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(54) Improved squeegee particularly for washing floors and/or tiled walls.

(57) The improved squeegee comprises a central plate-like element (3) having a cylindrical element (7) rotatably connected thereto which has a tab (14) for rotatable coupling to a handle. The central element (3) has rigidly associated therewith laterally protruding laminae (18,19) having lugs (20,21) which are oscillably connected to expansions (24,25) defined in seats (22,23) formed in adjacent plate-like members (2,4). The adjacent plate-like members (2,4) are oscillable with respect to the central element (3) for cleaning uneven floor surfaces.

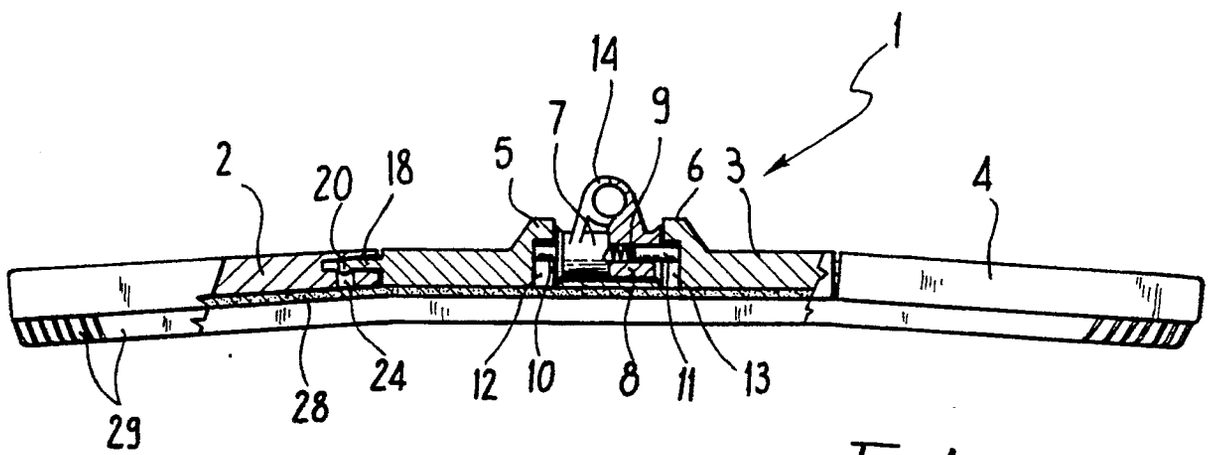

Fig. 1

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IMPROVED SQUEEGEE PARTICULARLY FOR WASHING FLOORS AND/OR TILED WALLS

The present invention relates to an improved squeegee particularly for washing floors and/or tiled walls.

Squeegees are known for washing floors which are constituted by an elongated rigid plate downwardly covered with a rubber or sponge element, and having a device to which a handle is articulated.

A gauze or anti-static cloth is associated with said plate.

The length of the plate may be about at least half a meters so as to be able to perform a cleaning action on a wide floor surface.

However, this entails a considerable disadvantage, due to the fact that floor tiles, which are usually squares of 20 cm x 20 cm, are not always arranged with perfect coplanarity.

For this reason the squeegee does not make contact with the floor along its entire length but only at the highest resting points.

The cleaning action is therefore not optimum, since dirt remains accumulated in particular in the connecting regions between tiles placed at different heights and requires, for its removal, further passes with cloths or other cleaning means.

This same disadvantageous phenomena occurs also in the case of other types of pavements or floor coverings which have a surface that is not level.

The aim of the present invention is to solve the disadvantage described above in the known art by providing an improved squeegee which allows an excellent cleaning action even on uneven floors.

A consequent primary object is to provide an improved squeegee which can also be conveniently used for cleaning tiled walls.

Another important object is to provide an improved squeegee which can be produced at low cost with conventional thermoplastic injection-molding systems.

This aim, these objects and others which will become apparent hereinafter are achieved by an improved squeegee particularly for washing floors, characterized in that it comprises at least three substantially plate-like aligned elements, including at least two lateral elements oscillably coupled to a central element, which has means for the coupling with a handle, said squeegee being downwardly covered with at least one element made of soft material.

