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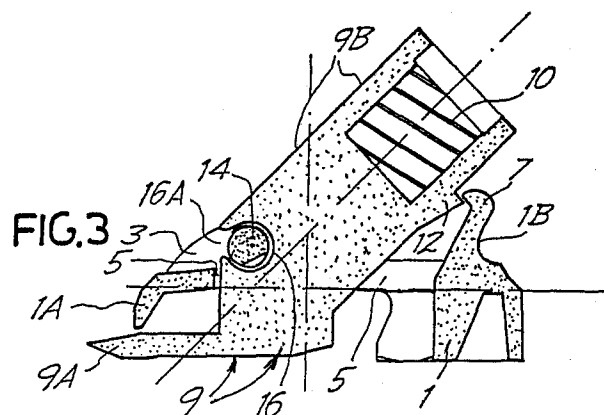
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⑤ An implement for cleaning floors and other.

⑤ An apparatus that is an implement to be fitted to a handling stick and able to engage a floor cleaning cloth, comprising: a body (1) which forms a transverse articulation pin (14) carried by two tabs (3) spaced apart and flanking a slot (5), an upper clamping surface (1A), and a resilient retention catch (7); and an element (9) forming the lower clamping surface (9A) of the jaw-like clamping system, a core (9B) with a seat (10) for the stick and apt to be received in said slot (5), an articulation housing (16) for said pin (14) and a catch (12) able to cooperate with said resilient catch (7) for the clamping of the cloth.



## Description

### "AN IMPLEMENT FOR CLEANING FLOORS AND OTHER"

The invention relates to an apparatus that is, an implement to be fitted to a handling stick in order to handle a cleaning cloth, especially for floors, and other uses. The apparatus is able to steadily engage the cloth to ease handling and it is so constructed as to facilitate all the operations for the engagement and disengagement of the cloth.

Substantially, the present apparatus, that is the implement comprises:

- a body forming a transverse articulation pin carried by two tabs being spaced apart and flanking a slot, an upper clamping surface of a clamping jaw-like system, and a resilient retaining catch;
- and an element forming the lower clamping surface of the clamping jaw-like system, a core with a seat for the stick and apt to be received in said slot, an articulation housing for said pin, and a catch able to cooperate with said resilient catch for establishing the clamping of the cloth.

Advantageously, said pin has a flattening, that is a flat face, and said housing has a longitudinal opening to accommodate the pin only in a particular relative angular position, different from the range of the relative positions which are taken up in the opening and closing arrangements of the jaw system.

The position of the retaining catches is such as to obtain the engagement by a lowering of the stick while taking the apparatus laid down onto the floor.

Practically, the edge of the member forming the lower clamp-like surface is sharp and made to protrude in order to ease the clamping of the cloth from the floor.

The apparatus may be formed so as to operate as a bristled scrub-brush, besides making up a clamp means able to permanently engage a cloth to ease the handling. By moving the cloth in front of the clamp means, the scrub-brush is uncovered and can be used. By bringing back the cloth - always engaged with the clamp means - it can be handled by the scrub-brush portion pressed thereon. Practically, the present apparatus in this case comprises: a body forming a transverse articulation and a clamping surface of a clamping jaw-like system; an element articulated to the body and forming the other clamping surface of the clamping jaw-like system; a core with a seat for the stick; and on the back of the jaw-forming assembly a transverse zone with bristles or equivalent for making up the scrub-brush. This may be formed with bristled appendices integrally moulded with the body, or with bristles driven into holes thereof, or with a bristled small plank arranged into a seat suitably provided in the body.

The drawing shows feasible embodiments, and in particular:

Fig.1 shows an ensemble perspective view;

Fig.2 shows a plan view;

Figs.3 and 4 are section views through line III-III and IV-IV in Fig.2, showing the apparatus with the clamp closed;

Fig.5 is similar to Fig.4, but shows the clamp

in open position;

Fig.6 shows a detail of one of the elements in side view;

Fig.7 shows an ensemble perspective view;

Figs.8A and 8B show two ways of use;

Figs.9, 10 and 11 show cross-section views of three possible equivalent embodiments.

According to what is illustrated in the attached drawing (Figs.1 to 6), a first transversally extending piece or element 1 has the front part 1A shaped to make up one of the two jaws of the clamp and thus one of the two clamping surfaces. Element 1 has two tabs 3 in central position which flank a central slot 5. On the opposite side of profile 1A, the slot 5 is delimited by a projection 1B developing upwards and forming a retaining catch 7 for the purposes indicated below; this catch 7 will be resilient to a limited extent owing to the shape of projection 1B.

