(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 961 359 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
27.08.2008 Bulletin 2008/35

(51) Int Cl.:
A47L 13/20 *(2006.01)*

(21) Application number: **07003644.7**

(22) Date of filing: **22.02.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

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Remarks:
Geänderte Patentansprüche gemäss Regel 137 (2) EPÜ.

(54) **Wiping cover for a cleaning device**

(57) A wiping cover (1) for a cleaning device (2), comprising at least two layers (3, 4) arranged relative to one another such that a pocket (5) to accommodate a part of a cleaning device (2) is obtained, wherein at least to one layer (3, 4) a wipe-active material (6) is attached, wherein the layers (3, 4) and/or the wipe-active material (6) are adhesively bonded with one another.

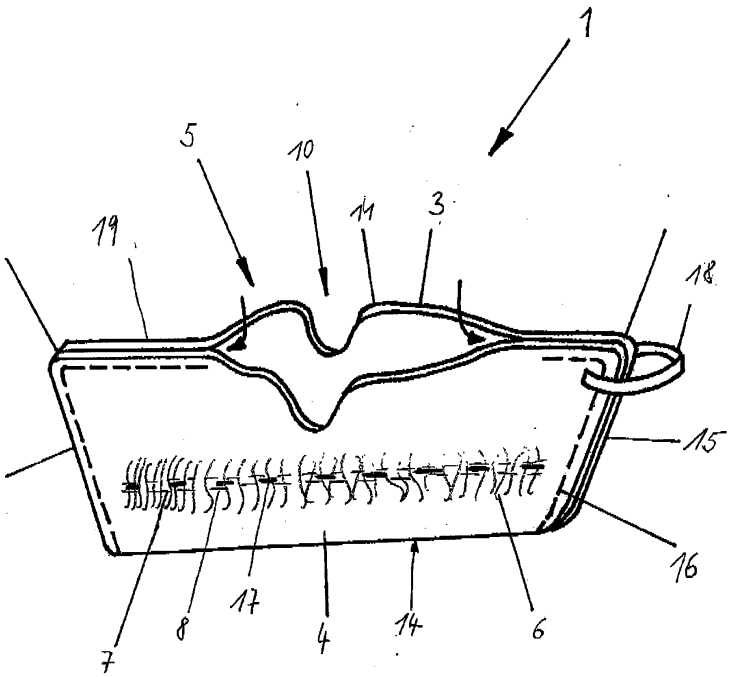

Fig. 2

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Description

Technical area

[0001] The invention relates to a wiping cover for a cleaning device, comprising at least two layers which are arranged relative to each other such that a pocket to accommodate a part of a cleaning device is obtained, wherein a wipe-active material is attached to at least one layer.

Prior art

[0002] Such wiping covers are mounted on wiping plates of flat wipe cloths and serve for the moist cleaning of floor coverings. The layers of the wiping covers mostly consist of a textile fabric and the wipe-active materials are for example strands or flat coverings of microfibres. The wipe-active materials accommodate the cleaning liquid and the dirt particles during cleaning. To manufacture a wiping cover the layers are joined with one another through sewing. The strands are frequently attached on the layers also through a seam. Although this type of joining is particularly robust and durable it however requires great manual effort so that the manufacture of a wiping cover is time-intensive and expensive.

Presentation of the invention

[0003] The invention is based on the object of developing a wiping cover which can be manufactured easily and cost-effectively.

[0004] This object is solved with the features of claims 1 and 11. The sub-claims relate to advantageous developments.

[0005] To solve the object the layers and/or the wipe-active material are adhesively bonded with one another. Fabric-positive joins are particularly easy to manufacture. The process steps for being able to manufacture a fabric-positive joint can additionally be automated so that the manufacture of a wiping cover is simpler and saves, more time. Depending on the type of joint, a robust joint which, like the conventional wiping covers, can for example be subjected to a multiplicity of washing operations. Fabric-positive joints with and without additive, in this case more preferably adhesives, are conceivable. The fabric-positive joint is preferably carried out through ultrasonic welding.

