The invention is a support or plate (1) for brooms, brushes, scrubbing brushes or tools in general for cleaning floors and surfaces, comprising a body (2) to which it is possible to constrain bristles (6) of brooms or brushes and/or one or more cloths, and a sleeve or tube (4) joined to said body (2) and provided with engagement means (48) for coupling a stick (M) thereto. The inside (44) of said tube (4) is divided into a first engagement portion (46), in which there are said engagement means (48) for connecting the stick (M), and a second portion (47), or extension, near the open end (42) of the tube (4) and without said engagement means (48).
The present invention concerns house cleaning tools and in particular it concerns a new improved type of support or plate for brooms, brushes, scrubbing brushes, and tools in general for cleaning floors and surfaces.

Tools for cleaning floors are known, meaning brooms, brushes, scrubbing brushes, cloth sweepers, etc. These tools are generally provided with a stick that is suited to be held by the user, to one end of which a support or plate is removably or permanently constrained, the bristles of the broom or brush or a cleaning cloth or dust cloth being directly or indirectly constrained to said support or plate.

The upper surface of the support or plate is usually provided with at least one coupling means for said end of the stick.

Said support or plate may also comprise coupling means for a cleaning cloth or a dust cloth.

Supports or plates are known in which the stick coupling means comprises a seat created in the upper part of the support, the inside of said seat being threaded or provided with projections or recesses suitable for the engagement of the stick end.

The supports provided with an internally threaded seat are suited to be coupled with a stick having a correspondingly threaded end which can be screwed into the seat so as to obtain a rigid connection between the stick and the support.

The supports provided with a seat with coupling elements, instead, are suited to be coupled with a stick whose lower end is provided with corresponding elements capable of removably fitting in said seat.

Said seat, the inside of which can be threaded or provided with coupling means, can be obtained within the thickness of the support, thus being recessed, or can be obtained in a sleeve that projects from the support.

Said sleeve is 2-3 cm long, so that the stick is inserted therein and screwed over a corresponding length of 2-3 cm.

Especially in the case of internally threaded sleeves, it often happens that the sleeve on which the stick rests tends to widen due to the prolonged use, thus loosening the connection between the stick and the support.

Consequently, during use the stick gradually unscrews until it comes off.

At this point the user needs to repeatedly screw the stick or to buy a new support.

Another drawback posed by the known supports lies in that the sleeve breaks frequently due to the prolonged use, as a consequence of the force applied to the sleeve itself by the stick, thus making it more difficult to properly constrain the stick.

In order to overcome the drawbacks mentioned above, a new improved support has been designed and constructed, which is suited to be used with brooms, brushes, scrubbing brushes or tools in general for cleaning floors and surfaces.

The main object of the present invention is to guarantee a more stable connection between the stick and the support.

It is another object of the present invention to provide a support with extended duration.

It is a further object of the present invention to provide a support that can be used also in case of partial breakage of the sleeve.

These and other direct and complementary objects are achieved by the new improved support for brooms, brushes, scrubbing brushes or tools in general for cleaning floors and surfaces.

The invention is a new support or plate for brooms, brushes, scrubbing brushes or tools in general for cleaning floors and surfaces, comprising a body to which it is possible to directly or indirectly constrain the bristles of a broom or brush, and/or cloths for cleaning floors, as well as a sleeve or tube joined to said body and provided with engagement means for the connection of a stick, and wherein the inside of said tube is generically subdivided into at least one first portion, or engagement portion, in which said engagement means for connecting the stick are provided, and at least one second portion, or extension, near the open end of the tube and without said engagement means.

More specifically, the new support or plate comprises a body whose underside is suited to be directed towards the surface to be cleaned, wherein said underside can be provided with broom or brush bristles or cloths in general for cleaning floors. Said support or plate comprises at least one sleeve or tube for the connection of the stick, substantially positioned on its upper or side portion.

Said tube in turn comprises a cylindrical surface joined at one end to the body of said plate, while the opposite end is open so as to allow the insertion of the connection end of the stick.

Said tube is constrained to said body of the plate in such a way as to be substantially vertical or inclined, with its open end substantially facing upwards. Said tube is internally provided with preferably removable engagement means suited to become engaged with said end of the stick.

