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(54) **CLEANING CLOTH HAVING A DUAL CLEANING FUNCTION**

REINIGUNGSTUCH MIT DOPPELTER REINIGUNGSFUNKTION

ÉTOFFE DE NETTOYAGE DOTÉE D'UNE DOUBLE FONCTION DE NETTOYAGE

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US-A1- 2016 367 103**

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Description

[0001] The present invention relates to a cleaning cloth having a dual cleaning function, wherein the cleaning cloth is comprised of a knitted consecutive base material having two different cleaning surfaces. The present invention further relates to a cleaning article comprising the cleaning cloth and the use of the cleaning cloth for cleaning a surface and providing a dry and strike free finish.

[0002] In the professional cleaning services in the household, restaurant, office, and transport market various types of cleaning cloths are known, which serve for the cleaning of office furniture, vehicles, floors, restrooms or other surfaces. Most cleaning cloths are microfiber cloths and many variations are available having different cleaning tasks, for example for dusting surfaces, cleaning windows and mirrors, and shining stainless steel. Apart from the dirt and liquid absorption and release, important properties of a cleaning cloth are its durability, sliding properties and softness of the cloth. An optimal cleaning cloth is flexible in both wet and dry conditions and durable over time, producing a smooth, dry and clean finish.

[0003] Microfiber cleaning cloths are generally comprised of a fiber having a linear density of one denier or less and are especially suitable for cleaning surfaces without the need for using additional cleaning agents, e.g. for picking up dust or dirt particles as well as the removal of oils and grease. Typically such cloths are either woven, or non-woven or knitted. A non-woven cleaning cloth is generally made of two sheets of non-woven fabric and a solid core material sandwiched between the two sheets. The two sheets are bonded to each other and the core material by bonding points which in time and due to its use during cleaning the outer layers become loose and weak leading to disintegration of the cleaning cloth resulting in a reduced cleaning functionality and durability of the cloth.

[0004] Furthermore known microfiber cleaning cloths exhibit a limited number of properties desirable for one specific cleaning purpose, such as the cleaning of a wet surface, but does not provide an optimal dry finish at the same time. Therefore, often another cleaning item or cloth having a smooth surface is being used that has the desired property for leaving a dry surface after cleaning. Another example is the cleaning caked hard particles of a surface wherein often a scouring pad and/or a cleaning cloth using abrasive agent is needed to loosen the particles and clean the surface. After the first cleaning of the caked hard particles another cleaning item, such as a soft cleaning cloth is being used to provide for a clean finish.

[0005] Considering the above, there is a need in the art for a cleaning cloth that provides for a dual cleaning function/action with a single cleaning cloth that is easy to use and provides improved cleaning efficiency, while maintaining a clean finish without the need for a second cleaning cloths or items to achieve the clean finish. Furthermore, there is a need to provide for a cleaning cloth having improved physical and durable properties and to reduce the number of cleaning items and cleaning agents being used, thereby reducing the waste as result of the dual cleaning action.

[0006] A cleaning cloth according to the preamble of claim 1 is known from patent document US 2016 367103 A1.

[0007] It is an object of the present invention, amongst other objects, to address the above need in the art. The object of present invention, amongst other objects, is met by the present invention as outlined in the appended claims.

[0008] Specifically, the above object, amongst other objects, is met, according to a first aspect, by the present invention by a cleaning cloth according to claim 1.

[0009] The cloth of present invention compromises at least two different knitted cleaning surfaces on the same cloth while containing a functional coating on both sides of the fabric. This makes the cloth extra functional because it combines two key aspects very important for effective cleaning; 1) The abrasive geometric pattern cleaning surface in combination with the functional coating is very effective to remove (caked) dirt and debris, while the homogeneous terry cleaning surface of the cleaning cloth functions as a chamois-like cloth to absorb water and leave a streak-free surface after cleaning resulting is a clean and stain free surface. The homogenous terry-loop pattern (also known as terrycloth or terry), is a fabric woven with many protruding long loops of thread, which can absorb large amounts of water. The length of loops determines how much fluid is absorbed by the cloth as longer loops provide more surface area to absorb and come in contact with the fluid. This terry loop pattern enables a clean and dry finish when using the cloth.