[0006] Ultrasonic welding is a joining method which requires no additive. At the same time, process control is possible wherein the cutting to size of the layers and their material-positive joining takes place in one operation, thus saving time. To this end, the layers are punched from web roll material and simultaneously welded together at the edges.

[0007] The layers can consist of a plastic fabric or of a fabric with a plastic component, for example a mixed plastic-cotton fabric. Plastic fabrics or fabrics with a plastic component are particularly robust and tear-resistant and additionally highly suitable for ultrasonic welding. Conceivable plastics are meltable plastics and, here, more preferably thermoplastics. These are highly suitable for ultrasonic welding.

[0008] The layers can consist of polyethylene, polypropylene or polyamide or of compounds thereof. These plastics are economical and length material of these plastics is particularly suitable for ultrasonic welding. Highly preferable are plastics which are non-hydrolytically degradable. These are for example polyolefins, more preferably polypropylene and aramid fibres. Here, it is advantageous that wiping covers of such plastics are less sensitive and a longer utilisation duration is obtained even with frequent washing operations. The utilisation duration of wiping covers, in this case, is mostly determined through the number of washing and bleaching operations. Plastics of polycondensates, for example polyethylene, have a tendency to hydrolysis upon frequent contact with suds, as a result of which the stability of the plastics drops and the wiping covers manufactured from it become unusable. Polyolefins and aramid fibres however are not subject to hydrolysis. The layers can entirely consist of plastics which are not subject to hydrolysis or only certain components of the layers, more preferably such which are subject to particular loads. These are more preferably the edges of the layers, joining points, seams and such like. It is further possible through insert elements not subject to hydrolysis to reinforce the particularly loaded components.

[0009] The wipe-active material can be formed of strands. Strands have a high water absorption capability so that wiping covers equipped with strands achieve a high unit surface performance. In addition, strands can be provided economically.

[0010] The strands can be combined into ribbons. Such ribbons can be produced in an automated way as a primary product. Through the ribbons the attachment of the strands on the layers is simplified. To this end, the ribbons are cut to size, arranged on the layers and adhesively bonded with the latter. The joint can more preferably be performed also through ultrasonic welding. Ribbons are highly suitable for this purpose since the individual strands in this case are already fixed in the ribbons and it is sufficient to fix the ribbons by sections. However, the attachment can also be performed line-like.

[0011] The wipe-active material can consist of a flat product. A particularly large wipe-active surface is obtained through the flat product. Here, the flat product can be arranged fabric-positively on one or both layers. In the process, the layers merely form a carrier. In another development the wipe-active material itself forms a layer. This results in material saving since the wipe-active material in this case forms the carrier at the same time. One or both layers can be formed through the flat wipe-active material. In this case the flat wipe-active materials are material-positively joined at the edges.

[0012] The wipe-active material can comprise microfi-

bres. Microfibres are characterized by particularly good dirt absorption capacity.

[0013] In a further solution of the object the wiping cover for a cleaning device comprises at least one layer on which, at least on one side, a wipe-active material is attached and the edges of the layer are sealed at least by sections. This sealing is carried out more preferably through fabric-positive joining of the strands protruding from the edges. Here, the edge can be open or a seam can be formed. This seam can also be formed through fabric-positive joining. As a result, a further expensive sewing process is omitted.

[0014] The sealing of the edges is preferably performed through ultrasonic treatment. Here, several process operations can be combined. Cutting to size of the layers and simultaneous sealing of the edges is carried out through ultrasonic cutting or ultrasonic punching.