A second piece or element 9 makes up the lower surface 9A of the clamp capable of cooperating with the shaped part 1A and projecting to a limited extent therefrom with a thinned edge. This body 9 has a core 9B which forms the seat 10 for the stick; this core 9B also forms a lower catch 12 able to cooperate with catch 7 for the purposes and in the ways described herebelow. The body 9, or better, its extension 9B, is capable of crossing the slot 5 to present the seat 10 at the upper part of the apparatus formed by the two elements 1 and 9.

The two elements 1 and 9 are articulated one to the other in an advantageously removable way and capable, anyway, of providing an articulation restraint with a joint not easily disengageable during use. To this end, according to the drawing, a pin 14 is provided, which crosses the slot 5 being solid by moulding with the two tabs 3 flanking said opening. The pin 14 has a suitably oriented flat surface. In a corresponding way the element 9 with its core 9B has a housing 16 open at 16A in order to accommodate the pin 14; after being rotated from its fit i.e. insertion position through the access slot 16A, the pin engages seat 16 thereby ensuring an articulation engagement without any possibility of release unless the element 9 is greatly inclined with respect to element 1.

Since the two elements 1 and 9 are articulated in the above mentioned or equivalent manner, they may take up relative angular positions as shown in Figs.3, 4 and respectively 5, that is, a closing position (Figs.3 and 4) of the two portions 1A, 9A forming the clamp and an opening position (Fig.5). In the angular position of Fig.5, a cloth may be easily inserted between parts 1A and 9A by making the front edge of part 9A slide - for example on the floor where the cloth lies - and then lowering the handle, that is, the stick inserted into seat 10 by a movement according to arrow f10 for the closing; the cloth is thus gripped and then engaged by the clamp formed by parts 9A and 1A. The gripping, i.e., engagement position of the cloth is made steady by the mutual engagement between the two catches 12 and 7, which take up the

clamping arrangement upon displacement according to f10 and through a slight initial yielding of projection 1B. The cloth is therefore engaged and can be easily used for cleaning operations. To disengage the cloth, it is sufficient to move the stick in the direction opposite to arrow f10, suitably counteracting the dragging movement of element 1, 1A by means, for example, of a foot.

The closing and opening manoeuvres of the clamp can be easily obtained by handling the stick and keeping the apparatus assembly leaned over and pressed against the floor, possibly through a foot retention.

The two elements of the apparatus may be disengaged from each other thereby ensuring the possibility of an easy periodic cleaning of same apparatus.

According to Figs.7 to 11, a first transversally extending element 21 has the front part 21A shaped to make up one of the jaws of the clamp and then one of the two clamping surfaces. The element 21 has two tabs 23 in central position to make up an articulation - in correspondence of a central slot 25 - for a second element 29, which forms the lower surface 29A of the clamp apt to cooperate with the shaped part 21A and projecting therefrom to a limited extent with a thinned edge; this body 29 has a core 29B which forms the seat for the stick; this core 29B also forms a lower catch 32 apt to cooperate with a catch 27, formed by an elastic appendix 21B of the element 21, for the snap-closing of the jaws.

The two pieces, i.e. the elements 21 and 29, may be articulated one to the other in an advantageously removable way and, anyhow, capable of providing an articulation restraint with a joint not easily disengageable during use. The two articulated elements 21 and 29 may take up relative angular positions and, in particular, a closing position of the two clamp-forming portions 21A, 29A, and an opening position. In the opening angular position, a cloth P may be easily received between the two jaws 21A and 29A by making the front edge of part 29A slide on the floor, for example, where the cloth is laid; the jaw is then snap-closed and the cloth is thus gripped and thereby engaged by the clamp formed by portions 29A and 21A. The clamping or engagement position of the cloth is stabilized through the mutual engagement of the two catches 32 and 27.

In the rear of the assembly, element 21 has a zone forming a scrub-brush with bristles 31 moulded together with element 21 (Fig.9), or with bristles 33 inserted into the thickness 21A of element 21 (Fig.10), or with bristles 35 of a small plank 37 (Fig.11) engaged into a seat of element 21.