[0010] The problem of cleaning different surfaces and leaving a clean finish as mentioned above can be solved when using two or more cloths or cleaning products (i.e. one abrasive cloth and/or abrasive detergent and one smooth cleaning cloth for drying the surface and leaving a clean finish). Therefore for each cleaning action a further cleaning cloth or cleaning item is needed. The cleaning cloth of present invention is comprised of one consecutive piece of base material that comprises two different cleaning surfaces, which provides separate cleaning action (i.e. dual functionality) in one cloth. This is also preferably looking at waste (one cloth instead of two).

[0011] Furthermore, since the cloth is comprised of one piece of consecutive base material there is no need for connection points or laminar approach to provide at one side the terry cleaning surface and at the other side a cleaning surface comprised of a geometric abrasive pattern. In addition to the polymer coating, the consecutive base material improves the durability and physical properties of the cleaning cloth in comparison to the known laminated cleaning cloths.

[0012] According to a preferred embodiment, the present invention relates to the cleaning cloth, wherein the three dimensional abrasive pattern is comprised of geometric structures, wherein one or more of the geometric structures

have the shape selected from the group consisting of rice grain, coffee bean, waffle, stripe, chequer, sphere, cube, cuboid, torus, cylinder, cone, triangle, pyramid, prism, preferably rice grain, coffee bean or waffle. The cleaning cloth of present invention is intended for the domestic and commercial cleaning industries. The geometric structure can be any kind of pattern which functions as an abrasive structure, preferably rice grain, coffee bean or waffle. The abrasive geometric pattern present on one surface of the cleaning cloth provides an optimal contact surface for cleaning dirty and/or cake surfaces, whereas on the other side of the cleaning cloth provides a smooth, soft terry pattern on the surface (chamois like) for an improved drying function, clean finish of the cleaning cloth. The product makes cleaning for its users a lot easier. It may be advantageously to provide a cleaning cloth surface having a mixed pattern of abrasive geometric structures, i.e. by adding a second knitting pattern that provides a low drag with a first pattern having high abrasive cleaning efficiency.

[0013] According to another preferred embodiment, the present invention relates to the cleaning cloth wherein the three dimensional geometric structures are a knitting of woven pattern of geometric structures knitted or woven into the base material or wherein the three dimensional geometric structures have been moulded, shaved or carved into the base material. The geometrical structure can be created on several ways. The geometrical structure is preferably created by a knitting technique where the 3D geometrical pattern is knitted in the structure, for example by jacquard knitting. The geometrical pattern can also be created by shaving a knitted terry fabric on one side which causes a pattern due to high and low fiber areas or the geometric pattern can be created by knitting with two or more different yarns which causes a geometrical pattern and different terry-loop lengths.

[0014] Described herein is a cleaning cloth wherein the three dimensional geometric structures cover between 10% to 95%, preferably between 25% to 75%, more preferably 40% to 60% of the surface A of the cleaning cloth. The higher the percentage of three dimensional abrasive geometric structures present on one surface of the cleaning cloth, the higher the abrasive contact surface is of the cleaning cloth for cleaning dirty and/or cake surfaces. If a less abrasive cloth is desired the percentage of three dimensional structures covering the cloth surface can be reduced.