[0015] At least one layer can have a recess, wherein the edges of the recess are sealed through ultrasonic welding, Popularly, such recesses are punched out and subsequently sewn in with a reinforcing ribbon to prevent fraying of the edges. During ultrasonic welding the edges are slightly melted and the fibres are bonded together at the edges so that fraying is not possible. Sewing on of a special reinforcing ribbon is obsolete. Through ultrasonic welding it is also possible to attach other parts such as finger loops or labels to the wiping cover,

Brief description of the drawing

[0016] Some exemplary embodiments of the wiping cover according to the invention are explained in more detail by means of the figures in the following. These show, in each case schematically:

Fig. 1 a wiping cover on a flat wipe cloth according to the invention;
Fig. 2 a wiping cover with strands as wipe-active material;
Fig. 3 a wiping cover with flat-shaped wipe-active material.

Embodiment of the invention

[0017] Figure 1 shows a wiping cover 1 for a cleaning device 2 which in this development is designed as a flat wipe cloth. The cleaning device 2 comprises a wiping plate 12 which is linked to a stem 13. The wiping cover 1 according to the invention is mounted onto the wiping plate 12.

[0018] Figure 2 shows in detail a wiping cover 1 for the cleaning device 2 shown in Figure 1. The wiping cover 1 consists of two layers 3, 4. These are arranged relative to each other such that a pocket 5 to accommodate a part of the cleaning device 2, in this case the wiping plate 12, is obtained. The layers 3, 4 are manufactured of a one-part flat plastic fabric design consisting of polyamide. For assembly, the plastic fabric cut to size is folded along the subsequent front edge 14 and adhesively bonded along the edges 15 through ultrasonic welding such that an opening to accommodate the wiping plate 12 remains in the wiping cover 1. In this development the welding is performed such that an interrupted line 16 is obtained. However, the weld seam can also be performed continuously or spot-type. In this development a wipe-active material 6 is attached on both layers 3, 4 which consists of strands 7. The strands 7 are joined together in ribbons 8. On a layer 3, 4 several such ribbons 8 are located, for example 3 ribbons 8 per layer. The ribbons 8 and thus the strands 7 are fabric-positively attached to the layers 3,4 through ultrasonic welding. Fixing takes place through several spot-welds 17 arranged at a distance relative to one another to obtain the greatest possible flexibility of the wiping cover 1. The wiping cover 1 additionally has a finger loop 17, which is also attached to the wiping cover 1 through ultrasonic welding. Both layers 3, 4 have a recess 9 to achieve greater freedom of movement for the stem 13. These recesses 9 are punched out by means of an ultrasonic tool and simultaneously sealed at their edges 10. Upon sealing, the fibres forming the boundaries of the edges 10 are melted and joined with one another.

[0019] Figure 3 shows a wiping cover 1 for the cleaning device 2 shown in Figure 1 in detail. In this development the wipe-active material 6 consists of a flat textile product 8, containing microfibres. For attachment to the wiping cover 1 the product 8 is arranged on a layer 4 and adhesively bonded with the layer 4 at the edges 15 through ultrasonic welding. In other embodiments the product 8 is arranged on both layers 3, 4 or it forms one or both layers 3, 4. The invention also comprises wiping covers 1 for pocket mops. Such wiping covers 1 have a basic body with a cleaning side on which the strands 7 or the fabric 8 are arranged. The attachment is carried out as described before. On the other side of the basic body on the narrow sides, pockets to accommodate the mop wings of the pocket mop are located. These pockets according to the invention can also be fabric-positively attached to the basic body through ultrasonic welding.

Claims

1. Wiping cover (1) for a cleaning device (2), comprising at least two layers (3, 4) arranged relative to one another such that a pocket (5) to accommodate a part of a cleaning device (2) is obtained, wherein on at least one layer (3, 4) a wipe-active material (6) is attached, **characterized in that** the layers (3, 4) and/or the wipe-active material (6) are adhesively bonded with one another.

2. The wiping cover according to claim 1, **characterized in that** the fabric-positive joint was performed through ultrasonic welding.

3. The wiping cover according to claims 1 or 2, **characterized in that** the layers (3, 4) consist of a plastic fabric or of a fabric with a plastic component.

4. The wiping cover according to any one of the claims 1 to 3, **characterized in that** the layers (3, 4) consist of polyethylene, polypropylene or polyamide or of compounds thereof.