The cloth P may be used by pushing it in front of the clamp-forming assembly 21, 29, as shown in Fig.8A, or may be folded beneath the assembly 21, 29 and pressed through the bristles (31 or 33 or 35). The scrub-brush portion can be directly used on the floor without the cloth or with the cloth disposed according to Fig.8A.

## Claims

1) An apparatus that is an implement to be fitted to a handling stick and able to engage a floor cleaning cloth, characterized in that it comprises: a body (1) which forms a transverse articulation pin (14) carried by two tabs (3) spaced apart and flanking a slot (5), an upper clamping surface (1A), and a resilient retention catch (7); and an element (9) forming the lower clamping surface (9A) of the jaw-like clamping system a core (9B) with a seat (10) for the stick and apt to be received in said slot (5), an articulation housing (16) for said pin and a catch (12) able to cooperate with said resilient catch (7) for the clamping of the cloth.

2) Apparatus according to claim 1, characterized in that said pin (14) has a flat face and said housing (16) has a longitudinal opening (16A) for receiving the pin (14) only in a particular relative angular position, different from the range of relative positions taken up in the opening and closing arrangements of the jaw system.

3) Apparatus according to claims 1 and 2, characterized in that the position of the retention catches (7, 12) is such as to obtain the retention by a lowering of the stick with the apparatus laid down on the floor.

4) Apparatus according to claims 1 to 3, characterized in that the edge of the member (9) forming the lower clamping surface (9A) is sharp and made to protrude for easing the clamping of the cloth from the floor.

5) Apparatus according to claim 1, characterized in that it comprises a portion having bristles forming a bristled scrub-brush (31; 33; 35).

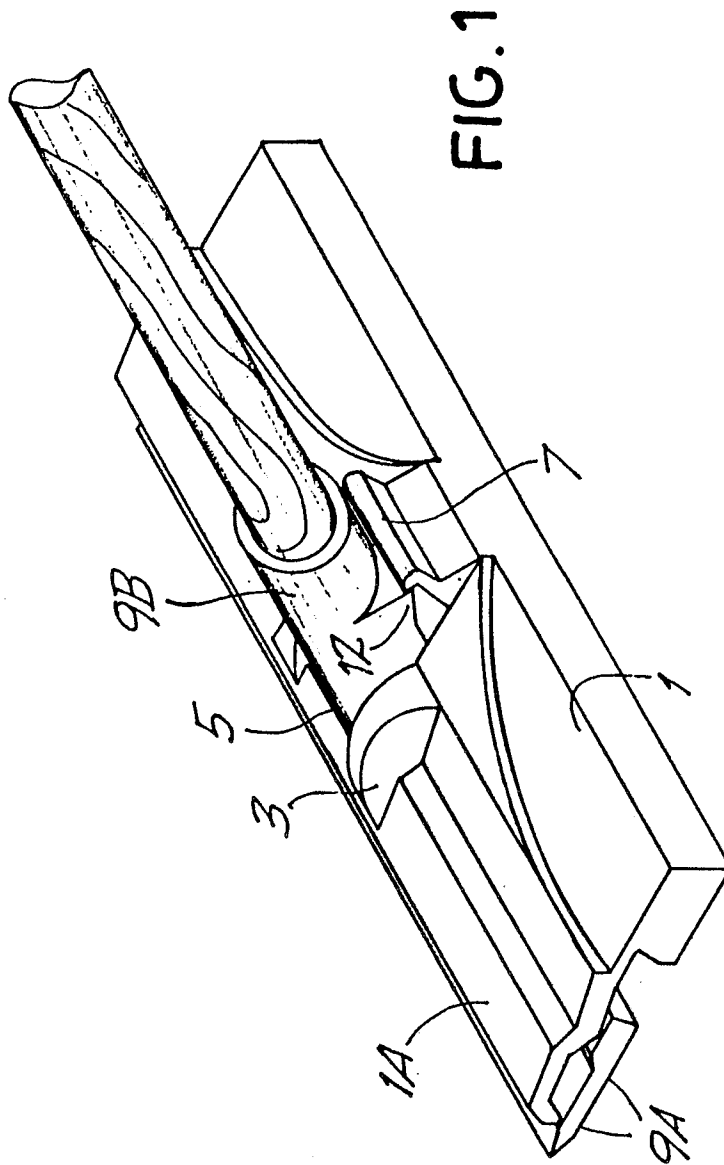
6) Apparatus according to claim 5, characterized in that the transverse zone with bristles or equivalent to make up a scrub-brush is formed on the rear of the jaw-forming assembly.

