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(54) **Title:** CLEANING CLOTH THAT CAN BE JOINED TO A MOP BASE

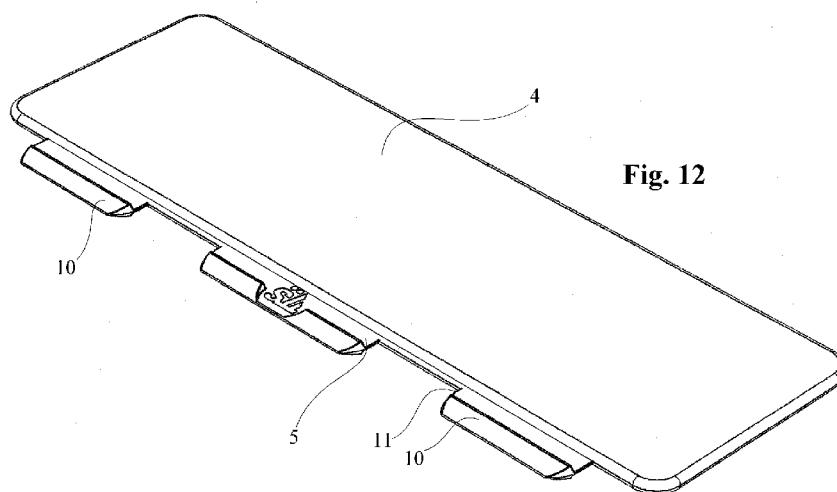


Fig. 12

(57) **Abstract:** The invention concerns a cloth equipped along one of its lengthwise edges with a protrusion, perpendicular or co-planar to the plane of the cleaning surfaces of said cloth; said protrusion being suitable for being joined to a mop base with a gripper mouth.

Description

Title of Invention: CLEANING CLOTH THAT CAN BE JOINED TO A MOP BASE

Technical Field

- [1] This concerns a cleaning cloth, and in particular a cloth for cleaning floors, that is suitable for being used together with a mop base.

Background Art

- [2] Cloths for cleaning floors are well known, they are generally wet or dry, and are suitable for being used together with a mop base.
- [3] As is well known, said mops are effectively retained by their respective bases during the cleaning.
- [4] At the end of the above-mentioned cleaning operations, the mop is disengaged from the base to be put in a container for dirty cloths to be washed and eventually re-used when clean.
- [5] There are numerous methods for fixing said cloth to the base; the most frequently used method provides for the insertion of the protruding parts of the mop base inside pockets that the cloth has on the ends on the side opposite the cleaning side.
- [6] The side to be used for fixing to the mop base support is not an active side for cleaning since the cloths generally only use one side.
- [7] Naturally, when this side of the cloth for cleaning is dirty, it is clear that it needs changing so that cleaning operations can continue.
- [8] Even these modest operations for replacing the cloth (or washing, if the operator has a wringer and cleaning liquid at hand) can slow down cleaning operations, forcing the operator to interrupt normal activities to detach the dirty cloth, put it in a special container or bag for dirty cloths, and then take a fresh clean cloth, normally putting it on the floor so that it can then be attached to the mop base.
- [9] Naturally these slowdowns could be reduced by being able to use both cleaning surfaces of the cloth.
- [10] Currently there are bases that retain a cleaning cloth at the side along a lengthwise edge and they allow you to use just a single surface.
- [11] However, this system up until now has encountered huge drawbacks to its use and distribution, because it is not always reliable in holding the cloth on the base and because of the frequency of the occasions needed for the replacement phase, and the waste of time this involves.
- [12] Indeed, current bases for holding the cloth along the side do not have sufficient retaining force.

- [13] The lack of a secure hold sometimes leads to a loss of contact following a crosswise movement, and very often following lengthwise movements of the cloth, which constitutes the retention edge.
- [14] This impedes many specific cleaning operations, like very close to the skirting board, where a series of alternating lengthwise movements are required along the lengthwise axis of the cloth whose profile constitutes the retention edge of the cloth.
- [15] Therefore sudden stress on the cloth that leads to a lengthwise movement of the cloth itself with respect to the base usually leads to an interruption of the solid connection with the mop base, forcing the operator to stop, grab the cloth and lay it out on the floor in a way that makes it possible to join it to the mop base again.
- [16] In fact it should be borne in mind that since cloths are normally soft and flimsy, the connection between the cloth and the mop base, which should take place contemporaneously along the entire lengthwise edge of the cloth, requires that the latter be laid out on the floor without folds or wrinkling, and with a lengthwise edge laid linearly in front of the retaining edge of the mop base.
- [17] In fact, every new attachment, whether to replace a dirty cloth with a clean one, or whether happening unexpectedly because of an accidental detachment, means the operator has to carry out a tiresome operation that certainly wastes time.
- [18] This annoying operation is tolerated even less when it involves a wet and dirty cloth.
- [19] In fact, it involves gripping the cloth with the hands and putting it down calmly and precisely on the floor.
- [20] This is to prevent the edge that will be retained on the base being ragged, something that would not allow the mop base to easily attach to it.
- [21] Other systems that make use of pockets, buttons, pins, etc., can also make sense during one of the phases, generally the connection phase, but are disadvantageous in the uncoupling phase, because very often they require a manual intervention.

Disclosure of Invention

Technical Problem

- [22] The aim of this invention is to make available a cloth that can overcome one or more of the above-mentioned drawbacks.
- [23] Another object of this invention is to make available a cloth that can easily be attached to a mop base of the gripper variety, in a reliable manner, in particular without requiring any manual intervention.
- [24] A further object of this invention is to make available a cloth that can easily be disengaged from the mop base of the gripper variety, without requiring any manual intervention.
- [25] An even further object of this invention is to make available a cloth that is relatively

easy to arrange so that it can be securely connected to the mop base of the gripper variety.

[26] Another object of this invention is to make available a cloth that can also be used with lateral cleaning movements without undergoing any loosening or detachment from the base it is attached to.

[27] A further object of this invention is to make available a cloth that can be held securely also in the face of abrupt lengthwise stresses with respect to the mop base.

[28] An even further object of this invention is to make available a cloth that can be retained securely and that is easy to connect even after numerous washes, without the connecting part deteriorating.

[29] An even further object of this invention is to make available a cloth that can be wrung by a wringer even when attached to the mop base after being rinsed.

[30] Another object of this invention is to make available a cloth whose means of connection do not introduce parts that will deteriorate even before the cloth itself

Solution to Problem

Technical Solution

[31] One or more of these objectives is achieved by the cleaning cloth that is the object of this invention in accordance with the attached claims.

[32] Said cleaning cloth also achieves other aims that will be explained more fully in the description.

[33] In particular, the object of the invention is a cleaning cloth including at least one coupling element, suitable for being joined solidly to a mop base, protruding along at least one lengthwise edge of said cloth, whose thickness and/or rigidity is greater than the material from which the cloth is made.

Advantageous Effects of Invention

Advantageous Effects

[34] Beneficially said protrusion is aimed in a normal direction to one or both the active cleaning surfaces of the cloth, presenting itself as a swelling of the perimeter side or the edge to be used for the attachment.

[35] Beneficially said protrusion is aimed in a direction that is coplanar to the cloth, presenting itself as an overhanging coupling element with respect to the structure of the cloth.

[36] Beneficially, by using a rigid or semi-rigid material for said coupling element you prevent the cloth from deteriorating in the part that comes into contact with the mop base, thereby prolonging the life of the cloth.

[37] Beneficially, said coupling element is configured like a blade, also divided into separate and eventually spaced elements, a plate joined solidly to the cloth along the

lengthwise retention edge, and usefully said blade has an enlargement or increase in the end section along its free edge, opposite to the one joined to the cloth, where said enlargement is capable of connecting to the gripper of a mop base.

