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(54) **MOP FRAME AND A MOP**

(57) The invention relates to a mop frame comprising a plate (11) forming the bottom frame part onto which bottom side the mop (30) is located for cleaning, in which mop frame at one end of the plate (11) of the mop frame (10) a top part (12) is pivotably attached by a pivot (16), to which top part (12) a handle arm is attached. The top part (12) is shorter than the plate (11), advantageously the length of the top part (12) is 55 - 75 % of the length of the plate (11). At the other end of the plate (12) a balancing element (20), preferably a protrusion (20), is located for balancing the mop frame (10).

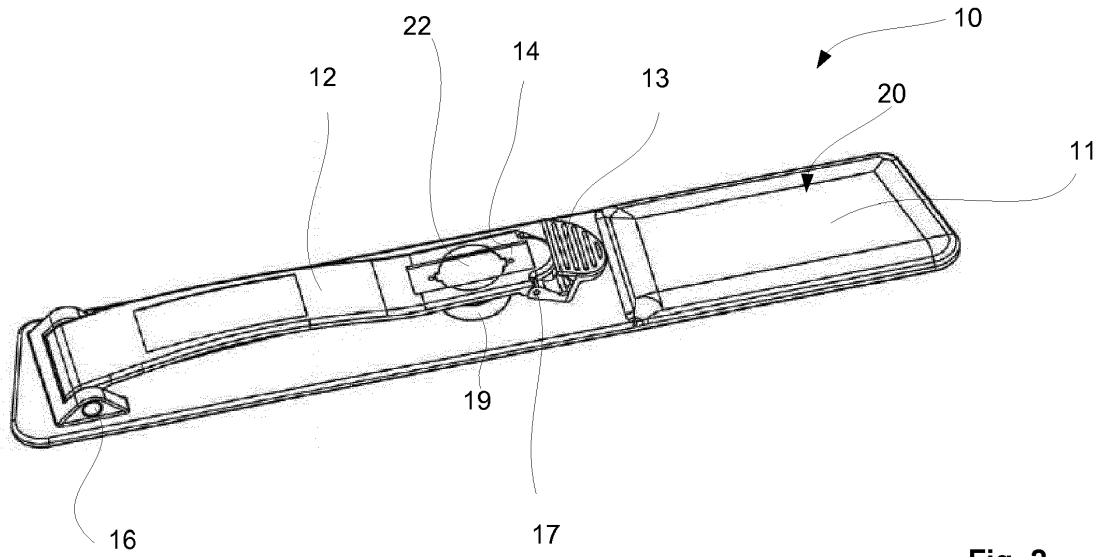

Fig. 2

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Description

[0001] The present invention relates to cleaning implements. Especially the invention relates to a mop frame and to a mop. In particular the invention relates to a mop frame according to the preamble of claim 1 and to a mop according to the preamble of claim 6.

[0002] From prior art various solutions to attach mops to mop frames are known. Of course, the basic intention is that the attachment be relatively firm and quick, and possible to carry out without touching by hand.

[0003] A common type of mop frame is such that the mop is attached on the bottom side i.e. in use towards the floor facing side of the planar plate by different types of fixing means such as loops, Velcro fastening means or pockets located at each end of the mop, into which pockets are then slid each end of the plate. A handle arm is typically fixed at the middle part of the plate of the mop frame on upper side of the plate. Typically the mop frame is provided with pivoting means in the middle of the plate and with means for pressing the longitudinal halves of the plate of the mop frame towards each other in order to remove and/ or place the mop onto the plate. One disadvantage with in these types of mop frames is that longitudinal distance changes and thus the attaching and removing of the mop without touching with hands is not possible. The attaching and removing the mop to and from the mop frame is also cumbersome and time consuming.

[0004] A solution known from prior art is type comprising a pocket or a loop at one end of the mop receiving one end of the plate of the mop frame, the plate being pushed into the pocket or through the loop by sliding it from the side, whereby the mop can be kept in place, for example, by pushing it against the floor by foot. In the known solutions, the other end of the mop is held, e.g., by means of a piece of Velcro, a flexible loop or a tongue provided with a press fastener. The Velcro fastening has the disadvantage that its holding power weakens depending on the times of use. In repeated use, the above-mentioned flexible loop or the tongue provided with a press fastener may be a more durable solution, but their weaknesses: slowness of setting the mop in place to some extent and also the fact that they are difficult to attach and remove without touching by hand.