7) Apparatus according to claims 5 and 6, characterized in that the scrub-brush is formed with bristled appendixes (31) integrally moulded with the body.

8) Apparatus according to claims 5 and 6, characterized in that the scrub-brush is formed with bristled inserted into holes thereof.

9) Apparatus according to claims 5 and 6, characterized in that the scrub-brush is formed by a small plant (37) with bristles (35), arranged into a seat suitably provided in the body.

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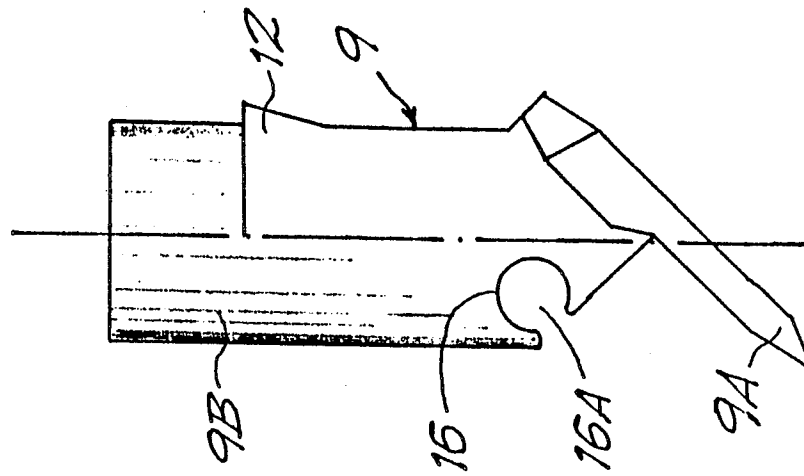