- [38] Conveniently, said enlargement has a sawtooth-shaped section conveniently smoothed at the end of the overhang in order to facilitate the insertion into the mouth of the gripper and ensure it is held inside the mouth of the gripper safe from unwanted detachments.
- [39] Very conveniently the height of the tooth is comparable to the thickness of the cloth, and in any event high enough to maintain a direction of the point of the arrow that is not directed downwards, namely towards the floor when the cloth is laying on the ground, i.e. laid out on the floor.
- [40] Advantageously the cloth has both surfaces that are active and suitable for cleaning, allowing, with two equal surfaces of the cloth, an increase in the amount of surface that can be cleaned with a considerable saving of time.
- [41] Another advantage consists of the fact that both opposite and active surfaces suited to cleaning are made of different materials and finishes to carry out a dedicated and diverse cleaning phase.
- [42] An even further advantage consists of the fact that in combination, or otherwise, with a cloth with a double active cleaning surface, the protruding blade for being gripped and attached to the cloth has a symmetrical enlargement of the opposite free edge, thereby creating a symmetrical and mirrored configuration.
- [43] Another advantage comes from the fact that said enlarged edge has a double sawtooth configuration, with the tooth directed towards each side, conveniently smoothed at its overhanging end to facilitate insertion into the mouth of the gripper.
- [44] Advantageously said blade has one or more recesses at the locators near the gripping mouth of the mop base.
- [45] Another advantage of these recesses is that they form a locator and facilitate the correct insertion of the blade into the mouth of the gripper.
- [46] Said recesses also provide the edges that in association with the locators near the mouth of the gripper act as crosswise limit stops, limiting or preventing the lateral movements between the cloth and the mop base, preventing detachment because of sliding.
- [47] Another advantage of these recesses is that they continue for a large part of the crosswise breadth of the blade, with the blade therefore remaining a single element, eventually only for the overlapping part joining the cloth, but keeping the smooth and continuous edge fitted with sufficient rigidity to be left on the floor by the operator, without particular care and laying practically already with said edge with a fin lying flat with a linear arrangement, continuous and straight of its finned edge, so as to be

already ready to be joined to the mouth of the gripper without further handling.

[48] Eventually these recesses continue for the entire crosswise dimension of the blade, dividing the blade into two or more parts, allowing the recesses near the mouth of the mop base to arrive up to the edge of the cloth to be joined and avoiding having a blade as long as the lengthwise extension of the cloth, sometimes too long to keep a single position suitable for quick and reliable gripping.

[49] Beneficially the adoption of an edge protruding from the cleaning cloth provides the easy, but above all, complete wringing of the entire cloth, still attached to the base, said operation being necessary when it is rinsed to be re-used instead of being detached for its replacement with a new one.

[50] A justification and explanation of the above-mentioned advantageous characteristics is set out below.

[51] The stiffening of the edge to be used for the coupling comes mainly from the increase of the section of the protrusion and/or the material of said protrusion compared to the cloth capable of joining to the mop base.

[52] Eventually this stiffening is increased also because of a partial additional insertion, or overlapping, of the fin inside the cloth.

[53] By placing said fin in the centre line of the cloth, the position at the crosswise axis of the moment of inertia is kept unchanged, and therefore this facilitates the maintenance over the time of the lying flat of the cleaning cloth with a fin, also after numerous treatments, in particular high temperature washing and disinfection.

[54] Thanks mainly to the above-mentioned characteristics, the stiffening of the end of the edge, the partial supplementary stiffening inside the cloth section, and the symmetrical arrangement of the rigid structure, it is possible to obtain a cleaning cloth that when thrown on the floor by the operator, even without any particular precautions, keeps the edge to be used for the attachment in a continuous and smooth configuration to be engaged by the mouth of the mop base gripper.

[55] The characteristics described above, facilitating the mop base joining the exposed overhanging blade, always obtain, because of the reasons outlined above, not only a cloth with a protruding edge ready for attachment with a flat layout and in a smooth and continuous configuration of this edge, but also slightly raised with respect to the floor to facilitate even further the sliding beneath the lower half-frame of the gripper mouth, and not directly against it.

[56] Advantageously provisions are made for a retaining gripper mouth of a mop base with an angled profile to be able to come close, scraping along the floor, underneath the coupling edge.

[57] To render the grip more secure, there is a swelling at the end of the free part of the blade; in fact it is clear that no matter how tightly the fin is gripped (stiffened end part),

the release stresses, together with other unfavourable conditions to any retention, like detergents, soaps, etc., facilitate its being pulled out; therefore a sizeable enlargement of the end of the blade helps keep the cloth gripped and any detachment would only be possible after overcoming the friction forces due to the gripping pressure, and also forcing the gripper to a partial opening, until at least the position necessary for the passage of the enlargement.

- [58] An improvement of this general enlargement is obtained with a profile of the edge to be used for the attachment having a sawtooth section; in addition to the benefits described above, any pulling would be most unlikely and therefore any detachment, if not activated by the operator who opens the gripper, practically impossible.
- [59] Cooperation between the steep front of the sawtooth with a similar and complementary front on the base, would make an undesired detachment of the cloth from the base irreversible; with this configuration also any lengthwise stress operated on the cloth would have no effect, in that it is directly countered on the steep front of the tooth and completely absorbed by the complementary configuration of the steep front in the mouth of the mop base.
- [60] The height of this sawtooth would bring the free end, suitably smoothed, to a height, with respect to the support base of the cleaning cloth, to overcome the attachment edge of the mop base, thereby facilitating the operation to overcome the initial part of the gripper of the mop base.
- [61] For an improved and more convenient management of the cloth, a symmetrical double sawtooth configuration arranged directly on the edge was chosen, or opportunely spaced along the free overhanging edge of the fin that is an accessory of the cloth. This double sawtooth configuration facilitates the laying of the cloth on the floor and helps the operator in operations to change and replace the cloth when putting the cloth on the floor, since the operator is no longer forced to pay attention as to the application side of the fin because this is symmetrical.
- [62] It is evident that all the methods described above for implementing the rigid end parts of the side edge of the cloth, preferably implemented with a blade or wing, allow the property of the cloth to remain the same; in fact even if each configuration shows its own or improved characteristic for joining to the respective cleaning cloth, it can be implemented without any effects on the real capacity of the cleaning cloth, on the geometric configuration and on its ease of use, during and after the cleaning operations.
- [63] Always with an eye to improving the management and treatment of this finned cloth, it was found useful to use recesses on the protruding edge of this fin, in order to facilitate a precise attachment to the base in a crosswise direction, in association with special locators on the mop base, something that allows the operator to easily bring the

base closer to the cleaning cloth without too much trouble, because said recesses are slightly countersunk and allow for the auto-centring of the cloth in the gripper mouth of the mop base.

[64] The shape of the recesses on the protruding edge or on the fin defines the maximum depth the cloth can enter inside the mouth of the mop base gripper, since it comes up against special limit stops next to said mouth of the gripper; this device helps the operator to join the base to the cloth by limiting the insertion depth of the edge or the fin inside the mouth of the gripper, so that it cannot go beyond this depth, something that would compromise the closing of the gripper itself, and also wasting part of the active surface of the cleaning cloth that would not be placed near the floor to be cleaned.

[65] Another advantage provided by the presence and the configuration of these recesses of the above-mentioned blade lies in the fact that they prevent excessive movements regarding the attachment that has occurred between the cloth and the base, avoiding the cloth becoming detached from the base. As was said, the cloth can be detached not only by crosswise pulling, but also following lengthwise movement. The lateral shoulders of the recesses come up against the side walls of the locators, and by joining to them in an adaptive or auto-centring way, they prevent those movements that, if excessive, lead to an unwanted detachment of the cleaning cloth from the base.