[0005] Attachment solutions, which are based on a magnetizing force, are disclosed in publications US 4658461 and DE 19940436, for example. In said US publication, a magnetic rod is provided at the upper part of the mop frame, cooperating with a metal plate that constitutes the upper surface of the mop. In the DE publication, in turn, the upper surface of the mop is provided with a raster that is made of a mixture of metal powder attached to the surface of the mop by a suitable means, such as gluing or spraying.

[0006] In publication WO 2007/085686 is disclosed a mop frame comprising a handle, a plate connected to the handle and a mop detachably attached to the plate, at least one pair of holding members, consisting of a permanent magnet and a cooperating counterpart, being arranged for holding the mop onto the plate, whereby the magnet and the counterpart are essentially planar at the surfaces that come towards each other and they are attached to the plate and to the mop, respectively, so that they face each other in the operating position of the mop, in which the essentially flat magnet or counterpart on the mop is attached to the mop under a fabric that constitutes the upper surface of the mop.

[0007] In publication DE 102006027284 is disclosed a mop frame in which an example is described, which has a plate for attaching a cleaning cloth and to which plate a handle arm is attached in the middle part of a pivotably to one end of the plate attached top plate. In this example the top plate extends over the length of the plate.

[0008] One disadvantage of mop frames according to prior art is that the attaching and removing of the mop without touching with hands is not possible and thus the attaching and removing the mop to and from the mop frame is also cumbersome and time consuming. Another disadvantage of mop frames according to prior art is that when lifted in an open position the mop frame is unbalanced thus making handling of the mop frame cumbersome and also the attaching and removing the mop to and from the mop frame difficult.

[0009] An object of the present invention is to create a mop frame and a mop in which the problems and disadvantages of the devices known from the prior art are eliminated or at least minimized.

[0010] An object of the present invention is to create a mop frame and a mop, in which the disadvantages of solutions known from prior art relating to attaching and removing the mop to and from the mop frame are solved.

[0011] A particular object of the present invention is to create a mop frame and a mop, in which the mop can be attached and removed to and from the mop frame without touching by hand.

[0012] A particular object of the present invention is to provide a mop frame in which the difficulties caused by unbalanced mop frame, especially in the open position are solved.

[0013] In order to achieve the above objects and those which will come apparent later the mop frame is characterized by the features of claim 1. The mop in turn is characterized by the features of claim 6. Advantageous embodiments and features are disclosed in the dependent claims.

[0014] According to the invention the mop frame comprises a plate forming the bottom frame part onto which bottom side the mop is located for cleaning, in which mop frame at one end of the plate of the mop frame a top part is pivotably attached by a pivot, to which top part a handle arm is attached, and the top part is shorter than the plate, advantageously the length of the top part is 55 - 75 % of the length of the plate, and that at the other end of the plate a balancing element, advantageously a protrusion, is located for balancing the mop frame. The at the other

end of the plate attached balancing element can for example be an extra weight element, is located for balancing the mop frame. Thus by the invention a mop frame that is easy and handy in use is achieved and from which mop frame a mop can be removed without touching.

[0015] According to an advantageous feature at the bottom side of the top part a magnet is attached and a counterpart of the magnet is attached to the top side of the plate for closing the mop frame closing the magnet to its counterpart for attaching a mop thereto. This provides for easy and secure attachment of the mop to the mop frame by easy closing of the top part to the plate to close the mop frame.

[0016] According to an advantageous feature at the vicinity of the pivot between the top part and the plate a spring is located for assisting the closing and opening of the top part thus assisting opening and closing the mop frame for attaching and removing the mop to the mop frame and from the mop frame, by which even easier and handier use of the mop is achieved.

[0017] According to an advantageous feature at the open end of the top part a pedal is pivotably fastened by hinge for assisting the opening and closing of the mop frame. By this is achieved that the user needs less force for opening closing. According to an advantageous feature the mop frame is opened and closed by pulling and pushing, correspondingly, the top part of the mop frame by the handle arm, by this more simple construction is achieved.