FIG. 6

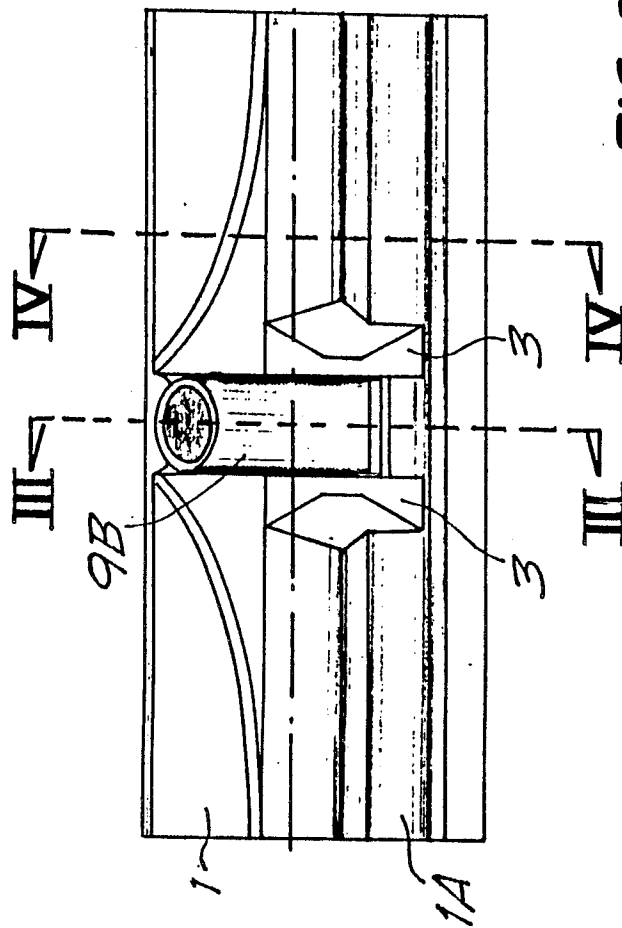


FIG. 2

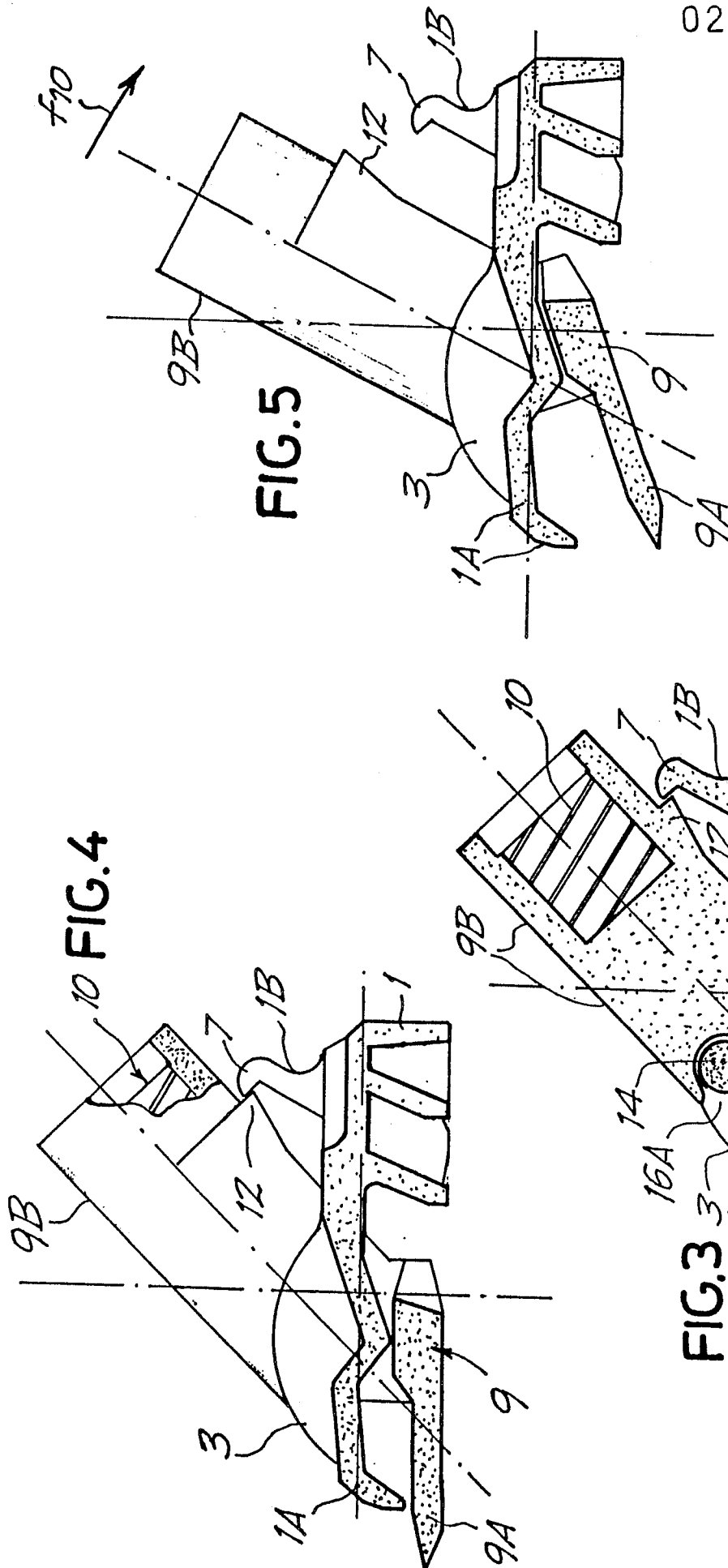


FIG. 7