[66] Another possible configuration of these recesses is where they continue open until they reach the cloth. Advantageously the depth limit of these recesses is the lengthwise edge of the cleaning cloth that has not been stiffened.

[67] Nevertheless, said fin can continue to be monolithic, preserving its continuity inside the profile of the lengthwise edge of the cleaning cloth, or these recesses could be total and through-passing, not maintaining therefore the structural unity of the wing that would find itself configured as two or more elements joined solidly together on the edge of the cleaning cloth, slightly spaced out from each other.

[68] The advantage of this latter configuration with the recesses, total and through-passing, lies in the fact that the fin is divided into two or more parts, avoiding differentiated tensions because of the coupling between the fin and the cloth that could have the cloth take on a configuration that is not flat and not linear.

Brief Description of Drawings

Description of Drawings

[69] The technical characteristics of the invention, according to the above-mentioned aims, can be clearly found in the content of the claims below, and its benefits will become even more evident in the detailed description that follows, made with reference to the attached drawings, which represent a form that is purely exemplary

and in no way restrictive, where:

- [70] Fig. 1 shows a normal cleaning cloth, with no devices for an easy and secure attachment to a mop base.
- [71] Fig. 2 shows a normal cleaning cloth that shows the drawback that prevents an easy lengthwise attachment to a mop base fitted with a gripper.
- [72] Fig. 3 shows a normal cleaning cloth that shows another type of drawback that prevents an easy lengthwise attachment to a mop base fitted with a gripper.
- [73] Fig. 4 shows a prospective view of a cleaning cloth in accordance with the invention, with a coplanar protrusion that is perpendicular to the active surface of the cleaning cloth.
- [74] Fig. 5 shows a crosswise section of the cloth of fig. 4 with a coplanar protrusion from the active surface of the cloth.
- [75] Fig. 6 shows the cloth of fig. 5 where the attachment blade has partially penetrated the cloth and eventually resting on the axis of symmetry of said cloth.
- [76] Fig. 7 shows crosswise section of an alternative realisation of a cleaning cloth according to the invention, with a protrusion that is perpendicular to the active surface of the cleaning cloth.
- [77] Fig. 8 shows the cloth of fig. 5 with a fin with an enlargement at the end on the free edge.
- [78] Fig. 9 shows the cloth of fig. 5 with a fin whose free edge is configured as a sawtooth.
- [79] Fig. 10 shows the cloth of fig. 5 with a fin whose free edge is configured as a double saw tooth with a rounded off end.
- [80] Fig. 11 shows a prospective view of the cloth of fig. 10.
- [81] Fig. 12 shows the cloth of fig. 11 where the fin has crosswise recesses.
- [82] Fig. 13 shows the cloth of fig. 12 where the crosswise recesses continue up to the edge of the cloth.
- [83] Fig. 14 shows details of the cloth near the gripping mouth of a mop base.
- [84] Fig. 15 shows details of the cloth held inside the gripping mouth of a mop base.
- [85] Fig. 16 shows the collaboration between the recesses of the fin with the locators near the gripping mouth of the mop base.

Best Mode for Carrying out the Invention

Best Mode

- [86] With reference to the drawings, the normal cleaning cloth, indicated with 1, does not have any devices for facilitating it being gripped by the mouth of a gripper of a mop base, and it is rectangular in shape.
- [87] However, this cloth 1, especially when wet, and above all if flimsy, when it is left to

fall on the floor by the operator, almost always the edge to be gripped is not flat and quite often it has a fold 2, overlapping, or with a configuration of the edge that is not smooth and continuous, but with a recess 3.

[88] A cloth on the floor that has either a fold 2 or a recess 3 makes any gripping operation difficult to carry out and practically impossible at the first attempt, since it requires some manual adjustment.

[89] For the reason set out above, these normal cleaning cloths should be laid down with care, arranged on the floor with a continuous layout and a linear profile of the perimeter edges.

[90] Nevertheless such cloths of the prior art, which have no specific stiffening devices on the outer edge, are not very practical for being joined to a mop base.

[91] In the mop base 4 however, which is the object of the invention, there are specific devices for joining to the mop base.

[92] In particular, the mop base 4, which is the object of the invention, has a protrusion 12, or an enlargement or increase in section, on at least one lengthwise edge that increases the firmness and/or the thickness.

[93] This protrusion 12, which advantageously is perpendicular to one or both the active surfaces of the cleaning cloth, realises and attains many of the characteristic advantages mentioned above.

[94] Another type of protrusion on the mop base that is the object of this invention, comes out of the lengthwise edge in a direction that is coplanar to the cleaning cloth, as an overhang, being configured as a stiffened part or a fin 5, made of a material that is more solid and stiffer with respect to the cloth 4.

[95] In this way it is possible to lay the cloth out on the floor without worrying, with a probable certainty that it will lay flat and with a linear profile, namely with a configuration that is suited to being attached, without further handling, to a mouth of a gripper of a mop base.

[96] The fin 5, in order to highlight the characteristics set out above, can partially continue inside the cloth for a partial piece 6, facilitating both the realisation and conferral of greater rigidity due to the overlapping of the thicknesses.

[97] An improved arrangement of this fin 5 envisages that it is applied symmetrically, namely at an equal distance from the cloth surfaces.

[98] In order to provide a secure hold inside the mouth of the gripper of the mop base, said fin 5 is enlarged at the end 7.

[99] A saw tooth profile 8 of said end enlargement has the advantage of sliding easily inside the inclined profile of the mouth 13 of the mop base 14 gripper, and also has the advantage at its steep front 9 of being held better, above all in combination with a complementary profile of the gripper mouth 13 of the mop base 14.

- [100] A height of such a tooth, comparable to the thickness of the cloth 4, or such that the tip, opportunely rounded off, is directed upwards, facilitates the above-mentioned operation of overcoming the initial part of the mouth 13 of the gripper of the mop base 14.
- [101] An improved configuration of this end edge is obtained with a symmetrical double saw tooth profile 10, with an opportunely rounded end, attaining all the benefits of the saw tooth 8 for any side that is laying on the floor; therefore relieving the operator of having to verify the correct side before laying the cloth on the floor.
- [102] In order to ensure the precise installation of the cloth on the mop base, one or more recesses are provided along the edge that has the protrusion 12, or the fin 5, with respect to the free edge, where these recesses in cooperation with special locators 15 near the mouth 13 of the gripper of the mop base 14, making a centred attachment possible and at the correct depth of insertion into said mouth 13.
- [103] In fact, said recesses can have an inclined auto-centring inclination and their depth limits, by hitting against the above-mentioned locators 15, how far the edge with the protrusion 12 or the fin 5 inserts when engaged inside the mop base 14.
- [104] Depending on the extension of these recesses, the edge with the protrusion 12 or fin 5 can be configured as a single piece, but also divided into several distinct elements, without this invalidating the characteristics of a flat arrangement and with a continuous profile when laid on the floor.
- [105] Moreover, said teeth, and in particular the lateral shoulders 11 of these recesses, are very important in order to limit or impede the crosswise sliding of the cloth 4 with respect to the base 14.
- [106] In fact, said lateral shoulders 11 of these recesses are next to the side walls 16 of special locators 15 near the mouth 13 of the gripper, cooperating with them to prevent the above-mentioned crosswise movements.
- [107] It should be pointed out that the locators 15 on the mouth 13 of the mop base 14 that prevent the crosswise shifts of the cloth 4, can also be the same locators 15 that provide the correct centring of the cloth 4 and eventually limiting the depth of the edge with the protrusion 12 or fin 5 that has to enter the mouth 13 in order to guarantee the correct attachment of the saw tooth end edge 8 or double saw tooth 10 of the fin 5 with the complementary profile near the mouth 13 of the mop base 14.
- [108] Clearly, a profile of the cloth itself that would attain the same effects because of the same functions, should be included within the inventive context of this patent, especially when combined with treatment that stiffens this edge so that it can join to any enlargement or shaping, as described, in the part of the free edge, and especially if fitted with one or more recesses to join to the respective locators on the base for the pre-established purposes.

