

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 888 734 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.01.1999 Bulletin 1999/01

(51) Int. Cl.⁶: **A46B 7/04**

(21) Application number: **97500221.3**

(22) Date of filing: **19.12.1997**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor:
**Llorente Hompanera, José Ma
08391 Tiana (Barcelona) (ES)**

(74) Representative:
**Ponti Sales, Adelaida
Consell de Cent 322
08007 Barcelona (ES)**

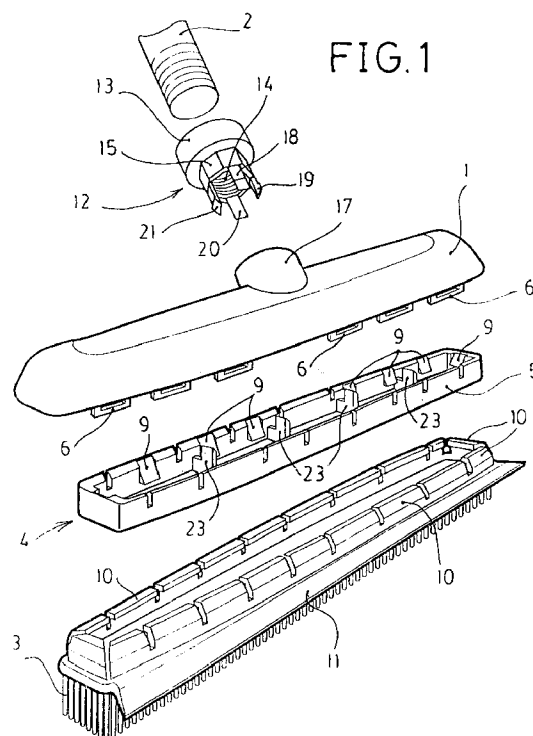
(30) Priority: **30.05.1997 ES 9701500 U**

(71) Applicant: **Lekue, S. L.
08120 La Llagosta (Barcelona) (ES)**

(54) Cleaning device

(57) It comprises a base (1) of rigid material which can be coupled to a handle (2) and which incorporates a brush (3) or similar cleaning element of flexible material which is independent of the base and which includes coupling means (4) between the base and the brush, and is characterized in that the coupling means are constituted by a coupling element (5) which is independent of the base (1) and of the brush (3) respectively.

The assembly and cleaning of the device are simple, and its manufacturing cost is low.



EP 0 888 734 A2

Description

The present invention relates to a cleaning device, such as a broom or the like.

BACKGROUND OF THE INVENTION

Known in the field of cleaning are brushes and the like of the type which include a handle which can be attached under pressure or with a screw-thread to a rubber base provided with the corresponding brush, which in turn is attached to said base by means of any mechanical fixing system.

Conventionally, the most common problem with this type of utensils is detachment of the handle from the base. Normally, moreover, the manufacturing of said cleaning utensils is costly due to the large quantity of materials required for the construction of the base.

Detachment of the handle occurs due to the deformation undergone by the neck of the base, this deformation arising as a consequence of the stresses transmitted by the handle to said neck during utilization of the broom.

The applicant has provided solutions to these problems; specifically in utility model numbers 9700113 and 9700112.

The first model relates to a cleaning utensil which comprises a base which can be coupled to a handle and is provided with a brush or the like of flexible material which is independent of said base. Furthermore, coupling means linked to the brush are provided for attaching the latter to the base.

The second utility model describes a securing device applicable to cleaning utensils, in particular for brushes and the like. The securing device in question has a neck which receives the handle and a base of flexible material which is fixed to the cleaning utensil.

DESCRIPTION OF THE INVENTION

The cleaning device object of the invention has been developed in order to provide additional advantages with respect to the solutions described.

The cleaning device of the invention comprises a base of rigid material which can be attached to a handle and which incorporates a brush or similar cleaning element, made of flexible material and independent of the base, which includes coupling means between the base and the brush. Said device is characterized in that the coupling means are constituted by an element which is independent of the base and of the brush.

This important characteristic allows fast and easy assembly of the cleaning utensil, while at the same time allowing a reduction of the manufacturing costs, since manufacturing of the brush is simplified because it is independent of the means for coupling it to the base.

Said coupling element is made of rigid material, and can be coupled to the base and to the brush

respectively.

Advantageously, said base is provided with a plurality of grooved projections distributed inside it which define, with the exterior outline of the base, an interior perimetric channel.

Preferably, the coupling element of rigid material is provided with a plurality of tabs, distributed on the interior perimeter of said element, which can be coupled under pressure in the corresponding grooved projections of the base.

The base, the coupling element and the brush are thus totally attached to each other to provide a compact and strong structure.