5. The wiping cover according to any one of the claims 1 to 4, **characterized in that** the layers 3, 4 or components of the layers consist of a plastic which is not hydrolytically degradable.

6. The wiping cover according to any one of the claims 1 to 5, **characterized in that** the wipe-active material (6) is formed of strands (7).

7. The wiping cover according to claim 6, **characterized in that** the strands (7) are combined into ribbons (8).

8. The wiping cover according to any one of the claims 1 to 5, **characterized in that** the wipe-active material (6) consists of a flat product (9).

9. The wiping cover according to claim 8, **characterized in that** the wipe-active material (6) forms a layer (3, 4).

10. The wiping cover according to any one of the claims 1 to 9,
characterized in that the wipe-active material (6) comprises microfibres.

11. The wiping cover (1) for a cleaning device, comprising at least one layer (3) to which at least on one side a wipe-active material is attached, **characterized in that** the edges (11) of the layer (3) are sealed at least by sections.

12. The wiping cover according to claim 11, **characterized in that** the sealing of the edges (11) was performed through an ultrasonic treatment.

13. The wiping cover according to any one of the claims 1 to 9, **characterized in that** at least one layer (3) has a recess (10) wherein the edges (11) of the recess (10) are sealed through ultrasonic welding.

Amended claims in accordance with Rule 137(2) EPC.

1. Wiping cover (1) for a cleaning device (2), comprising at least two layers (3, 4) arranged relative to one another such that a pocket (5) to accommodate a part of a cleaning device (2) is obtained, wherein on at least one layer (3, 4) a wipe-active material (6) is attached, **characterized in that** the wipe-active material (6) is adhesively bonded with the layer.

11. The wiping cover (1) for a cleaning device, comprising at least one layer (3) to which at least on one side a wipe-active material is attached, **characterized in that** the edges (11) of the layer (3) are sealed through fabric-positive joining of the strands protruding from the edges.