Claims

- [Claim 1] Cleaning cloth that can be joined to a mop base, including a coupling element (5, 12) solidly connected to said cloth (4), suitable for being attached solidly to a mop base (14), that protrudes along a lengthwise edge of said cloth (4), characterised by the fact that said coupling element (5, 12) has a greater thickness and/or rigidity compared to the material of which the cloth is made.
- [Claim 2] Cleaning cloth that can be joined to a mop base according to claim 1, characterised by the fact that said coupling element (12) protrudes in a direction that is perpendicular to the cleaning plane of the cloth (4) along a retaining lengthwise side, configured as an edge with a protrusion (12).
- [Claim 3] Cleaning cloth that can be attached to a mop base according to claim 1, characterised by the fact that said coupling element (5) protrudes in a direction that is coplanar to the cleaning plane of the cloth (4) along a lengthwise retaining side.
- [Claim 4] Cleaning cloth that can be joined to a mop base according to claim 3, characterised by the fact that said coupling element (5) is configured as a flat blade (5) solidly connected to the cloth (4) along the lengthwise retaining side.
- [Claim 5] Cleaning cloth that can be joined to a mop base according to the previous claim, characterised by that fact that said blade (5) has an enlargement (7, 8, 10) or increase of its end cross-section along its free edge, opposite to the one connected solidly to the cloth (4), with said enlargement (7, 8, 10) being capable of joining to the retaining gripper mouth (13) of a mop base (14).
- [Claim 6] Cleaning cloth that can be joined to a mop base according to the previous claim, characterised by that fact that said enlargement (7, 8, 10) has a sawtooth profile (8).
- [Claim 7] Cleaning cloth that can be attached to a mop base according to the previous claim, characterised by that fact that said sawtooth (8) has a tooth height (9) similar to the thickness of the cloth (8).
- [Claim 8] Cleaning cloth that can be joined to a mop base according to one or more of the previous claims, characterised by that fact that the surfaces of both sides of said cloth (4) can be used for cleaning.
- [Claim 9] Cleaning cloth that can be joined to a mop base according to the previous claim, characterised by that fact that both cleaning surfaces of

said cloth are made of a different material and finish in order to carry out a specific and different cleaning stage.

[Claim 10]

Cleaning cloth that can be joined to a mop base according to one or more of the previous claims 2 to 7, characterised by that fact that said edge that has a protrusion (12), or at least a protruding gripping and retaining blade (5) joined to the cloth (4), has a symmetrical enlargement (7, 8, 10) on the opposite free edge, taking on therefore a symmetrical configuration.

[Claim 11]

Cleaning cloth that can be joined to a mop base according to the previous claim, characterised by that fact that said edge with a protrusion (12) or blade (5) has a sawtooth configuration (8) towards each side, thereby configured as a double sawtooth (10), with a rounded end.

[Claim 12]

Cleaning cloth that can be joined to a mop base according to one or more of the previous claims 2 to 9, with said mop base (14) having a gripper mouth (13) suitable for joining to said cloth (4) and there being one or more locators (15) near the mouth (13), characterised by that fact that said edge with a protrusion (12) or said blade (5) has one or more recesses at said locators (15).

[Claim 13]

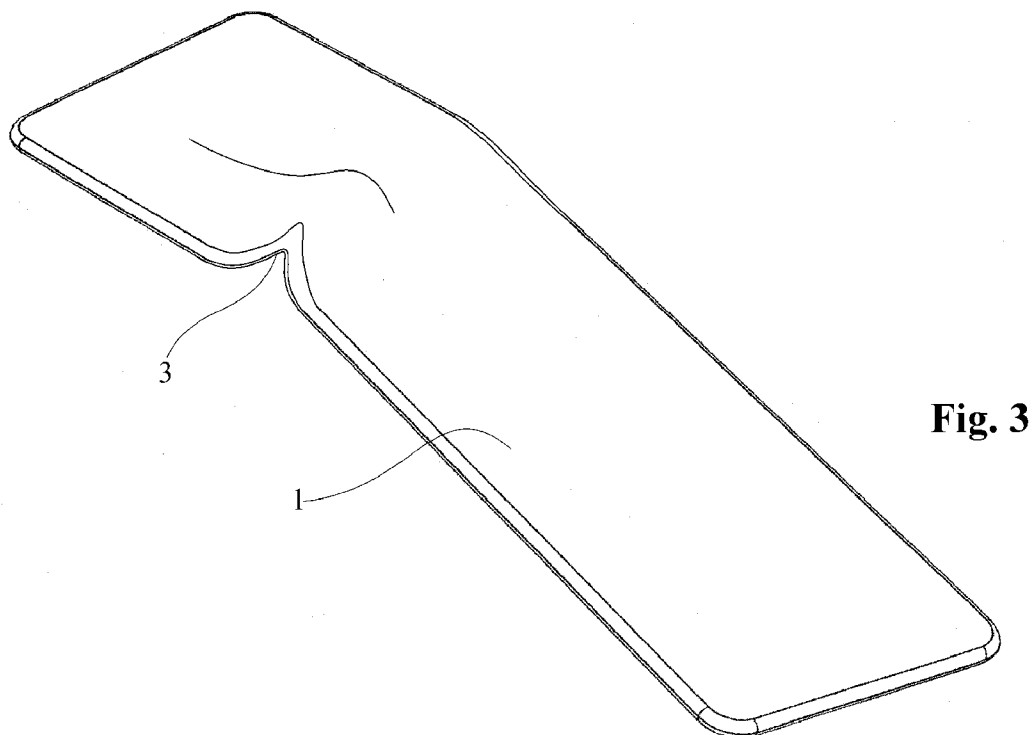
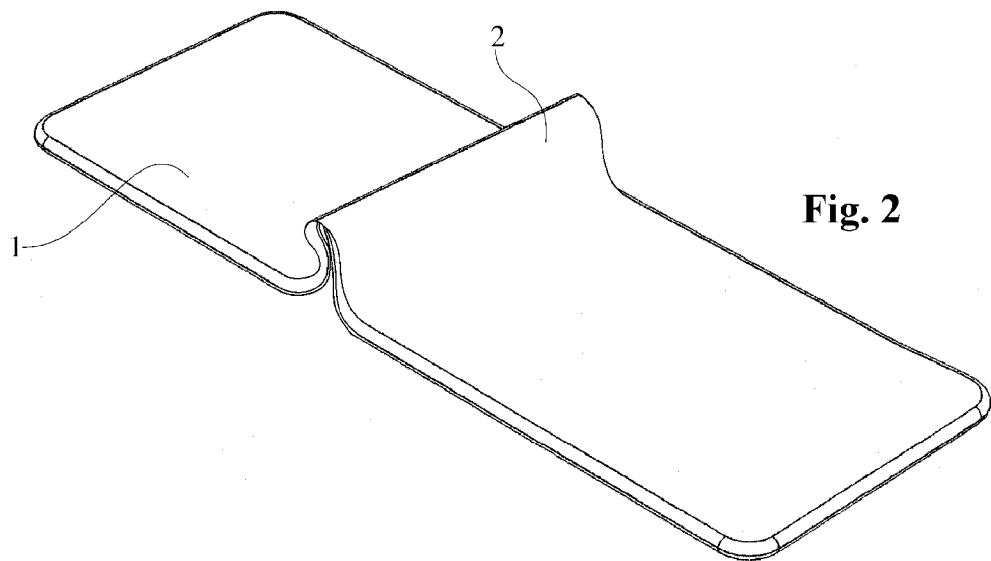
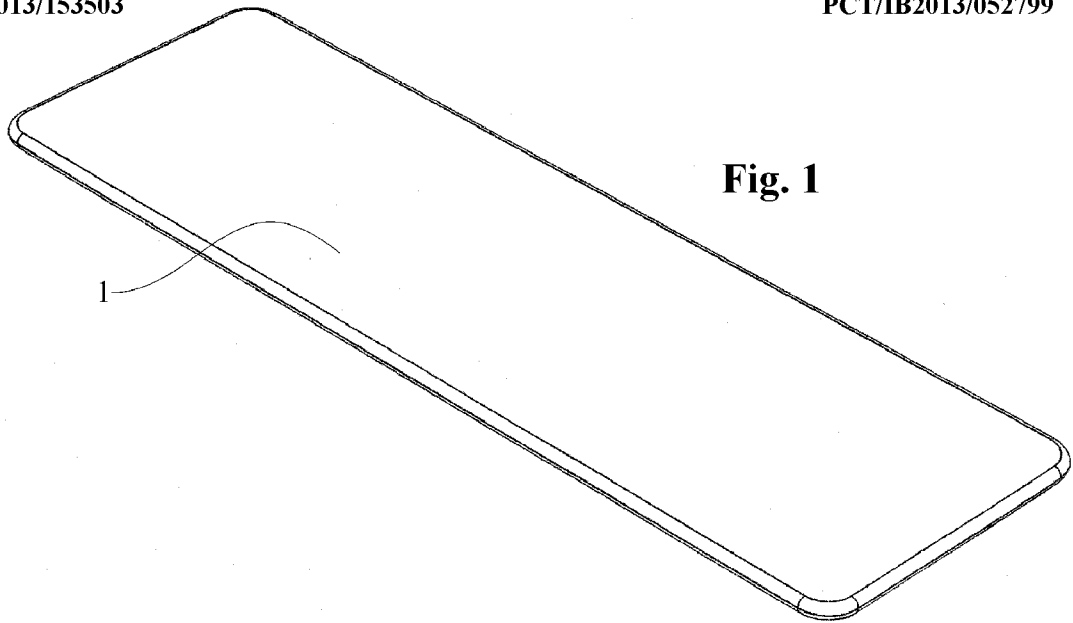
Cleaning cloth that can be joined to a mop base according to the previous claim, characterised by that fact that said recesses have lengthwise edges that together with the locators (15) near the gripper mouth (13) act as limit stops for the cloth (4) inside the gripper mouth on the mop base (14).