[0015] According to yet another preferred embodiment, the present invention relates to the cleaning cloth wherein both surface A and surface B of the cleaning cloth are coated with a coating comprised of polyurethane (PU), latex, polyvinyl formal or polyvinyl alcohol (PVA). To increase the cleaning performance of the cleaning cloth it can be coated for example with a thermoplastic polyurethane (PU) coating, a polyvinylalcohol (PVA) coating or a latex coating. The result is a finished product with optimal physical-mechanical characteristics and optimal bonding between the polymer resin and (micro-) fiber of the fabric and resulting in a cloth with a porous polymer microfoam having micropores. In the process of applying a coating to the cloth, the base substrate is impregnated with the polymer resin which is subsequently precipitated and then crosslinked thereby creating a microporous micro foam on both sides of the fabric. The coating of the cleaning cloth of present invention on both sides, results in a cleaning cloth having a coating layer with good drying capabilities and cleaning functionality and having improved durability. The porous microfoam coating provides the textile advantageous properties such as producing a smooth, dry and clean finish on a wiped surface.

[0016] Described herein is a cleaning cloth wherein the coating does not change the three dimensional pattern of the surface A. The abrasive character or functionality of the surface comprised of the geometric pattern should be maintained or even improved after coating of the surface, to safeguard the dual cleaning functionality of the cleaning cloth. Same holds for the terry surface where the water uptake and clean finish functionality of the cleaning cloth should remain intact after coating of the surface B. The purpose of the coating is different on the individual sides. With the 3D structures of surface A the function is to improve the cleaning power of these abrasive structure because the coating provides an even more abrasive contact surface of the cloth. On the smooth plain side comprising a soft terry pattern on the surface (Surface B) the function is to provide a streak-free and dry finish.

[0017] Described herein is a cleaning cloth wherein the coating comprises less than 60% wt%, preferably less than 40 wt%, most preferably less than 35 wt% of the overall weight of the cleaning cloth. In case the coating comprises more than 60% wt% of coating, a high volume of the space between and around the fibers in the cloth will be occupied by the coating polymer resulting in a stiff, less absorbent and less cleaning effective cleaning cloth. Furthermore more than 60% wt% of the cloth being coating will influence the three dimensional structure of the cloth, as a result losing the cleaning effectiveness of the three dimensional surface.

[0018] According to yet another preferred embodiment, the present invention relates to the cleaning cloth wherein the knitted consecutive base material is comprised of microfiber material selected from the group consisting of polyester, polyamide, viscose, modified polyester, polyester blend fabric, polyamide blend fabric, polyacrylonitrile, triacetate, acetate, polycarbonate, polyolefins, polyethylene, polypropylene, polyvinyl chloride, glass fibers, and mixtures thereof, preferably polyester and/or polyamide.

[0019] According to yet another preferred embodiment, the present invention relates to the cleaning cloth wherein the cleaning cloth is comprised of the knitted or woven consecutive base material in the range from 150 to 400 g/m², preferably 190 to 300g/m², more preferably 230 to 280 g/m². In case the fabric weight is below 150 g/m² the weight of the cleaning cloth becomes too low to create sufficient height difference in the three dimensional geometric structure such that the abrasive properties and cleaning effectiveness of the three dimensional cloth will not be sufficient to achieve an improved

cleaning efficiency. On the other hand if the weight of the base material becomes higher than 400 g/m² the fabric density of the final cleaning cloth will be too high, resulting in a cloth that has a too thick feel and lead to reduced handling of the cloth, causing too much effort for the user to handle the cleaning cloth, such as folding and wring-out of the cleaning cloth.

[0020] The present invention, according to an embodiment, relates to a cleaning article comprising a cleaning cloth of present invention. The cloths may be used as part of a mop, or pad, or brush or sponge or laminate of another cloth.

[0021] The present invention, according to a further aspect, relates to use of a cleaning cloth of present invention for cleaning a surface and providing a dry, and strike free finish.

[0022] The present invention will be further detailed in the following examples and figures wherein:

Figure 1: shows examples of the surfaces (3x A surface and 1x B surface) of the cleaning cloth of present invention. In three pictures the surface A is shown having a three dimensional abrasive pattern being coffee bean, rice grain or waffle pattern. The cleaning cloth is comprised of a knitted consecutive base material and the three dimensional geometric structures are knitted into the base material. The bottom right picture shows the surface B of the cleaning cloth of present inventions having a homogenous terry-loop structure without geometric pattern or structures.