Said engagement means comprise, for example, a thread suited to receive the correspondingly threaded end of the stick that is screwed therein.

As an alternative to said thread, the inside of the tube may be provided with recesses or projections or other means for coupling the correspondingly shaped end of the stick.

In the preferred solution, said thread and/or said engagement means for the connection of the end of the stick are positioned inside the tube in just one portion of the tube, or engagement portion, near the end fixed to the body of the support or plate, while the remaining portion, or extension, is not provided with said engagement elements.
Said extension, which is preferably 2-10 cm long, has the function to increase the resistance of the tube and the manoeuvrability of the cleaning tool.

In particular, the stick, once introduced in the tube and constrained therein, during use rests on the edge of the open end of the tube, said edge being spaced from the point where the stick is connected to the tube.

In this way the stick connection area is preserved, guaranteeing also a more stable connection between the tube and the stick.

According to the invention, at the level of or in proximity to said upper end of the tube one or more gaskets or reinforcing elements can be provided, for example annular in shape and suited to be interposed between the cylindrical wall of the tube and the stick.

Said gaskets or reinforcing elements furthermore have the function to prevent dirt from penetrating in the tube. In addition to the above, said gaskets or reinforcing elements also have the function to prevent the stick from coming off.

According to the invention, at the level of or in proximity to the open end of the tube, the cylindrical wall of the tube may comprise at least one reinforcing thicker portion or rib, preferably annular in shape and facing towards the outside. According to the invention, the new support may also comprise at least one substantially annular gasket with a substantially cylindrical inner wall and an outer wall at least partially in the shape of a truncated cone, said annular gasket being suited to be fitted on the stick to be inserted in the tube, and wherein the insertion and screwing of the stick causes the gasket to be inserted, which ensures a tight connection between stick and tube.

The characteristics of the new support or plate are highlighted in the following description, making reference to the attached drawings that are enclosed hereto by way of non-limiting example.

Figure 1 shows a three-dimensional schematic view of the new support or plate (1) for brooms, brushes or tools in general for cleaning floors.

Figure 2 shows a side view of the new support or plate (1) provided with bristles (S) according to a possible solution, illustrating the configuration of the plate (1) in such a way as to be substantially vertical or inclined, with said open end (42) substantially facing upwards when said plate (1) is positioned with said underside (21) of the body (2) facing downwards.

Said gasket (5) preferably has a substantially annular inner wall (52) and its outer wall (53) is at least 10 cm long.

Said support or plate (1) comprises also at least one sleeve or tube (4) to which the stick (M), indicated by a broken line in Figure 2, can be connected.

Said sleeve or tube (4) is integral with said body (2), as it is joined in a preferably rigid manner to the upper portion (22) of said body (2) and/or to a side portion (23). Said tube (4) in turn comprises a cylindrical wall (43) defining an axial hole (44) for the insertion of part (M1) of said stick (M).

Said tube (4) is joined at one end (41) to said body (2) of said plate (1), while its opposite end (42) is open for the insertion of the connection end (M1) of the stick (M) in said axial hole (44).

Said axial hole (44) is preferably a blind hole, meaning that it has a preferably closed bottom (45).

Said tube (4) is constrained to said body (2) of the plate (1) in such a way as to be substantially vertical or inclined, with said open end (42) substantially facing upwards when said plate (1) is positioned with said underside (21) of the body (2) facing downwards.

The inside of said axial hole (44) provided in said tube is generically subdivided into at least one first portion (46), or engagement portion, close to said bottom (45) of the hole (4) and provided with engagement means (48) suited to become engaged with said stick (M) of the stick (M), and at least one second portion (47), or extension, near said open end (42) of the tube (4) and without said engagement means.

Said engagement means (48) comprise, for example, a thread into which the correspondingly threaded end (M1) of said stick (M) can be screwed.

As an alternative to said thread, in said engagement portion (46) inside the tube (4) there may be recesses or projections or other means for connecting said end (M1) of the stick (M).

Said extension (47) of the tube (4) is preferably 1-10 cm long.

