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## EUROPEAN PATENT APPLICATION

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### (54) **Exchangeable mop head**

(57) The present invention relates to a replaceable fabric coating (1) for floor wet cleaning brushes comprising a plate-like element (2) including a fabric layer (3) bearing, on a surface thereof, a plurality of piles or threads (4) and, on another surface thereof, a plastic

material binding layer (10).

On the plate-like element, at the binding layer side, is superimposed an absorbing material layer (20) which defines opposite pockets (21) for coupling to a frame for tensioning and supporting the plate-like element.

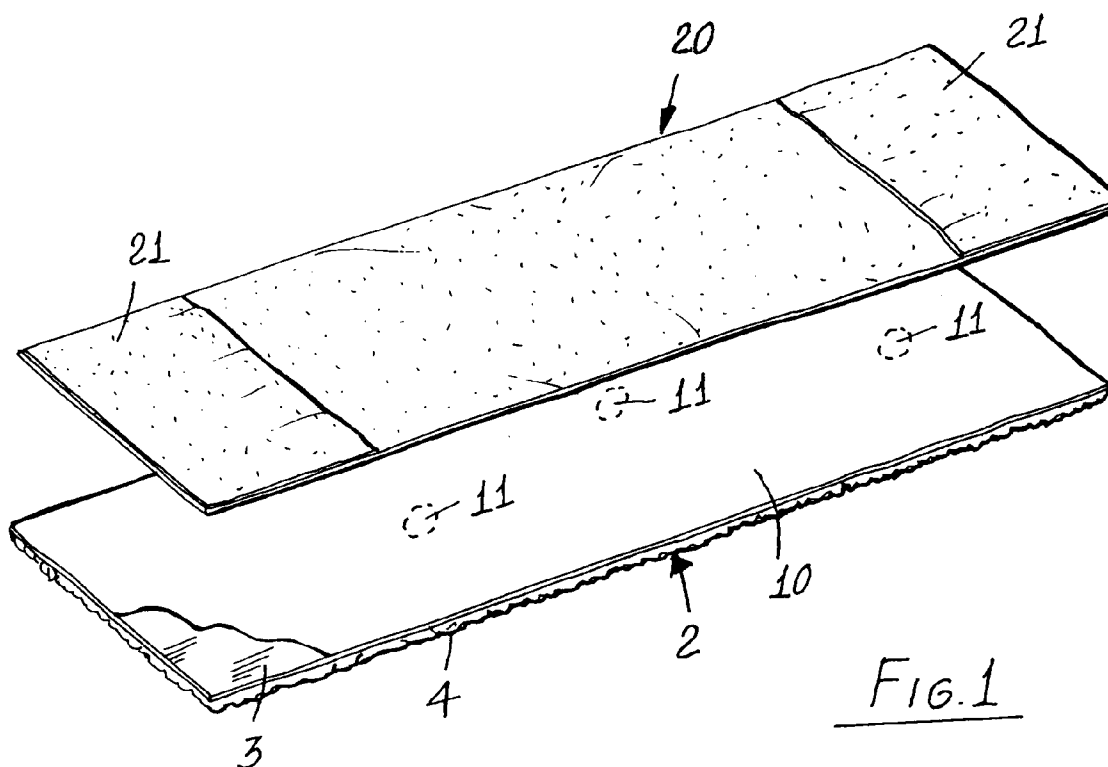


Fig. 1

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## Description

### BACKGROUND OF THE INVENTION

The present invention relates to a replaceable fabric coating for floor wet cleaning brushes and the like.

As is known, are commercially available apparatus for wet cleaning floors, which comprise a cleaning brush, of large size, on which is applied a replaceable coating.

In prior wet washing brushes are conventionally used coating assemblies including a fabric layer which, on a face thereof is provided with a plurality of piles and, on the other face thereof, having a plastic material binding layer.

The latter is usually of an impermeable type.

In order to stiffen this coating fabric, the edge portions thereof are up-turned so as to be superimposed on the rear face or surface, and so as to provide an up-turned portion which, practically extends through the overall periphery of the fabric.