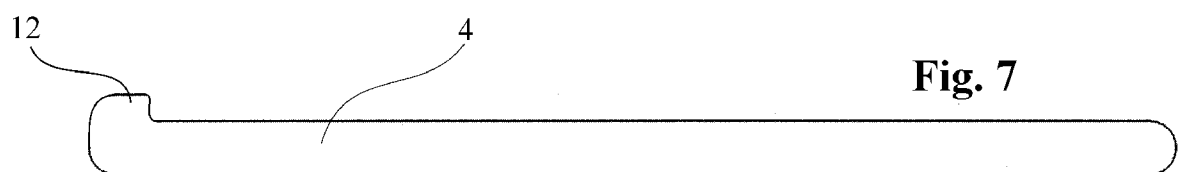
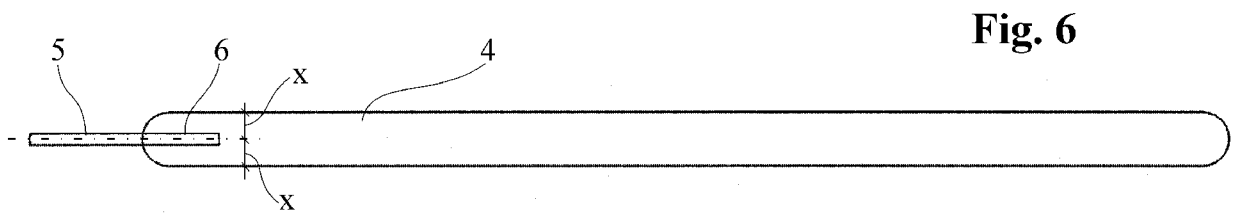
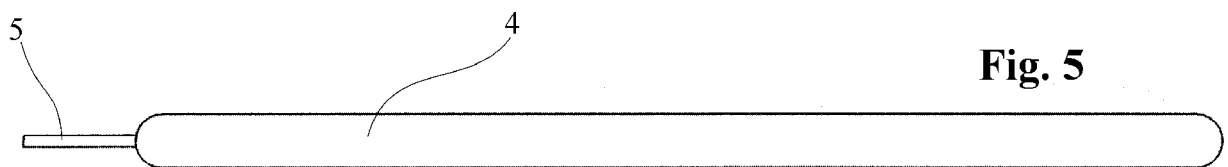
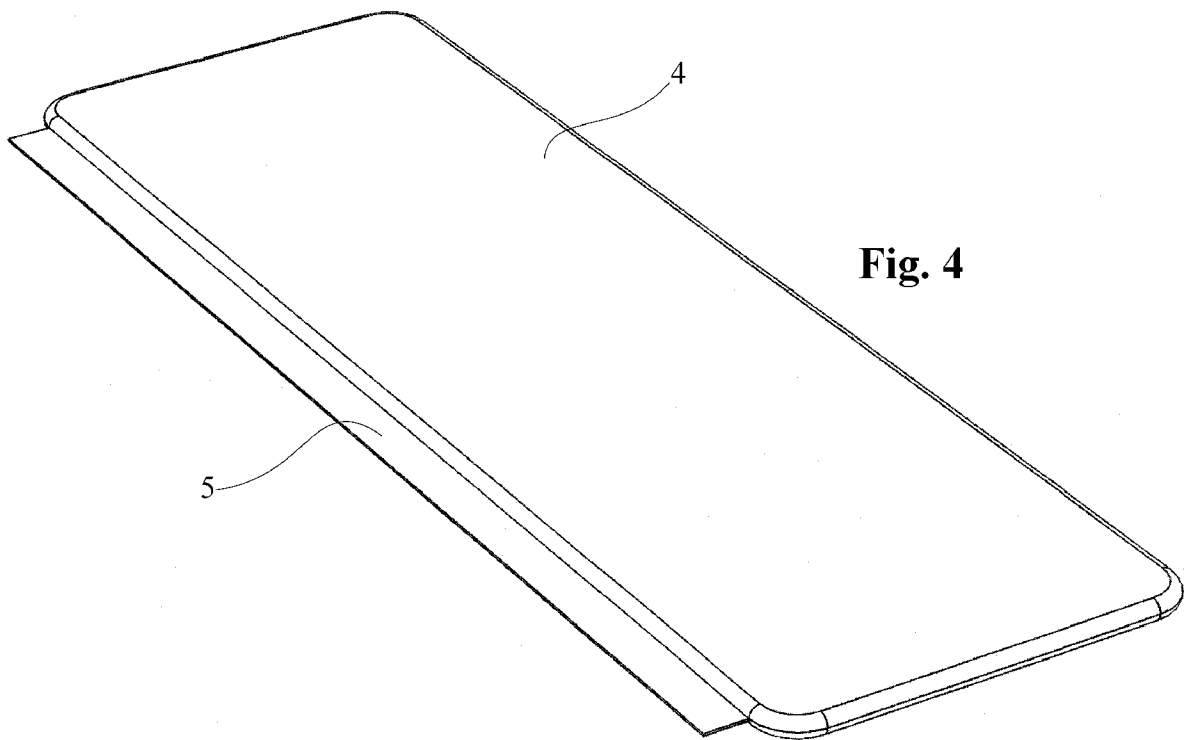
[Claim 14]