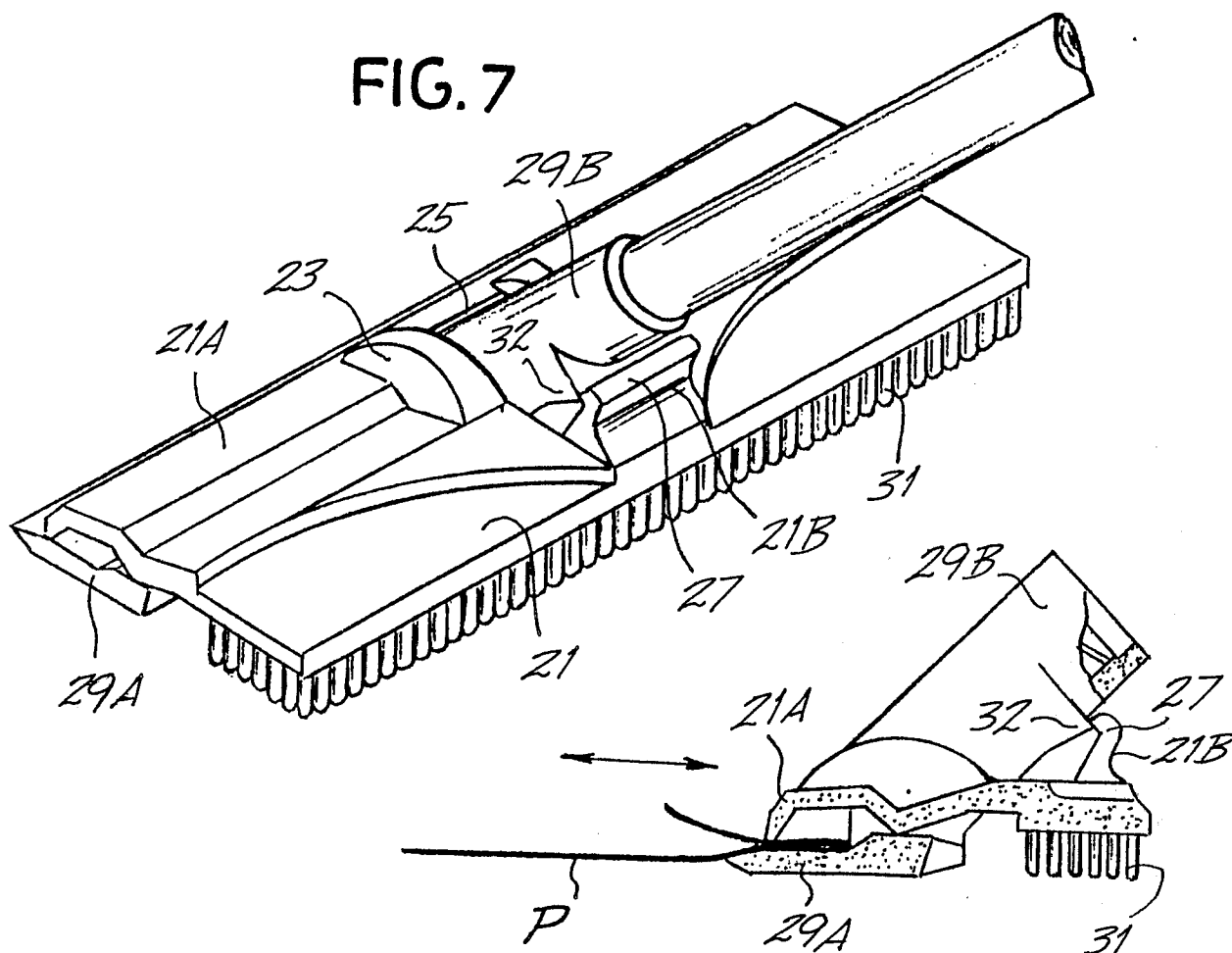


FIG. 8A

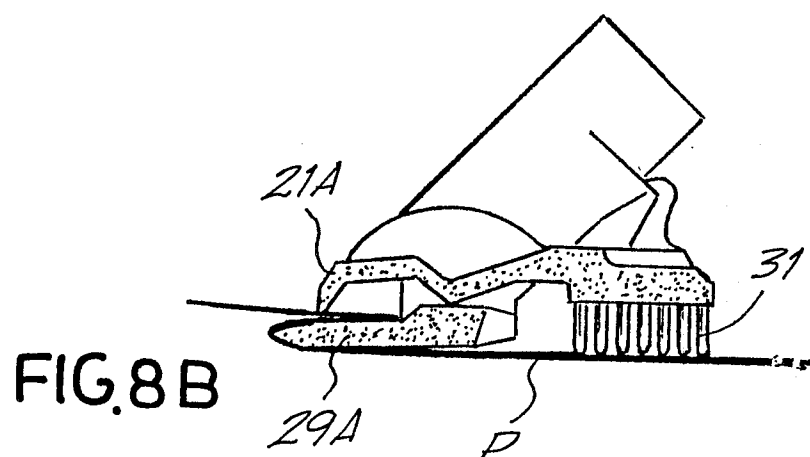


FIG. 8B

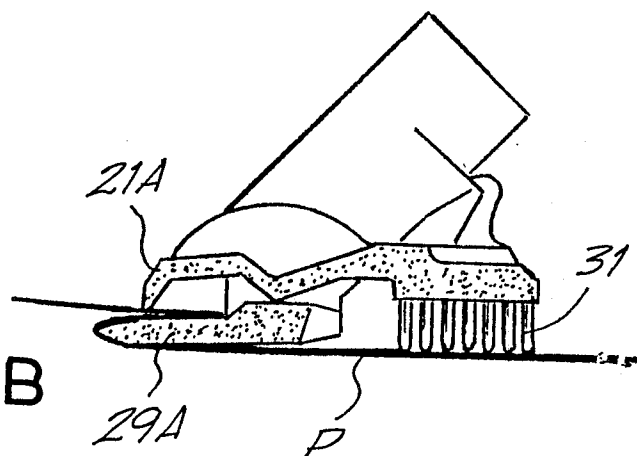