Examples

[0023] A cleaning cloth according to present invention was tested and compared on cleaning effectiveness to general available, premium quality microfiber cleaning cloths; SORBO® microfiber, VILEDA® microfiber cloth, and SORBO® SWITCH microfiber cloth (see below for more details). The test is performed in a climate-controlled room and under atmospheric test conditions in accordance with ISO 139: 1973 Standard atmospheres for conditioning and testing

Test method

[0024] A dirt strip of 20 x 5 cm is applied to a mirror measuring 100 x 50 cm. The dirt strip is a designated area positioned in the middle of the mirror and marked on the mirror with a waterproof marker. On the dirt strip a contamination is applied and spread evenly over the entire dirt strip. This test uses four different types of contamination:

- greasy dirt: mayonnaise ;
- sticky dirt: apple syrup or syrup;
- inorganic dirt: toothpaste ;
- dry / solid dirt: wax crayon.

[0025] The damp cleaning cloth sample is placed on the mirror with surface A facing the mirror. The cleaning cloth sample is placed at least 5 cm in front of the dirt strip. A hard block of polyamide plastic with a surface size of 280x80mm is then placed on the center of the cleaning cloth. The weight of the block is 1120 grams. The plastic block realizes a contact pressure of 5g / cm² from the cloth to the mirror. Using two clamps, the cleaning cloth is connected to a linear actuator that sweeps the cleaning cloth at a speed of 30mm / over the soiling strip (x-direction) without changing the y-direction. The test is repeated with the same cleaning cloth and with the same side A and unchanged cloth positioning, until the contamination of the glass plate has been removed. The number of passages is counted and represents the "cleaning efficiency". The lower the number of passes, the better the effectiveness of the cloth is to remove dirt from a surface. When the contamination is completely absorbed and/or removed by the cleaning cloth, the cleaning cloth is turned over with a clean side B of the cloth facing the mirror. Now the cleaning cloth is passed over the mirror again by means of the actuator in order to obtain a shiny result. After this last pass, it is measured how fast the mirror is completely dry. The time that is needed for the mirror to completely dry up, is called "wipe-ability" (seconds). The lower the wipe-ability, the less moisture and residue are left behind by the cloth on the glass plate which in turns leads to a cleaner result. It is then visually assessed whether the glass plate is clean and here an assessment is indicated between 1 and 4 "clean result". The scale is divided as follows: 1 = "Poor": not clean, much dirt / grease still present, 2 = "Moderate": not clean, still a little bit of dirt / grease present, 3 = "Good": clean, but not streak-free, 4 = "Excellent": completely streak-free. Between testing new type of contamination or a new cleaning cloths sample the mirror is cleaned with a 80% ethanol solution (Denatured alcohol).

Preparation of samples

[0026] To remove any contaminants from surfactants in the cleaning cloth sample, the cleaning cloth is individually washed once in a Miele domestic washing machine, at 40 degrees Celsius (normal white wash program), without using any detergent. The cleaning cloth is then air dried until it feels completely dry. After it has completely dried, the cleaning

cloth is cut to size 30x30cm. The cleaning cloth is placed in demineralized water at 20 ° C for 1 minute after washing. The cloth is then passed through a laboratory mangle in an unfolded form, with the rubber rollers set at a pressure of 2 kg / cm² to obtain a damp cloth. The cleaning cloth is now ready for the test.

Materials

[0027] The following cleaning cloths were tested in a comparative cleaning effectiveness study.

A) A cloth as defined in this invention, a double-sided microfiber cloth of polyester / polyamide blend, PU coated. Side A of this cloth has a knitted 3 dimensional coffee bean structure, side B has a homogenous terry side.

B) A SORBO@ microfiber cloth 40x40cm (product GTIN: 8710577925027), a microfiber cloth of polyester / polyamide blend, without coating and with an homogenous terry fabric on both sides of the cloth.