Such a solution has not been found fully satisfactory, since the application of a fully impermeable layer does not properly adjust the moisture which must be present at the pile region, in order to properly clean the floors and the like.

### SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to solve the above mentioned problem, by providing a replaceable fabric coating for floor wet cleaning brushes, which affords the possibility of easily and quickly adjusting the moisture at the pile or thread region thereof, so as to provide a layer able to operate as a liquid "tank" to always provide an optimum desired moisture degree.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a replaceable fabric coating which is very simple construction-wise and which, in particular, does not require that up-turned portions be made on the pile provided face of the fabric.

Another object of the present invention is to provide such a replaceable fabric coating which, owing to its construction features, is very reliable and safe in operation.

Yet another object of the present invention is to provide such a replaceable fabric coating for floor wet cleaning brushes, which can be easily made starting from easily commercially available materials and which, moreover, is very competitive from a mere economic standpoint.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a replaceable fabric coating for floor wet cleaning brushes, characterized in that said coating comprises a plate-like element having a fabric

layer including, on a face thereof, a plurality of piles or threads and, on the other face thereof, a plastic material binding layer.

On the aforesaid plate-like element is superimposed an absorbing material layer, defining opposite pockets for connection to a frame for tensioning and supporting said plate-like element.

### BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent hereinafter from the following detailed disclosure of a replaceable fabric coating for floor wet cleaning brushes, which is illustrated, by way of an indicative, but not limitative example, in the accompanying drawings, where:

Figure 1 is an exploded perspective view illustrating the replaceable coating according to the present invention;

Figure 2 illustrates the coating according to the present invention as seen from the rear face or surface thereof;

Figure 3 is a cross-sectional view substantially taken along the line III-III of Figure 2;

Figure 4 is a further schematic view illustrating the replaceable coating according to the invention as applied to a brush.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the number references of the above mentioned figures, the replaceable fabric coating for floor wet cleaning brushes according to the present invention, which has been generally indicated by the reference number 1, comprises a plate-like element 2, which includes a fabric layer 3, having, on a face thereof, a plurality of piles 4 which are evenly distributed.

The plate-like element 2 has a normally elongated configuration, so as to be fitted to the coupling frame 5 to be connected to a cleaning brush, generally indicated by the reference number 6.

On the face of the fabric layer 3 opposite to that having the piles or threads 4, is provided a plastic material binding layer 10, operating for binding and connecting to one another the warp and weft threads or yarns of the layer 3, so as to provide a supporting layer for the plate-like element.

The plastic material layer is advantageously made of a porous plastic material and, if desired, throughgoing holes 11 or throughgoing spots 12 are provided there-through, the function of which will become more apparent hereinafter.

To the plate-like element 2, which is made in a flat shape without any up-turned portions, is coupled an absorbing material layer, indicated by the reference number 20, which can be made of a not-woven fabric

material, of a foamed plastic material, for example of the open cell type, or of any other materials suitable to properly absorb the moisture.

The layer 20 is coupled to the plate-like element 2 by means of seaming stitches or by glueing, or any other coupling methods suitable to stably connect the two superimposed elements.

The layer 20, defines, at opposite positions, a pair of pockets 21 for coupling with the end portion of the frame 5 of the brush 6.

The provision of the at least partially absorbing material layer is very important, since it will allow to absorb the excess liquid on the piles 4, with the consequent possibility of releasing said liquid, through the throughgoing holes 11 and/or the seaming stitches 12 as the moisture degree decreases under said values.

Thus, in actual practice, this layer of an at least partially absorbing material, in addition to stiffen the replaceable coating, will provide the very important function of always hold a desired moisture degree.

From the above it should be apparent that the invention fully achieves the intended aim and objects and, in particular, the fact is to be pointed out that a replaceable coating has been provided which is very simple from the construction standpoint, since in said coating are simply mutually superimposed the plate-like element which does not include any folded portions, and the partially absorbing material layer which, in addition to operating as a moisture adjusting member, is also adapted to properly stiffen the coating.