[0018] According to the invention the mop of the mop frame, intended to be detachably attached, comprises one pocket at one end of the mop on the top side of the mop, into which pocket is to be placed open end of the corresponding mop frame. By this easy and handy use of the mop is achieved when attaching to the mop, as well as simple and easy to produce structure is achieved.

[0019] In the following the invention is described in more detail with reference to the accompanying drawing in which

Figure 1 discloses schematically as a cross section view one advantageous example of the mop frame according to the invention,

Figure 2 discloses schematically the advantageous example of figure 1 as a three dimensional view from above and

Figure 3 discloses schematically an advantageous example of the mop according to the invention.

[0020] In the following description and in the accompanying drawing by same reference signs similar or corresponding parts and part-components are denoted unless otherwise mentioned.

[0021] As shown in the example of figures 1-3 the mop frame 10 comprises a planar plate 11 that extends in longitudinal direction and has a rectangle type form. Onto the bottom side of the plate 11 a mop 20 is attached. The mop 30 has a pocket 31 at one end and the open end of the plate 11 of the mop frame 10 is slid into the pocket 31. At the opposite end in respect to the open end the top part 12 is hinged pivotably by pivot 16, advantageously a pivot shaft 16 that provides for the top frame 12 to move around the pivot shaft 16 upwards and downwards in respect the plate 11. The one open end and the other end to which the top part 12 is pivotably attached are located at the short sides of the rectangle form of the plate 11 of the mop frame 10. Between the top side of the plate 10 and the bottom side of the top part 12 at vicinity of the pivot 16 is located a spring 21 that assist in the closing movement of the top part 12. For the spring 21 advantageously a space is made by making recesses at the bottom side of the top part 12 and to the top side of the plate. The handle arm (not shown) will be attached to the arm opening 22 and fastened to the top part by fastener 14. For attaching the mop 30 into its place the top plate is provided with a magnet 18 and its counterpart 19. Advantageously for the magnet 18 a recess is mad to the top part 12. Advantageously at the open end of the top plate 12 a pedal 13 is pivotably fastened by hinge 17. By pressing the pedal 13 by foot the user can open and close the top part 12 in respect of the plate 11 for removing and attaching the mop 30 from and to the mop frame 10 without touching the mop 30. The opening and closing of the top part 12 can also be provided by pulling and pushing the top part 12 by the handle arm. The counterpart 19 of the magnet 18 is attached to the plate by fixing plate 15. At the open end of the plate 10 a balancing element 20, which in this example is a protrusion 20, is located. The protrusion 20 provides for the balance of the mop frame 10 when the top plate is open and thus typically the mop frame 10 lifted from the floor for attaching or removing the mop 30 thus making the use of the mop 30 and the mop frame 10 easy and handy.

[0022] The top part 12 is shorter than the plate 11, advantageously the length of the top part 12 is 55 - 75 % of the length of the plate 11.

[0023] The height of the cross section of the plate 11 at the area of the protrusion 20 is at least twice the height of the cross section of the plate at the areas where the protrusion 20 does not extend.

[0024] The gap between the plate 11 and the top part 12 opens 10 - 15 degrees.

[0025] Thus the mop frame comprises a plate 11 forming the bottom frame part onto which bottom side the mop 30 is located for cleaning and at one end of the plate 11 of the mop frame 10 the top part 12 is pivotably attached by the pivot 16 to which top part 12 the handle arm is attached, and at the other end of the plate 12 the balancing element 20, for example the protrusion 20 or an extra weight element, is located for balancing the mop frame 10. Advantageously at the bottom side of the top part 12 the magnet 18 is attached and the counterpart 19 of the magnet 18 is attached to the top side of the plate 10 for closing the mop frame 10 closing the magnet

18 to its counterpart 19 for attaching the mop 30 thereto. Advantageously at the vicinity of the pivot 16 between the top part 12 and the plate 11 the spring 21 is located for assisting the closing and opening of the top part 12 thus assisting opening and closing the mop frame 10 for attaching and removing the mop 30 to the mop frame 10 and from the mop frame 10. Advantageously at the open end of the top part 12 a pedal 13 is pivotably fastened by hinge 17 for assisting the opening and closing of the mop frame 10 or the mop frame 10 is opened and closed by pulling and pushing, correspondingly, the top part 12 of the mop frame by the handle arm. Thus the mop comprises one pocket 31 at one end of the mop 30 on the top side of the mop 30, into which pocket 31 is to be placed open end of the corresponding mop frame 10.