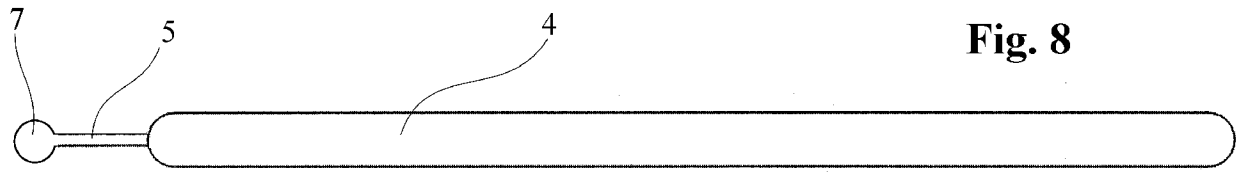
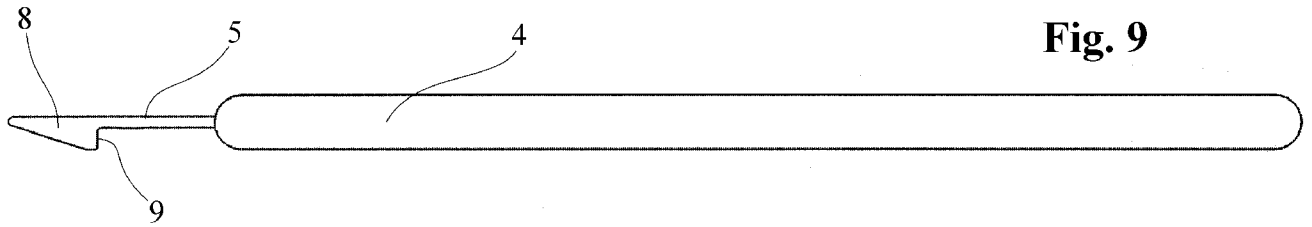
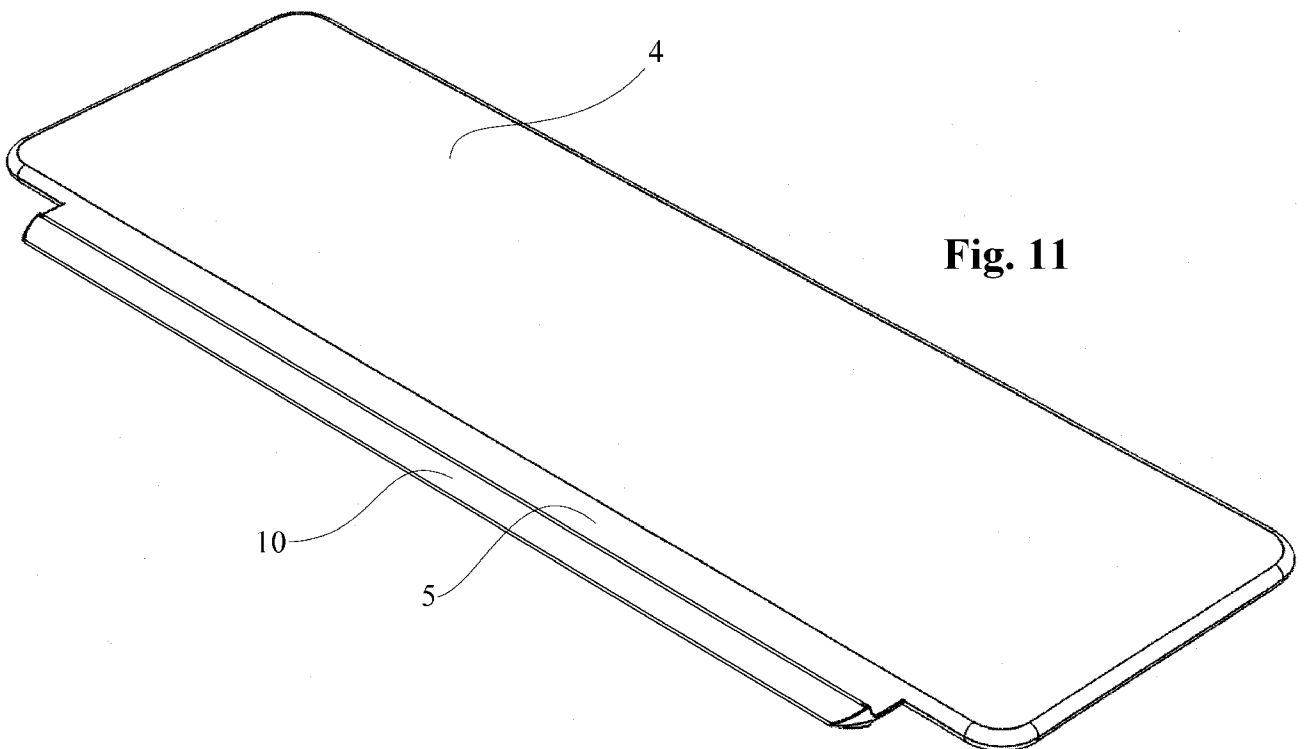
Cleaning cloth that can be joined to a mop base according to claim 12, characterised by that fact that said recesses have crosswise edges (11) that together with the side walls (16) of said locators (15) near the gripper mouth (13) act as crosswise limit stops for the cloth inside the gripper mouth on the mop base.

[Claim 15]

Cleaning cloth that can be joined to a mop base according to claim 12, characterised by that fact that said recesses continue along the entire dimension of said edge that has a protrusion (12) or blade (5), dividing said edge with a protrusion (12) or blade (5) into two or more separate parts with a space between.