In this connection it should be furthermore pointed out that the replaceable coating 1 according to the present invention comprises a fabric layer 3 having on a face thereof a plurality of piles or threads 4 and, on the other face thereof, a binding layer 10, seamed to a stiffening and reinforcement material layer, made of a not woven fabric 20, which is associated with the first on the overall surface thereof.

The subject replaceable coating, as seen from the top, has a rectangular or substantially rectangular configuration, with a removal of material at the corners thereof, which, as needed, can be suitably rounded.

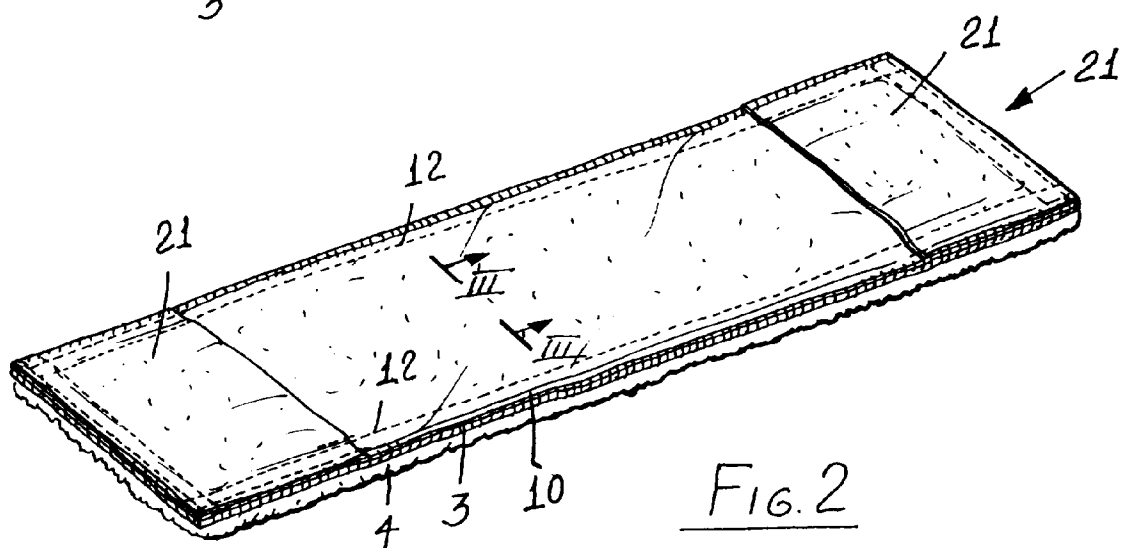
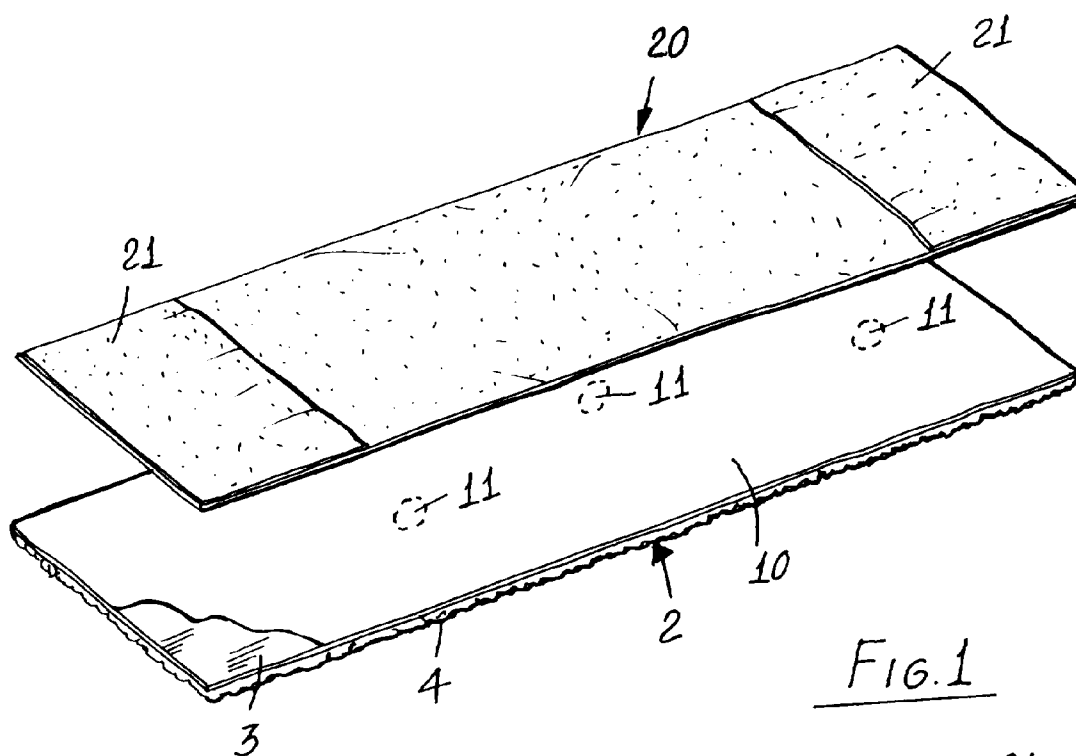
In practicing the invention, the used materials, provided that they are compatible to the intended use, as well as the contingent size and shapes, can be any, depending on requirements.