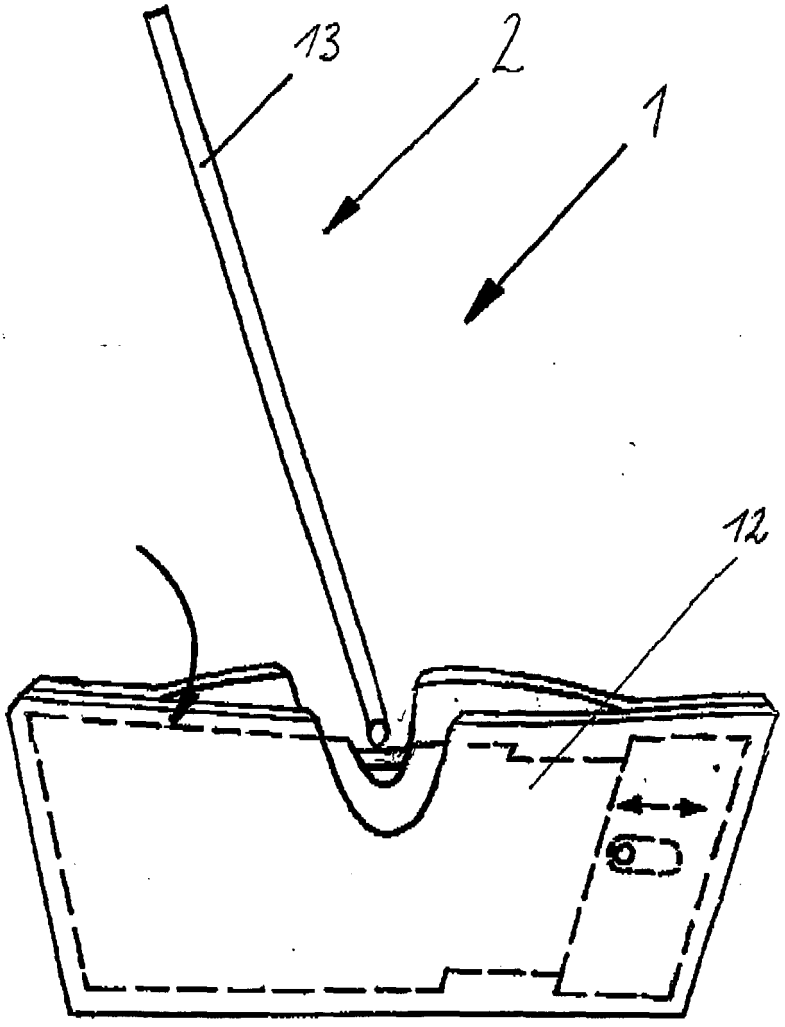

Fig. 1

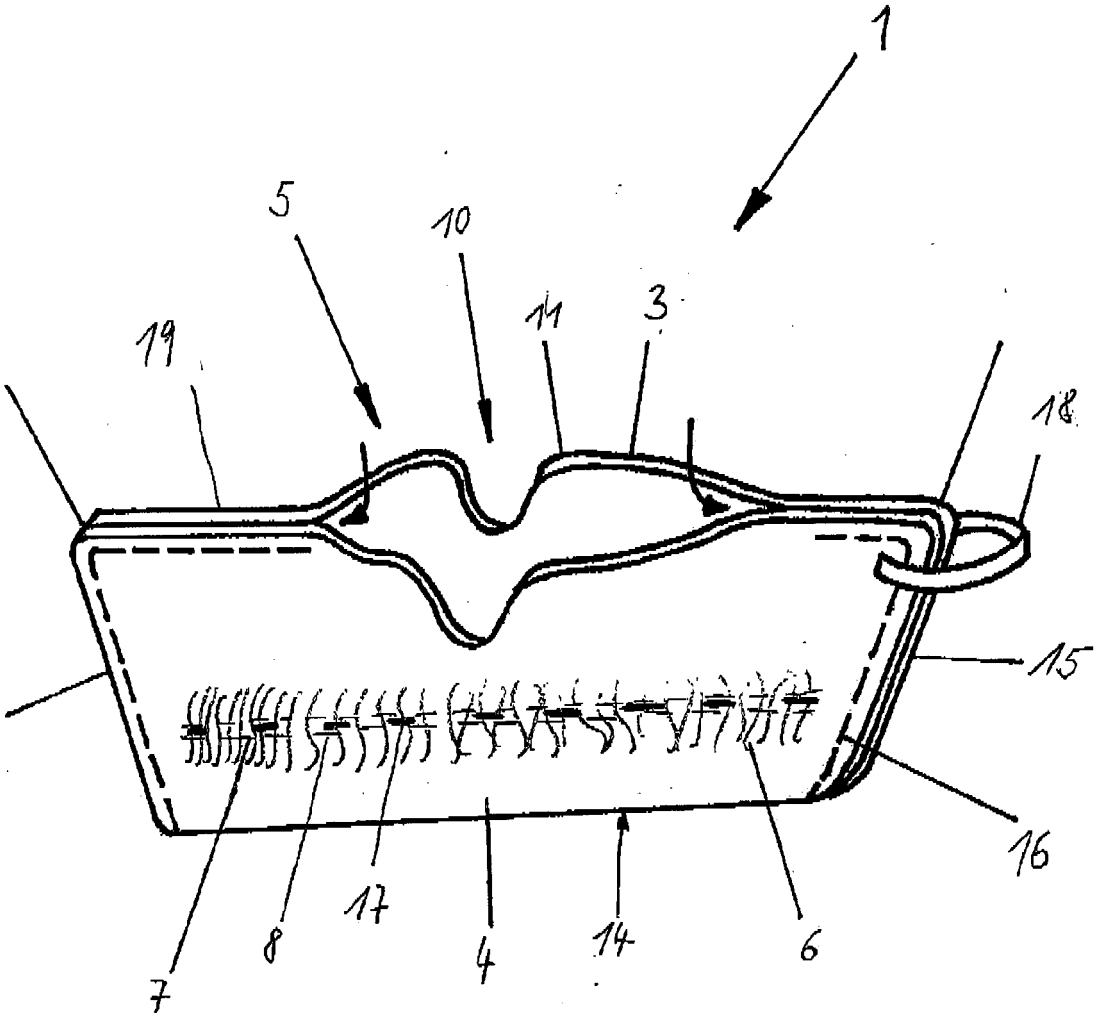

Fig. 2

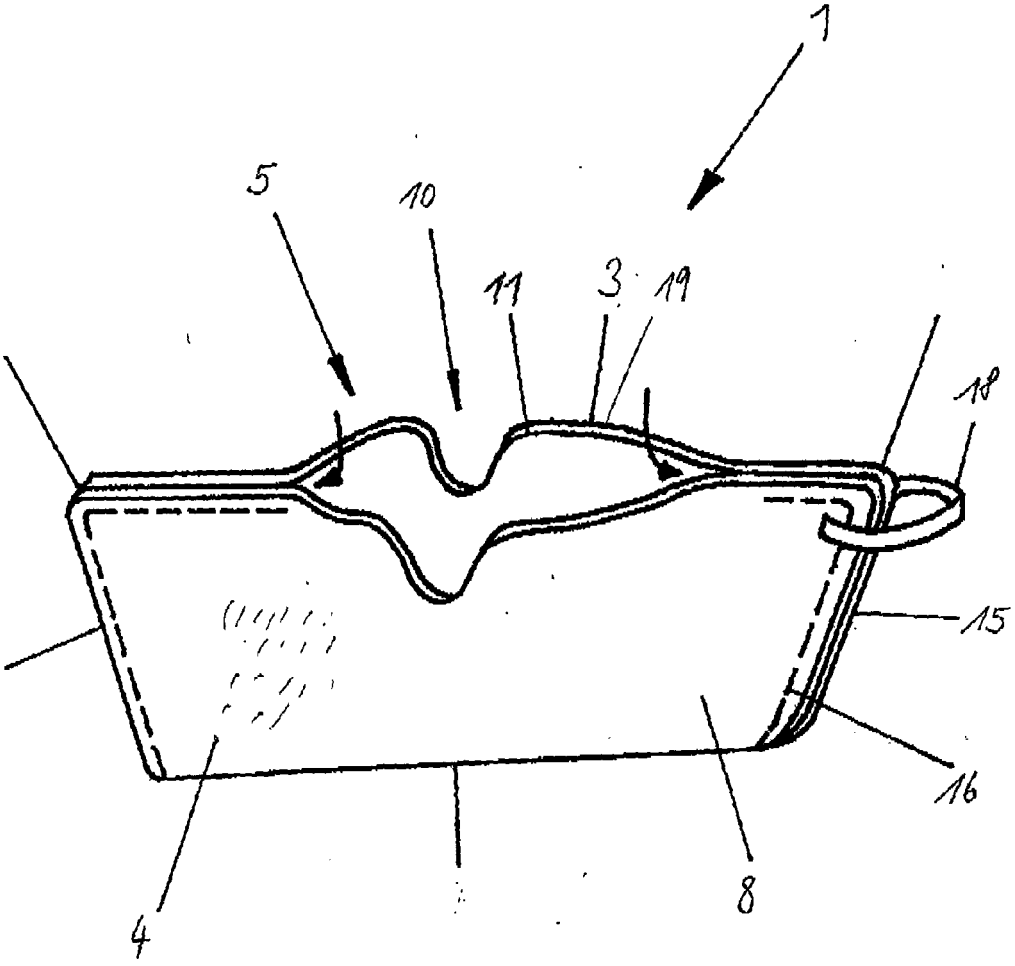

Fig. 3

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Application Number
EP 07 00 3644

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 June 2007	REDELSPERGER, C

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