C) A VILEDA@ microfiber cloth "kitchen" (product GTIN 4023103124943), a double-sided microfiber cloth of polyester / polyamide blend without coating. Side A of this cloth has linear stripes of 100% polyamide yarn, Side B has a homogenous Terry structure

D) A SORBO@ SWITCH microfiber cloth (product GTIN: 8712113132753) a microfiber cloth of polyester / polyamide blend with PU coating, both sides of the cloth have a uniform terry-like texture.

[0028] The cloths are prepared as described above. A contamination is then applied to the marked dirt strip on the mirror as described in the test method. The following contaminations were used during the test.

- i. 5 grams Calvé® Squeeze yofresh (Mayonaise)
- ii. 5 grams Timson® Rinse Appelstroop (Apple Syrup)
- iii. Black Bruynzeel® Wax Crayon (area completely colored in)
- iv. 5 grams Elmex® toothpaste.

Results

[0029] Three tests were carried out in series for each type of dirt and per cloth. A clean cloth was taken for each test. The results as shown below show the average of the three tests.

i) Calvé® Squeeze Yofresh

[0030]

Cleaning cloth	Cleaning efficiency (number of wipes)	Wipe-ability (seconds)	Clean result
Cloth A : double sided coffee bean PU cloth	3	26	3
Cloth B : SORBO@ microfiber cloth	5	74	2
Cloth C : VILEDA@ microfiber cloth Kitchen	4	89	2
Cloth D : SORBO@ Switch microfiber cloth	4	33	4

ii) Timson® Rinse Apple Syrup

[0031]

Cleaning cloth	Cleaning efficiency (number of wipes)	Wipe-ability (seconds)	Clean result
Cloth A : double sided coffee bean PU cloth	6	24	4
Cloth B : SORBO@ microfib er cloth	8	79	3

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(continued)

Cleaning cloth	Cleaning efficiency (number of wipes)	Wipe-ability (seconds)	Clean result
Cloth C : VILEDA® microfiber cloth Kitchen	6	84	3
Cloth D : SORBO® Switch microfiber cloth	7	29	4

iii) Black Bruynzeel® Wax Crayon

[0032]

Cleaning cloth	Cleaning efficiency (number of wipes)	Wipe-ability (seconds)	Clean result
Cloth A : double sided coffee bean PU cloth	2	24	4
Cloth B : SORBO® microfiber cloth	2	72	4
Cloth C : VILEDA® microfiber cloth Kitchen	2	79	4
Cloth D : SORBO® Switch microfiber cloth	3	28	4

iv) Elmex® toothpaste

[0033]

Cleaning cloth	Cleaning efficiency (number of wipes)	Wipe-ability (seconds)	Clean result
Cloth A : double sided coffee bean PU cloth	5	24	3
Cloth B : SORBO® microfiber cloth	9	72	3
Cloth C : VILEDA® microfiber cloth Kitchen	7	79	3
Cloth D : SORBO® Switch microfiber cloth	7	28	3

[0034] The results with the Calvé® Squeeze Yofresh show that sample A outperforms the other samples with wipe-ability and cleaning efficiency. Only at clean result sample D performs better. With Timson® Rinse Apple Syrup, sample A performs best across all tests and comes out best in the test. With the Bruynzeel® Wax Crayon show test in the area of cleaning efficiency Sample A performs the same as samples B and C. However, on wipe ability sample A does better than samples B and C. In the test with Elmex® toothpaste, sample A clearly performs much better than the other samples.

Conclusion

[0035] Based on the test with 4 types of contamination on a mirror, it can be concluded that a cleaning cloth such as described by this invention shows a better overall cleaning performance providing a dry and clean, streak-free finish. The cloth of present invention has improved wipe-ability, leaving less moisture and residue behind leading to a cleaner end result. It has been clearly demonstrated that the cloth of present invention can achieve an improved cleaning result more efficiently than other microfiber cleaning cloths available on the market.

