any other type of interaction with the human body, allows to obtain advantageous, curative or symptomatic, effects on the allergic rhinitis.

**[0009]** According to some embodiments, said substance is preferably an essential oil of preferably vegetal origin.

**[0010]** On the handkerchief one or more substances can be applied, having the above mentioned features, individually or in addition to other products, substances or elements in liquid, solid (for example powder) form, or microencapsulated or in other adequate form, having complementary or simply additional functions. For example scented, cleansing, emollient substances or others can be used.

**[0011]** Essential oils are known having the above mentioned capacities of giving an adjuvant effect in the treatment of the allergic rhinitis. Some of these essential oils are obtained from lavender, chamomile, hyssop, mugwort or melissa. The invention can be based upon the use of one or more of the essential oils of the above mentioned plants, but it is also possible to use essential oils of other nature, or also substances other than essential oils, but provided with adjuvant effects in the treatment of the allergic rhinitis.

**[0012]** According to a possible embodiment, the essential oil or more essential oils are microencapsulated according to known techniques inside a substance, which forms a membrane for protecting and containing the oil. During the production process the microcapsules obtained can be easily anchored to the cellulosic fibers (or fibers of other nature) which form the paper product. It is also possible to use fillers to facilitate, improve or stimulate this adhesion.

**[0013]** The microcapsules are preferably applied to the material, with which the handkerchiefs will be then produced, in an intermediate phase of the processing cycle, between the unwinder of a reel of tissue paper and the folding machine forming the handkerchiefs. It is also possible to add the essential oils in any form directly in the pulp with which the ply of tissue paper is manufactured in a process of wet production. In other embodiments the handkerchief can be manufactured using a dry forming system (so called air-laid technique). In this case the essential oils, microencapsulated or not microencapsulated, can be applied more easily on the ply in the formation phase, as this occurs without the presence of the high quantities of water which characterize the wet formation of the paper. The microcapsules can be put into suspension in the air current transporting the fibers. In other embodiments, the microcapsules, or the liquid substances can be applied directly on the ply in the formation

phase on the forming fabric, or in a subsequent phase. It is also possible to apply the adjuvant substances also after the formation of the handkerchief, specially if the substance is in the liquid form and not microencapsulated.

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**[0014]** According to other embodiments, the essential oils are applied by means of a lotion applicator. In some embodiments the essential oils can be sprayed on a ply of tissue paper in the processing phase, i.e. along the processing line in an adequate point between the unwinder and the folding machine.

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**[0015]** Based upon how the essential oils, or other substance having adjuvant effect in the treatment of the allergic rhinitis, are applied on the handkerchief it is possible to use packages having a greater or lower sealing grade, to reduce or avoid the evaporation of the adjuvant substances applied in the production and/or packaging phase of the handkerchiefs. In some embodiments, the package can include a double sealing cover made of heat-sealed plastic material. The handkerchiefs can be packaged singularly, or for example in groups of two or three, assuming that, once opened, the package will be used in a short time. For example, an individual package for each handkerchief and an outer cover which contains more handkerchiefs together can be used.

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## Claims

1. A paper handkerchief comprising at least one substance having an adjuvant effect in the treatment of allergic rhinitis. 30
2. The handkerchief as claimed in claim 1, wherein said substance is an essential oil of vegetal origin having an adjuvant effect in the treatment of allergic rhinitis. 35
3. The handkerchief as claimed in claim 2, wherein said at least one essential oil is selected from the group comprising: lavender essential oil, camomile essential oil, hyssop essential oil, mugwort essential oil, balm-mint essential oil. 40
4. The handkerchief as claimed in claim 1, 2, or 3, wherein said at least one substance is contained in microcapsules. 45
5. The handkerchief as claimed in claim 1, 2, 3, or 4, wherein said substance is lotioned on said handkerchief. 50
6. A package of paper handkerchiefs as claimed in one or more of the previous claims.
7. The package as claimed in claim 6, comprising a double sealant enclosure made of heat-sealed plastic material. 55



## EUROPEAN SEARCH REPORT

Application Number  
EP 10 42 5013

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                       |                                                     |
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| Place of search<br>Munich                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                | Date of completion of the search<br>20 April 2010                                                                                                                                                                                                                                     | Examiner<br>Beins, Ulrika                           |
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EPO FORM 1503 (03.02 (P04C01))



## EUROPEAN SEARCH REPORT

Application Number  
EP 10 42 5013

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EP 10 42 5013

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