**Fig. 8****Fig. 9****Fig. 10****Fig. 11**

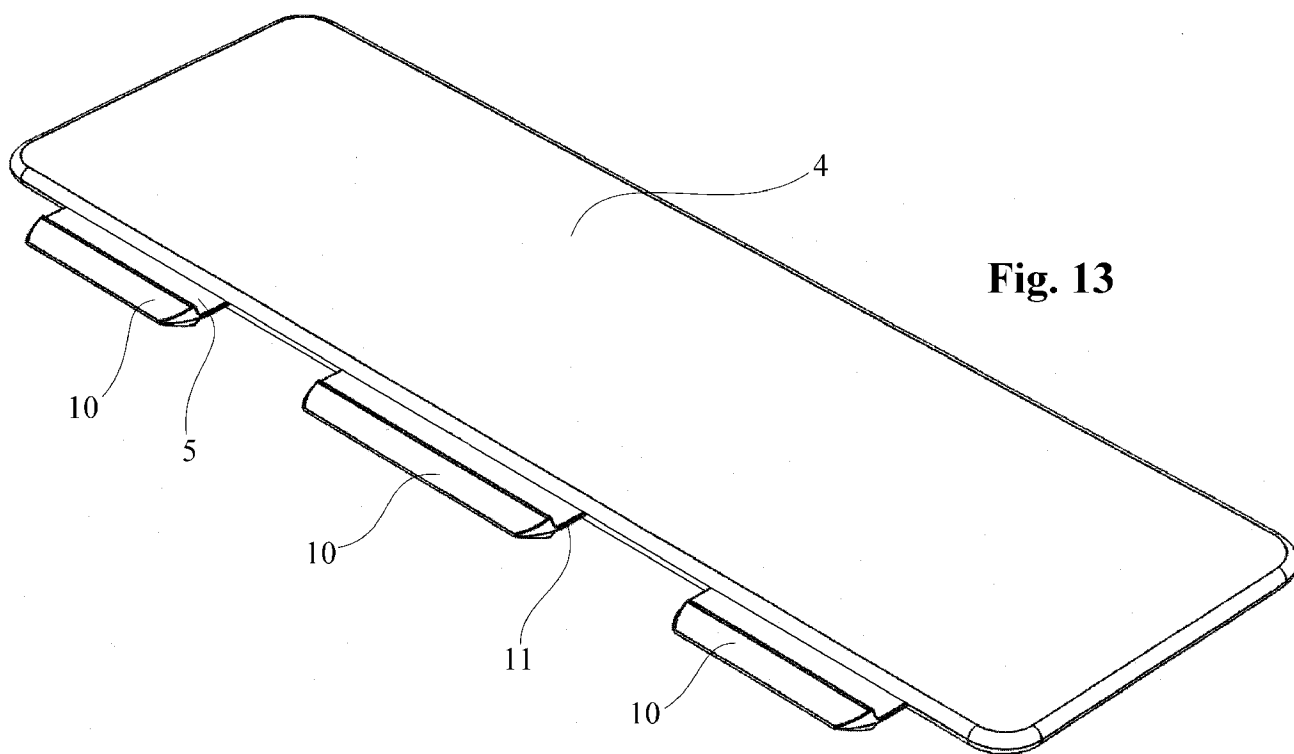
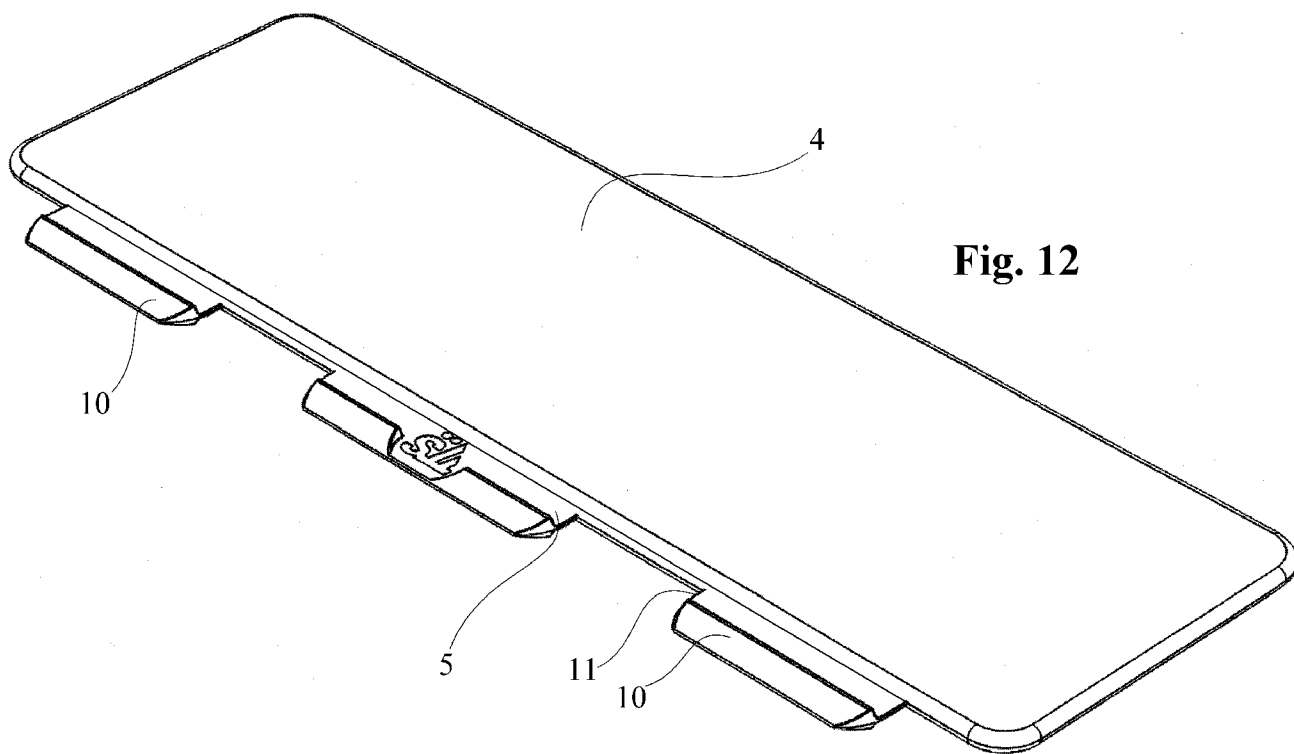