In order to ensure perfect coupling, the brush is preferably provided with a plurality of lugs which secure the coupling element to the brush. At the same time, the lugs of the brush are engaged into the interior perimetric channel of the base.

In a preferred embodiment of the invention, at least one of the larger sides of the brush extends in a skirt. The cleaning utensil of the invention can thus be used to clean solid remains stuck to the floor or any other type of dirt difficult to remove with the brush.

Advantageously, the base presents means for securing it to a handle or the like. These means comprise a bushing provided with an interior screw thread, the lower part of which has an exterior profile which matches the interior profile of the neck of the base.

Said lower part extends in a number of feet, the end of each of which is provided with a projection by way of lug which can be coupled to said neck of the base.

The securing means described lend the cleaning device of the invention several advantages:

firstly, said means ensure correct securing of the handle to the cleaning utensil, preventing it becoming detached during use;

secondly, the bushing is independent of the base in order to permit fast assembly thereof;

thirdly, said bushing is provided with some feet which are coupled under pressure in the neck of the base, thereby ensuring that the bushing is perfectly secured to said neck and preventing its extraction, thanks to the geometry of the projection from each foot;

finally, the matching exterior outline of the bushing and interior outline of the neck of the base prevents rotation of the bushing.

In order to lend the device of the invention greater rigidity, both the base and the coupling element are provided with a number of reinforcing ribs running transversally inside said base and said coupling element.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of all that is described in the present specification, some drawings are attached

in which, solely by way of non-restrictive example, a practical case of embodiment of the device object of the present invention is shown.

In said drawings, Figure 1 is an exploded perspective view of the cleaning device; and Figure 2 is a plan view of the interior of the base.

DESCRIPTION OF A PREFERRED EMBODIMENT

As can be appreciated from Figure 1, the cleaning device comprises a base 1 which can be coupled to a handle 2. A brush 3 can be coupled to said base 1 thanks to the coupling means 4, which are made up of a coupling element 5 which is independent of the base 1 and of the brush 3.

As is illustrated in Figures 1 and 2, the base 1 is provided with a plurality of grooved projections 6, which are distributed in its interior. With the exterior outline 7 of the base 1, said projections define an interior perimetric channel 8.

The coupling element 5 is provided with a plurality of tabs 9, distributed on the interior perimeter of said element 5, which can be coupled under pressure in the corresponding grooved projections 6 of the base 1.

As can be appreciated from Figure 1, the brush 3 is provided with a plurality of lugs 10 which secure the coupling element 5 to the brush 3. At the same time, these lugs 10 are engaged into the interior perimetric channel 8 of the base 1, shown in Figure 2.

Figure 1 shows the brush 3 extending in the skirt 11. The base 1 has means 12 for securing it to a handle 2, which include a bushing 13 provided with an interior screw thread. The lower part of the bushing 13 has an octagonal exterior profile 15 which matches the interior profile 16 of the neck 17 of the base 1, shown in greater detail in Figure 2.

Said lower part extends in four feet 18,19,20,21, arranged alternately and provided at their ends with a projection by way of lug which can be coupled to said neck 17.

Figure 2 shows the reinforcing ribs 22 of the base 1, arranged transversally inside it. In analogous fashion, the coupling element 5 has reinforcing ribs 23 which lend it rigidity, as shown in Figure 1.

Independent of the object of the invention shall be the materials used in manufacturing of the cleaning device, the shapes and dimensions of same and all accessory details which might arise, as long as they do not affect its essential nature.

Claims

1. Cleaning device which comprises a base (1) of rigid material which can be coupled to a handle (2) and which incorporates a brush (3) or similar cleaning element of flexible material which is independent of the base and which includes coupling means (4) between the base and the brush, characterized in

that the coupling means are constituted by a coupling element (5) which is independent of the base (1) and of the brush (3) respectively.

2. Device as claimed in Claim 1, characterized in that said coupling element (5) is made of rigid material, and can be coupled to the base (1) and to the brush (3) respectively.

3. Device as claimed in Claims 1 or 2, characterized in that the base (1) is provided with a plurality of grooved projections (6) distributed inside it and in that said projections define, with the exterior outline (7) of the base, an interior perimetric channel (8).

4. Cleaning device as claimed in Claims 2 or 3, characterized in that said coupling element (5) of rigid material is provided with a plurality of tabs (9), distributed on the interior perimeter of said element, and in that said tabs (9) can be coupled under pressure in the corresponding grooved projections (6) of the base.

5. Device as claimed in either of Claims 3 or 4, characterized in that the brush (3) is provided with a plurality of lugs (10) which secure the coupling element (5) of rigid material to the brush (3), when said element is coupled to the brush, and in that said lugs (10) are engaged into the interior perimetric channel (8) of the base.