FIG. 9

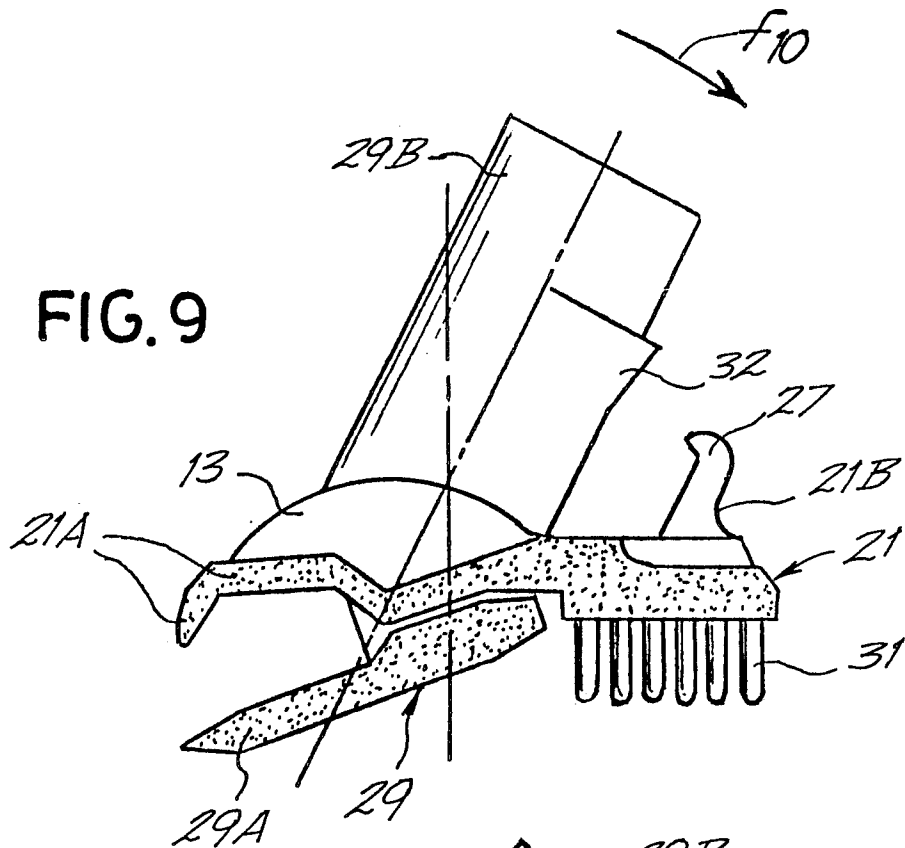


FIG. 11

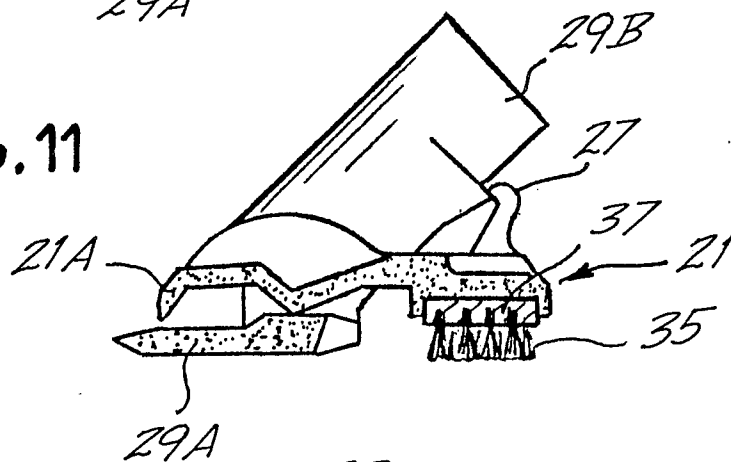


FIG. 10