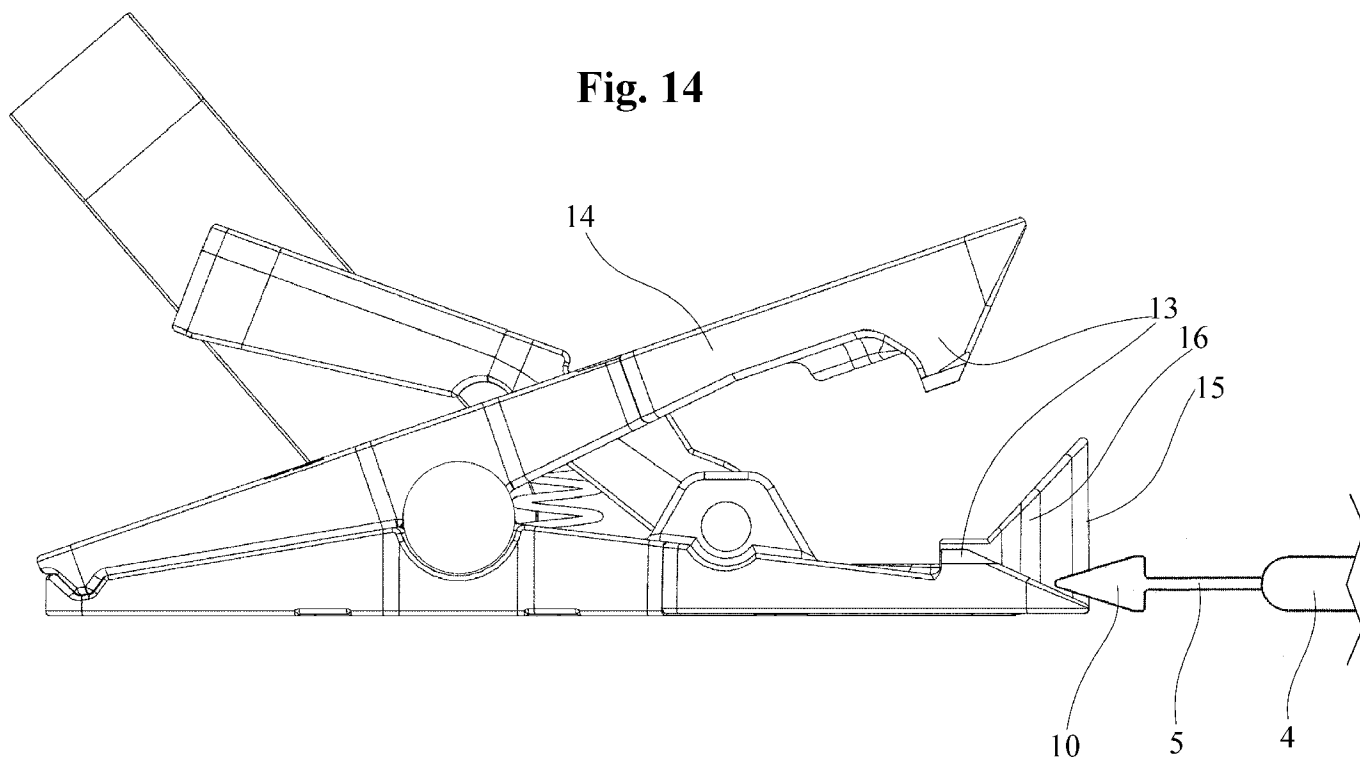
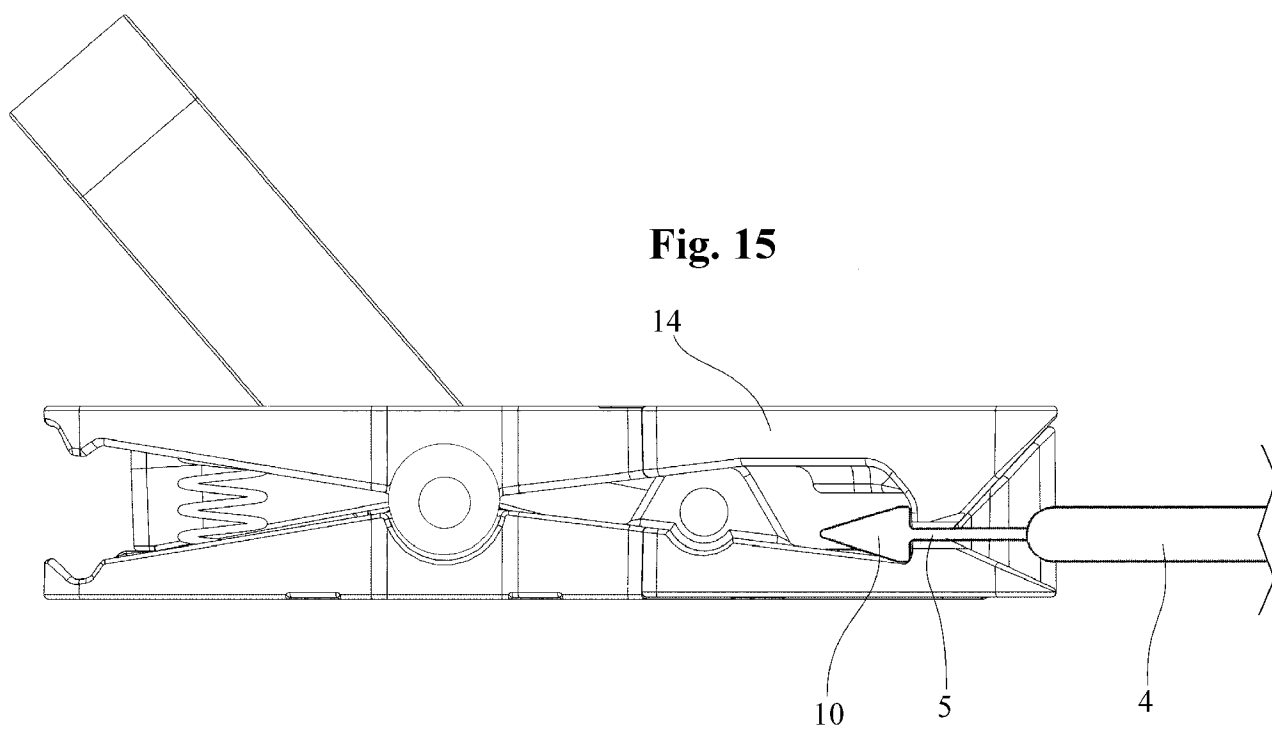
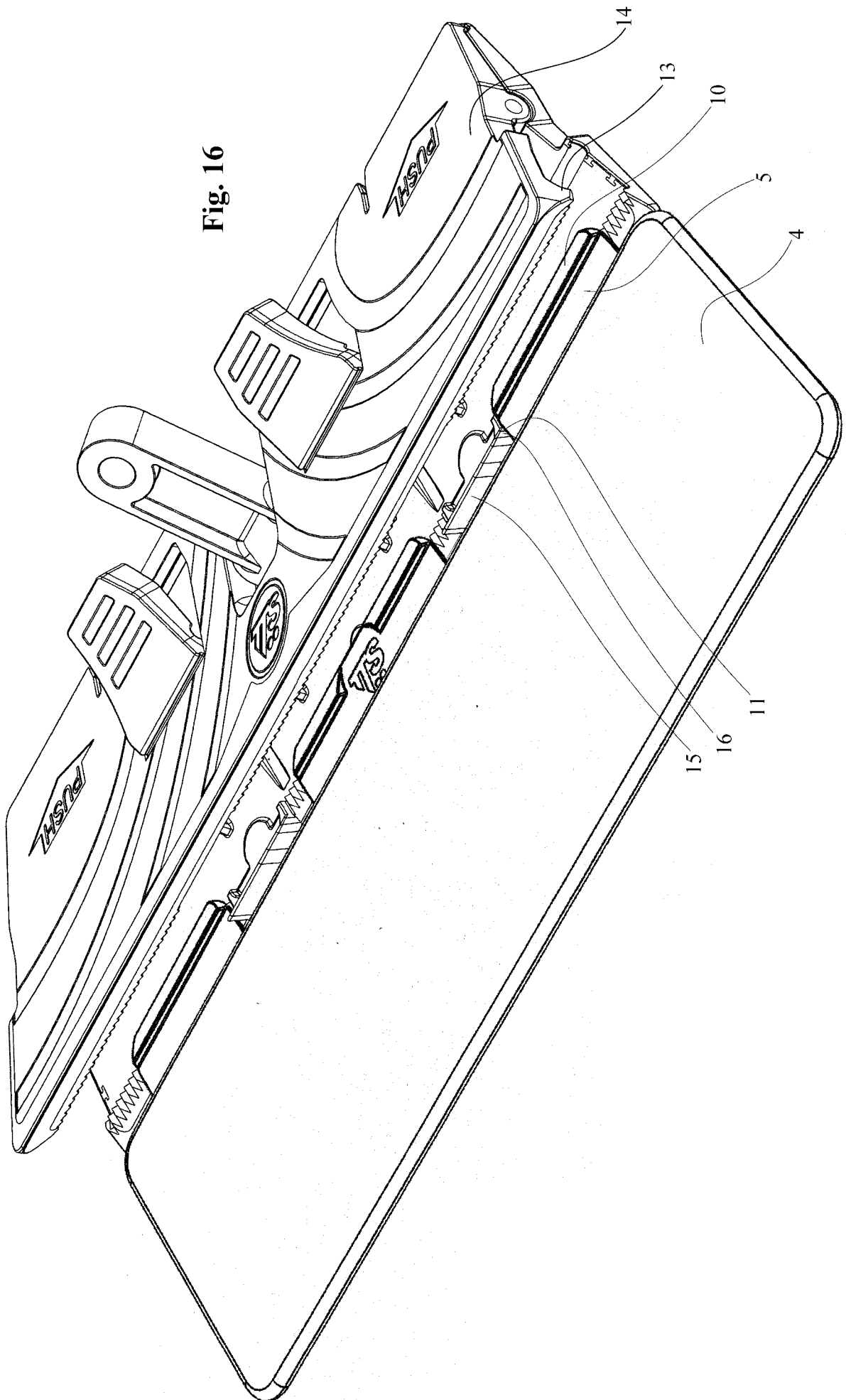
Fig. 14**Fig. 15**

Fig. 16



INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/052799

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47L13/256 A47L13/16
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009/139045 A1 (CANNON WILLIAM MICHAEL [US] ET AL) 4 June 2009 (2009-06-04) abstract; figures 1-8D -----	1-15
A	CN 201 701 170 U (JINGYU GAO) 12 January 2011 (2011-01-12) abstract; figures 1-3 -----	1-15
A	EP 1 897 480 A2 (FREUDENBERG CARL KG [DE]) 12 March 2008 (2008-03-12) abstract; figure 1 -----	1-15
A	DE 26 46 685 A1 (ICI LTD) 21 April 1977 (1977-04-21) abstract; figures 1-8 -----	1-15

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Further documents are listed in the continuation of Box C.

☒

See patent family annex.

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Date of the actual completion of the international search

26 June 2013

Date of mailing of the international search report

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Authorized officer

Hubrich, Klaus

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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