[0026] In this description the terms "bottom", "top" are used in view of the position in normal working position of the mop and the mop frame.

[0027] The invention has above described referring to one advantageous example alterations and modifications are possible within the scope defined by the following claims.

Claims

1. A mop frame comprising a plate (11) forming the bottom frame part onto which bottom side the mop (30) is located for cleaning, in which mop frame at one end of the plate (11) of the mop frame (10) a top part (12) is pivotably attached by a pivot (16), to which top part (12) a handle arm is attached, **characterized in that** the top part (12) is shorter than the plate (11), advantageously the length of the top part (12) is 55 - 75 % of the length of the plate (11), and that at the other end of the plate (12) a balancing element (20), advantageously a protrusion (20), is located for balancing the mop frame (10).

2. A mop frame according to claim 1, **characterized in that** at the bottom side of the top part (12) a magnet (18) is attached and a counterpart (19) of the magnet (18) is attached to the top side of the plate (10) for closing the mop frame (10) closing the magnet (18) to its counterpart (19) for attaching a mop (30) thereto.

3. A mop frame according to claim 1 or 2, **characterized in that** at the vicinity of the pivot (16) between the top part (12) and the plate (11) a spring (21) is located for assisting the closing and opening of the top part (12) thus assisting opening and closing the mop frame (10) for attaching and removing the mop (30) to the mop frame (10) and from the mop frame (10).

4. A mop frame according to any of claims 1 to 3, **characterized in that** at the open end of the top part (12) a pedal (13) is pivotably fastened by hinge (17) for assisting the opening and closing of the mop frame (10).

5. A mop frame according to any of claims 1 to 3, **characterized in that** the mop frame (10) is opened and closed by pulling and pushing, correspondingly, the top part (12) of the mop frame by the handle arm.

6. A mop of a mop frame, intended to be detachably attached to a mop frame according to any of claims 1-5, **characterized in that** the mop comprises one pocket (31) at one end of the mop (30) on the top side of the mop (30), into which pocket (31) is to be placed the open end of the corresponding mop frame (10).