Claims

1. Cleaning cloth having a dual cleaning function, wherein the cleaning cloth is comprised of a knitted consecutive base material having a surface A that differs from a surface B, wherein surface A comprises a three dimensional abrasive pattern and surface B comprises a homogenous terry-loop pattern, wherein the three dimensional abrasive pattern is comprised of geometric structures, wherein one or more of the geometric structures have the shape selected from the group consisting of rice grain, coffee bean, waffle, stripe, chequer, sphere, cube, cuboid, torus, cylinder, cone, triangle, pyramid, prism, preferably rice grain, coffee bean or waffle, **characterised in that** the three dimensional geometric structures are a knitting of woven pattern of geometric structures knitted or woven into the base material.
2. Cleaning cloth according to claim 1, wherein the three dimensional geometric structures have been moulded, shaved or carved into the base material.
3. Cleaning cloth according to claim 1 or 2, wherein the three dimensional geometric structures cover between 10% to 95%, preferably between 25% to 75%, more preferably 40% to 60% of the surface A of the cleaning cloth.
4. Cleaning cloth according to any of the claims 1 to 3, wherein the knitted consecutive base material is comprised of microfiber material selected from the group consisting of polyester, polyamide, viscose, modified polyester, polyester blend fabric, polyamide blend fabric, polyacrylonitrile, triacetate, acetate, polycarbonate, polyolefins, polyethylene, polypropylene, polyvinyl chloride, glass fibers, and mixtures thereof, preferably polyester and/or polyamide.
5. Cleaning cloth according to any of the claims 1 to 4, wherein the cleaning cloth is comprised of the knitted consecutive base material in the range from 150 to 400 g/m². preferably 190 to 300 g/m², more preferably 230 to 280 g/m².
6. A cleaning article comprising a cleaning cloth according to any one of claims 1 to 5.
7. Use of a cleaning cloth of any of the claims 1 to 6 for cleaning a surface and providing a dry, streak free finish.

Patentansprüche

1. Reinigungstuch mit einer doppelten Reinigungsfunktion:

wobei das Reinigungstuch ein gestricktes, fortlaufendes Basismaterial mit einer sich von einer Oberfläche B unterscheidenden Oberfläche A aufweist, wobei die Oberfläche A ein dreidimensionales abrasives Muster und die Oberfläche B ein homogenes Frottee-Schlingenmuster aufweist, wobei das dreidimensionale abrasive Muster aus geometrischen Strukturen besteht, wobei eine oder mehrere der geometrischen Strukturen die Form haben, ausgewählt aus der Gruppe, bestehend aus Reiskorn, Kaffeebohne, Waffel, Streifen, Schachbrett, Kugel, Würfel, Quader, Torus, Zylinder, Kegel, Dreieck, Pyramide, Prisma, vorzugsweise Reiskorn, Kaffeebohne oder Waffel, **dadurch gekennzeichnet,**
dass die dreidimensionalen geometrischen Strukturen ein gestricktes oder gewebtes Muster aus in das Grundmaterial eingestrickten oder eingewebten geometrischen Strukturen darstellen.

2. Reinigungstuch nach Anspruch 1, wobei die dreidimensionalen geometrischen Strukturen in das Basismaterial geformt, geschabt oder gekerbt wurden.
3. Reinigungstuch nach Anspruch 1 oder 2, wobei die dreidimensionalen geometrischen Strukturen zwischen 10% und 95%, vorzugsweise zwischen 25% und 75%, besonders bevorzugt 40% bis 60% der Oberfläche A des Reinigungstuches bedecken.
4. Reinigungstuch nach einem der Ansprüche 1 bis 3, wobei das gestrickte, fortlaufende Basismaterial aus einem Mikrofasermaterial besteht, ausgewählt aus der Gruppe, bestehend aus Polyester, Polyamid, Viskose, modifiziertem Polyester, Polyesterischgewebe, Polyamid-Mischgewebe, Polyacrylnitril, Triacetat, Acetat, Polycarbonat, Polyolefinen, Polyethylen, Polypropylen, Polyvinylchlorid, Glasfasern und Mischungen davon, vorzugsweise Polyester und/oder Polyamid.
5. Reinigungstuch nach einem der Ansprüche 1 bis 4,

wobei das Reinigungstuch zu 150 bis 400 g/m², vorzugsweise 190 bis 300 g/m², noch bevorzugter 230 bis 280 g/m² aus dem gestrickten, fortlaufenden Grundmaterial besteht.