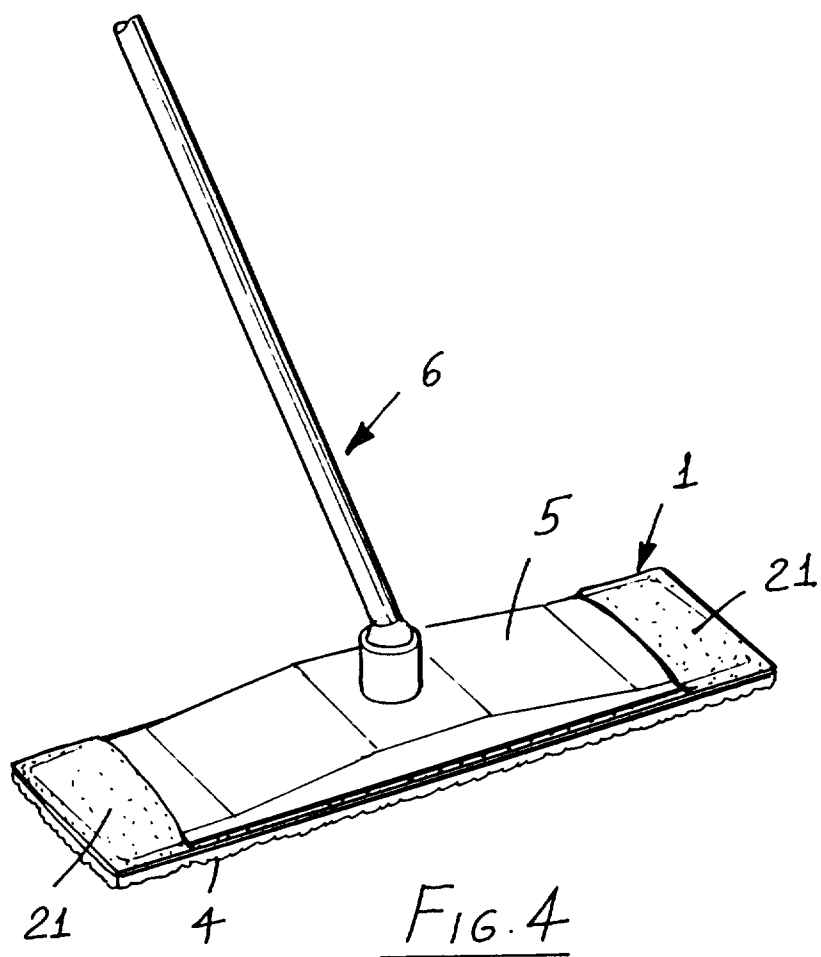
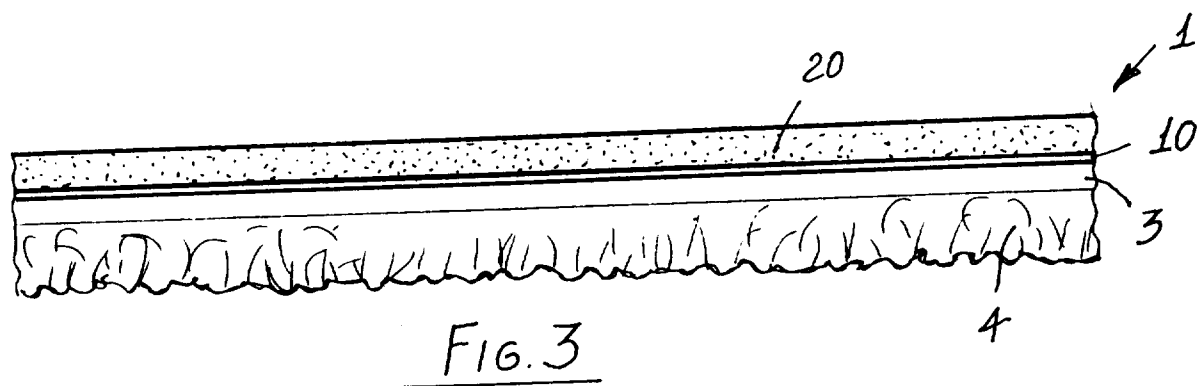
## Claims