6. Device as claimed in any of the previous claims, characterized in that at least one of the larger sides of the brush (3) extends in a skirt (11).

7. Device as claimed in any of the previous claims, characterized in that the base (1) is provided with means (12) for securing it to a handle (2) or the like.

8. Device as claimed in Claim 7, characterized in that said securing means (12) include a bushing (13) provided with an interior screw thread, the lower part of which has an exterior profile (15) which matches with the interior profile (16) of the neck (17) of the base, and in that said lower part extends in a number of feet (18-21), the end of each foot being provided with a projection by way of lug which can be coupled to said neck (17) of the base.

9. Device as claimed in any of the previous claims, characterized in that both the base (1) and the coupling element (5) are provided with a number of reinforcing ribs (23) running transversally inside said base and said coupling element.

FIG. 1

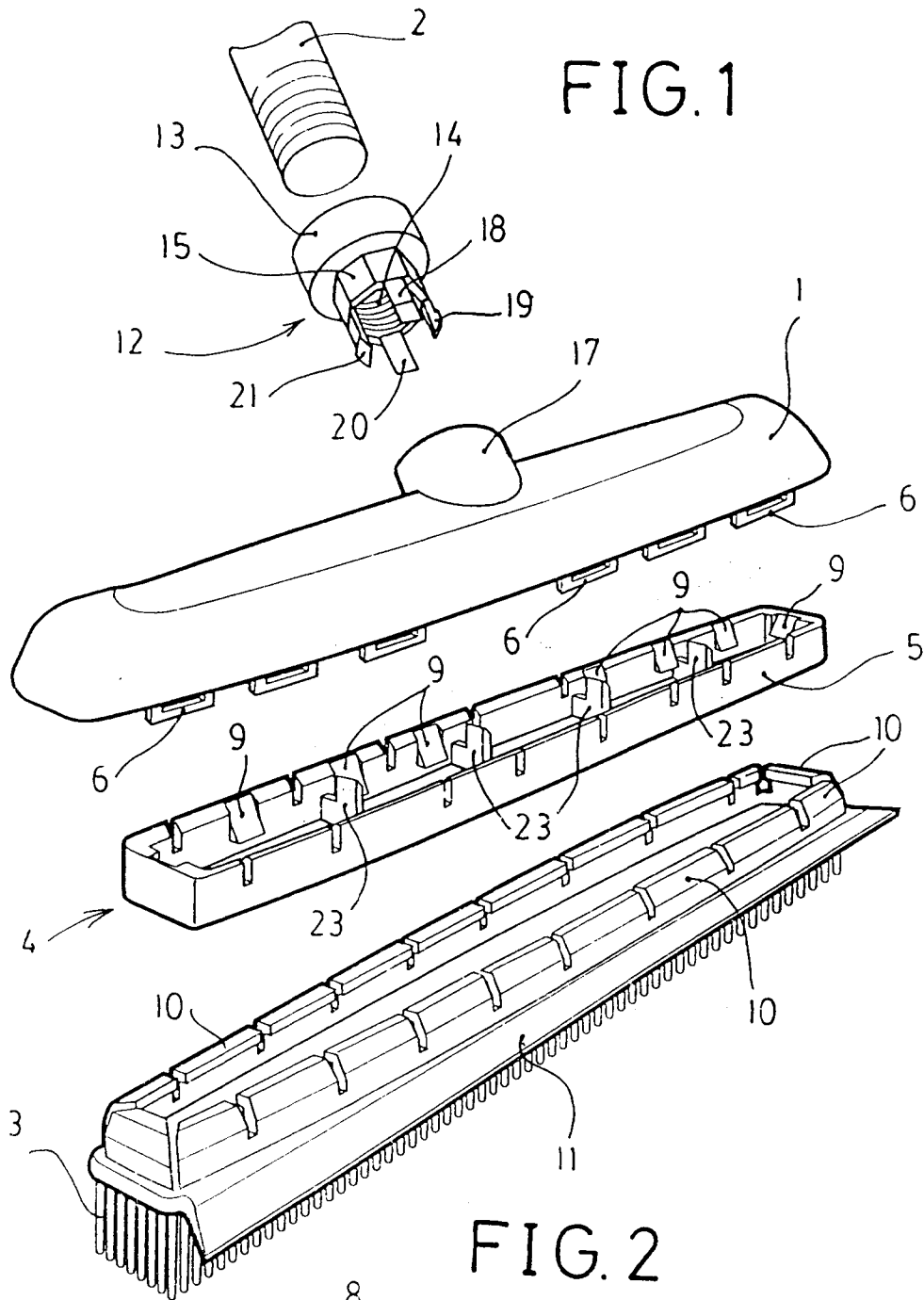


FIG. 2