6. Ein Reinigungsartikel mit einem Reinigungstuch nach einem der Ansprüche 1 bis 5.

7. Verwendung eines Reinigungstuches nach einem der Ansprüche 1 bis 6 zum Reinigen einer Oberfläche und zum Herstellen einer trockenen, streifenfreien Oberfläche.

Revendications

1. Étoffe de nettoyage ayant une double fonction de nettoyage, dans laquelle l'étoffe de nettoyage est composée d'un matériau de base consécutif tricoté ayant une surface A qui diffère d'une surface B, dans laquelle la surface A comprend un motif abrasif tridimensionnel et la surface B comprend un motif de boucle peluche homogène, dans laquelle le motif abrasif tridimensionnel est composé de structures géométriques, dans laquelle une ou plusieurs des structures géométriques ont la forme sélectionnée dans le groupe constitué par grain de riz, grain de café, gaufre, rayure, damier, sphère, cube, cuboïde, tore, cylindre, cône, triangle, pyramide, prisme, de préférence grain de riz, grain de café ou gaufre, **caractérisée en ce que** les structures géométriques tridimensionnelles sont un tricot de motif tissé de structures géométriques tricotées ou tissées dans le matériau de base.

2. Étoffe de nettoyage selon la revendication 1, dans laquelle les structures géométriques tridimensionnelles ont été moulées, rasées ou taillées dans le matériau de base.

3. Étoffe de nettoyage selon la revendication 1 ou 2, dans laquelle les structures géométriques tridimensionnelles couvrent entre 10 % à 95 %, de préférence entre 25 % à 75 %, de manière davantage préférée 40 % à 60 % de la surface A de l'étoffe de nettoyage.

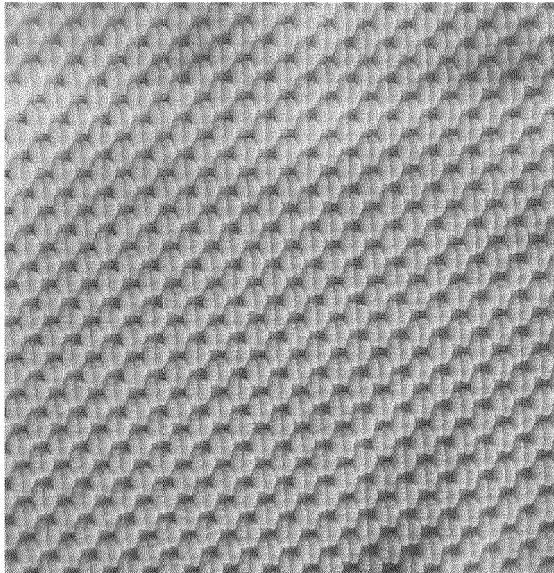
4. Étoffe de nettoyage selon l'une quelconque des revendications 1 à 3, dans laquelle le matériau de base consécutif tricoté est composé d'un matériau microfibre sélectionné dans le groupe constitué par polyester, polyamide, viscose, polyester modifié, tissu de polyester mélangé, tissu de polyamide mélangé, polyacrylonitrile, triacétate, acétate, polycarbonate, polyoléfines, polyéthylène, polypropylène, polychlorure de vinyle, fibres de verre et mélanges de ceux-ci, de préférence polyester et/ou polyamide.