1. A replaceable fabric coating for floor wet cleaning brushes, characterized in that said coating comprises a plate-like element, including a fabric layer having, on a face thereof, a plurality of piles or threads and, on the other face thereof, a plastic material binding layer, on said plate-like element being superimposed an absorbing stiffening and reinforcement material layer, which defines oppo-

site pockets for connection to a tensioning frame supporting said plate-like element.

2. A replaceable coating, according to Claim 1, characterized in that said plastic material binding layer is made of a porous plastic material.
3. A replaceable coating, according to Claims 1 and 2, characterized in that said plastic material binding layer is provided with a plurality of a throughgoing holes for allowing a liquid to pass from said piles to said absorbing material layer and/or vice-versa.
4. A replaceable coating, according to one or more of the preceding claims, characterized in that said absorbing material layer comprises a not-woven fabric layer.
5. A replaceable coating, according to one or more of the preceding claims, characterized in that said absorbing material layer comprises a foamed plastic material layer.
6. A replaceable coating, according to one or more of the preceding claims, characterized in that said coating comprises a fabric layer having on a face thereof a plurality of piles or threads and, on the other face thereof, a binding layer, seamed to a stiffening and reinforcement material layer made of a not-woven fabric.
7. A replaceable coating, according to one or more of the preceding claims, characterized in that said stiffening and reinforcement layer is superimposed on said fabric layer including said piles or threads and provided with a plastic material binding layer.
8. A replaceable coating, according to one or more of the preceding claims, characterized in that said coating, as seen from the top thereof, has a rectangular or substantially rectangular configuration, with removal of material at the corners thereof, which may be possibly rounded.
9. A replaceable fabric coating for floor wet cleaning brushes, according to one or more of the preceding claims, characterized in that said coating is provided with layers coupled by throughgoing seaming stitches, allowing excess moisture to gradually and controllably pass from the not-woven fabric absorbing layer to the fabric layer including said piles or threads, through said binding layer, as broadly disclosed and illustrated for the intended aim and objects.







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# EUROPEAN SEARCH REPORT

Application Number  
EP 95 83 0417

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.6)
X	DE-U-94 08 885 (I.MEYER) * page 5, last paragraph - page 6; figures 4,5 *	1,2,5-9	A47L13/20
A	DE-U-94 11 385 (M. BURKHARDT ) * page 3, last paragraph - page 4; figures *	1-9	
A	DE-U-93 09 657 (WEMATIK AG) * the whole document *	1-9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A47L
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 January 1996	Examiner Vanmol, M
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>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</p> <p>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  &amp; : member of the same patent family, corresponding document</p>			

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