According to the invention, at the level of or in proximity to said open end (42) of the tube (4) or more gaskets or reinforcement elements can be mounted, for example annular in shape and suited to be interposed between the cylindrical wall (43) of the tube (4) and the stick (M).

According to the invention, at the level of or in proximity to said open end (42) of the tube (4), said cylindrical wall (43) may comprise at least one reinforcing thicker portion or rib (49), preferably annular in shape and facing towards the outside. According to the invention, the new support (1) may also comprise at least one substantially annular gasket (5) suited to be fitted on the stick (M) to be inserted in said tube (4), at a given distance from its connection end (M1).

Said gasket (5) is preferably elastic so that it can be fitted on any type of stick (M), being provided, for example, with a slit (51).

Said gasket (5) preferably has a substantially cylindrical inner wall (52) and its outer wall (53) is at least partially in the shape of a truncated cone (54), with de-
creasing diameter in the direction of insertion (X) in the tube (4).

In this way, the insertion and screwing of the stick (M) inside the tube (4) causes the insertion of said truncated cone-shaped portion (54) of the gasket (5), which ensures a tight connection between stick (M) and tube (4).

Therefore, with reference to the above description and the attached drawings, the following claims are expressed.

Claims

1. Support or plate (1) for brooms, brushes, scrubbing brushes or tools in general for cleaning floors and surfaces, comprising a body (2) to which it is possible to directly or indirectly constrain bristles (6) of brooms or brushes and/or one or more cloths, and a sleeve or tube (4) joined to said body (2) and provided with engagement means (48) suited to allow a stick (M) to be attached thereto, characterized in that the inside (44) of said tube (4) is generically divided into at least one first portion (46), or engagement portion, in which there are said engagement means (48) of the stick (M), and at least one second portion (47), or extension, near the open end (42) of the tube (4) and without said engagement means (48).

2. Support or plate (1) according to claim 1, characterized in that said tube (4) in turn comprises a cylindrical wall (43) defining an axial hole (44) and is joined to said body (2) of said plate (1) with one end (41), while the opposite end (42) is open so as to allow the introduction of the coupling end (M1) of the stick (M) in said axial hole (44), and wherein said at least one engagement portion (46) is positioned inside said tube (4) in proximity to the bottom (45) of said axial hole (44).

3. Support or plate (1) according to claims 1, 2, characterized in that said engagement means (48) comprise at least one thread (48) obtained inside said cylindrical wall (43), at the level of said engagement portion (46), and suited to allow the correspondingly threaded end (M1) of said stick (M) to be screwed therein.

4. Support or plate (1) according to claims 1, 2, characterized in that said engagement means (48) comprise seats or projections or other means for coupling said end (M1) of the stick (M).

5. Support or plate (1) according to the preceding claims, characterized in that said extension (47) of the tube (4) is 2-10 cm long.

6. Support or plate (1) according to the preceding claims, characterized in that one or more gaskets or reinforcement elements suited to be interposed between the cylindrical wall (43) of the tube (4) and the stick (M) are mounted at the level of or in proximity to said open end (42) of the tube (4).

7. Support or plate (1) according to the preceding claims, characterized in that it comprises at least one reinforcing thicker portion or rib (49) on the outside of said cylindrical wall (43) of said tube (4), at the level of or in proximity to said open end (42) of the tube (4).

8. Support or plate (1) according to claims 6, 7, characterized in that said gaskets or reinforcement elements are annular.

9. Support or plate (1) according to the preceding claims, characterized in that it comprises at least one substantially annular gasket (5) suited to be fitted on the stick (M) to be inserted in said tube (4), said gasket (5) being preferably elastic and having a substantially cylindrical inner wall (52) and an at least partially truncated cone-shaped (54) outer wall (53), with decreasing diameter in the direction (X) of insertion into the tube (4), so that the insertion and screwing of the stick (M) in the tube (4) causes the insertion of said truncated cone-shaped portion (54) of the gasket (5) that allows a tight connection between the stick (M) and the tube (4) to be achieved.
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The present search report has been drawn up for all claims

Place of search: Munich  
Date of completion of the search: 23 February 2016  
Examiner: Masset, Markus

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- **T**: theory or principle underlying the invention  
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