5. Étoffe de nettoyage selon l'une quelconque des revendications 1 à 4, dans laquelle l'étoffe de nettoyage est composée du matériau de base consécutif tricoté dans la plage de 150 à 400 g/m², de préférence 190 à 300 g/m², de manière davantage préférée 230 à 280 g/m².

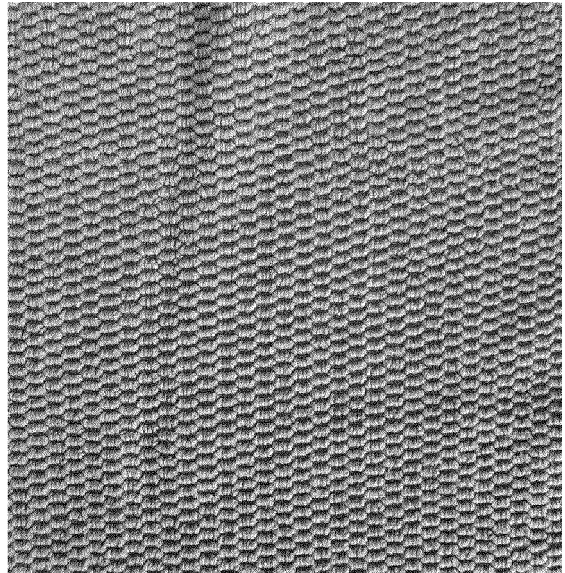
6. Article de nettoyage comprenant une étoffe de nettoyage selon l'une quelconque des revendications 1 à 5.

7. Utilisation d'une étoffe de nettoyage selon l'une quelconque des revendications 1 à 6 pour nettoyer une surface et fournir un fini sec, sans trace.

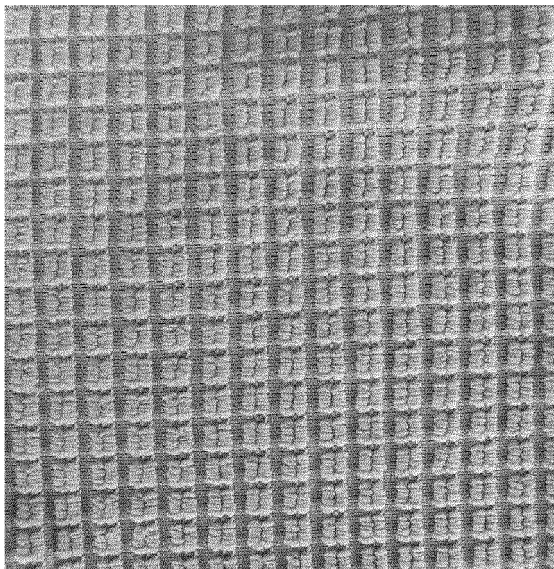
Figure 1



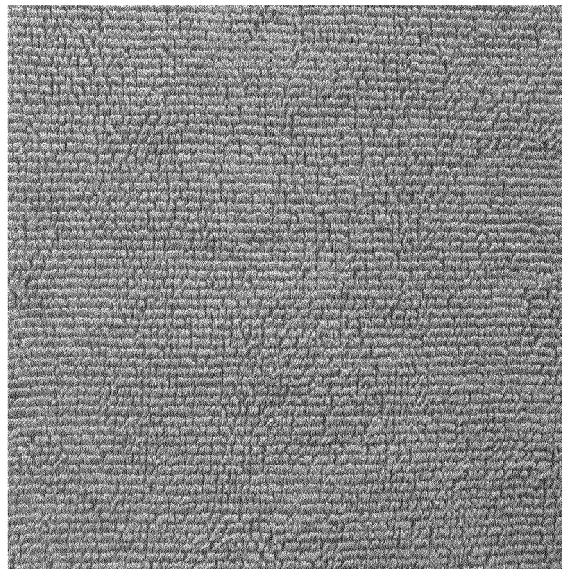
Surface A, Coffee bean pattern



Surface A, Rice pattern



Surface A, Waffle pattern



Surface B, Terry (no geometrical pattern)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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