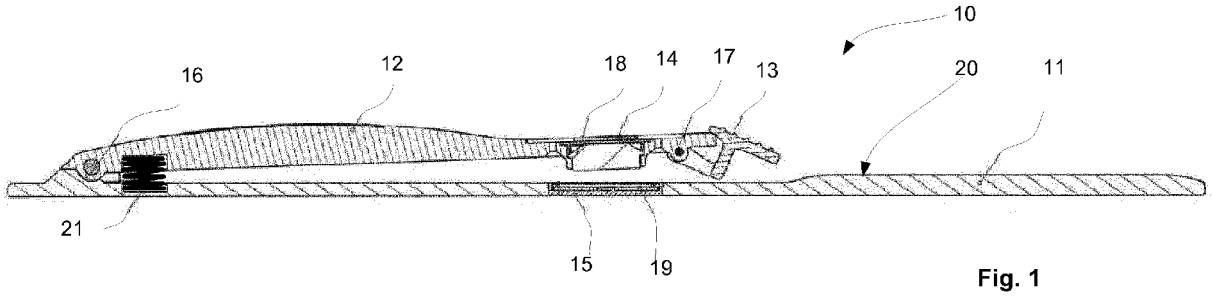

Fig. 1

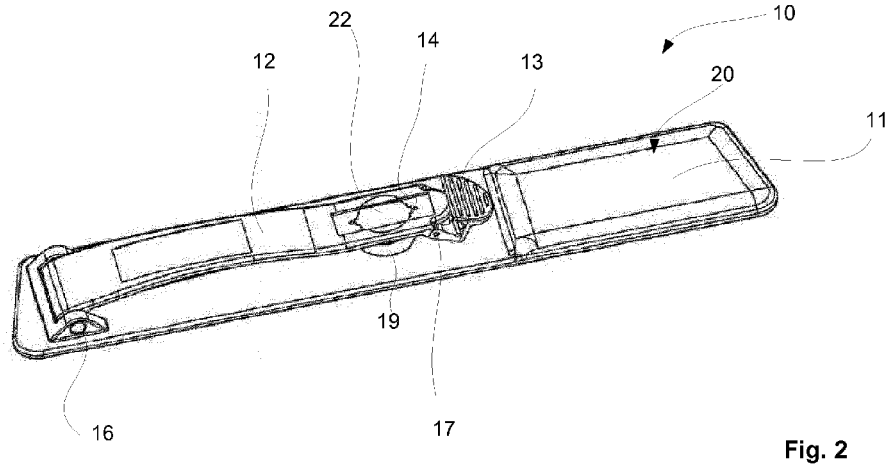

Fig. 2

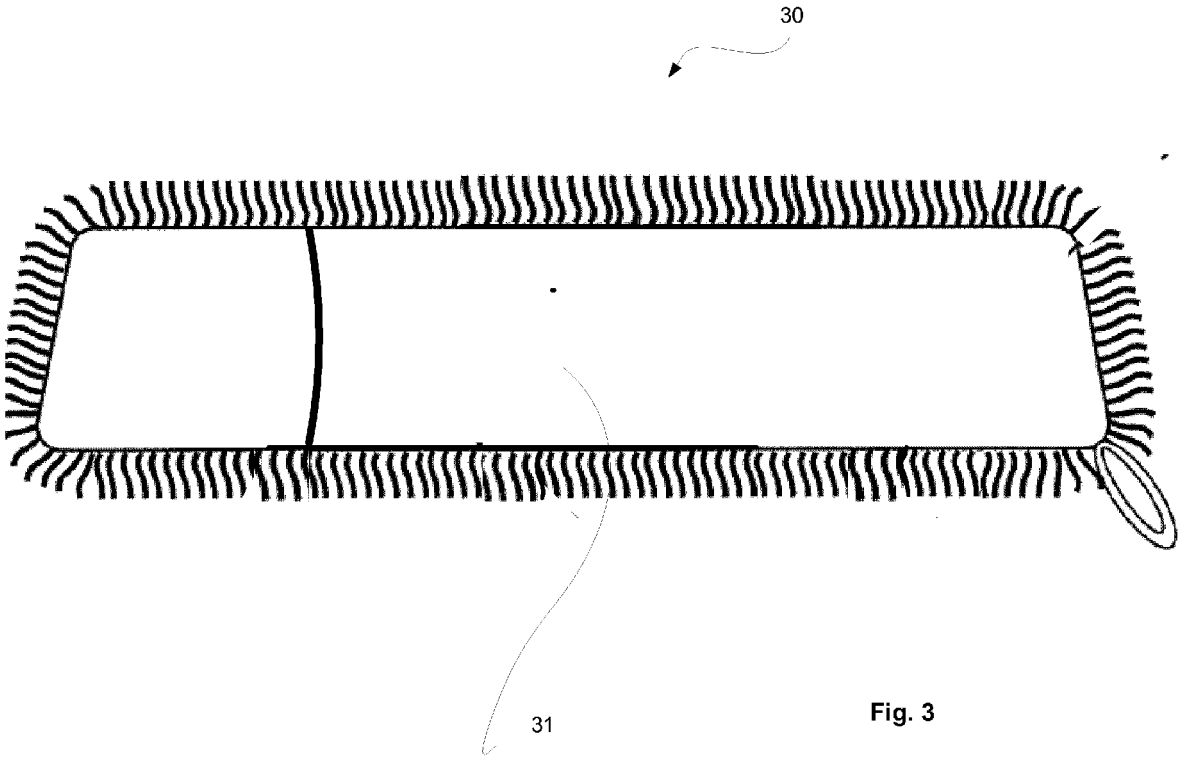

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 15 18 7244

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TECHNICAL FIELDS SEARCHED (IPC)

A47L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	2 March 2016	Eckenschwiller, A

CATEGORY OF CITED DOCUMENTS

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