Further characteristics and advantages of the invention will become apparent from the detailed description of an embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a partially sectional side view, taken in a median region, of the improved squeegee according to the invention;

figure 2 is an enlarged perspective view of the squeegee according to the invention associated with a handle, without the lower covering element;

figure 3 is an exploded perspective view of the median portion of the improved squeegee according to the invention.

With reference to the above figures, the improved squeegee particularly for washing floors is generally indicated by the reference numeral 1 and comprises three substantially plate-like aligned elements, respectively indicated by the reference numerals 2, 3 and 4, preferably produced by injection-molding thermoplastic materials.

Two parallel tabs, respectively 5 and 6, extend from the central element 3, at a median region thereof, and an insertion seat 100 is provided therebetween for a cylindrical element 7. The element 7 has an axial hole 8 within which a central spring 9 pushes two lateral dowels, respectively 10 and 11, so as to cause them to become inserted into respective seats 12 and 13 provided in the element 3, when the element 7 is inserted into the seat 100.

The cylindrical element 7 is therefore rotationally coupled to the element 3, and a tab 14 extends therefrom; a handle 15 is expediently oscillably coupled to said tab 14.

According to the invention, pairs of laminae 18 and 19, preferably having a substantially rectangular cross section, extend in a co-planar manner from the smaller opposite surfaces 16 and 17 of the element 3. Each lamina ends with a respective rounded raised portion or lugs 20, 21 which extends in a slightly downward direction.

Said pairs of laminae 18,19, which extend from the corresponding smaller surfaces defined at the end portions of the lateral elements 2 and 4, are adapted to be inserted in snap-together engagement relationship in respective seats 22, 23.

Each seat 22, 23 advantageously has an appropriately shaped transverse cross section, e.g. rectangular, which decreases from the outside towards the inside due to the inclination of the lower surface and leads, at a cross section which is slightly greater than the cross section of the laminae 18 and 19, into expansions 24 and 25 which are open downwardly and are adapted to accommodate said raised portions or lugs 20 and 21.

The length of the seats 22 and 23 is conveniently smaller than the length of the laminae 18 and 19, so that the elements 2 and 4 are oscillably coupled to the element 3 and can perform small

rotations in an exclusively downward direction.

As can be seen in the figures, the entire squeegee 1 has, on its upper surface, an annular perimetral seat 26 which can accommodate a corresponding overturned edge 27 extending from a rubber element 28 which covers the lower surface and may be downwardly provided with longitudinal laminae 29.

An auxiliary cleaning element such as a cloth or a gauze can be fixed so as to wrap around the squeegee by means of known plug devices, respectively 30 and 31, provided upwardly on the elements 2 and 4.

From what has been described it can thus be seen that the squeegee according to the invention is capable of adapting to the uneven regions of floors since it is composed of elements which are mutually articulated.

The fact that the lateral elements can perform only downward oscillations with respect to the central element allows the force imparted on the handle by the operator to be transmitted in any case on the entire extension of the squeegee.

It has thus in practice been observed that the invention has achieved the intended aim and objects.

The invention can furthermore be produced in large numbers at low cost with conventional thermoplastic material injection systems.

In practice, the materials employed, so long as compatible with the contingent use. may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. Improved squeegee particularly for washing floors, characterized in that it comprises at least three substantially plate-like aligned elements, including at least two lateral elements oscillably coupled to a central element, which has means for coupling with a handle, said squeegee being covered downward with an element made of soft material.

2. Improved squeegee according to claim 1, characterized in that pairs of parallel co-planar laminae, each of which ends with a rounded raised portion which extends slightly downward, extend from the opposite smaller surfaces of the central one of said three elements.

3. Improved squeegee according to claims 1 and 2, characterized in that said laminae of said pairs can be inserted in respective seats which extend from the corresponding smaller surfaces of the lateral elements, each seat having a transverse cross section which decreases from the outside inward due to the inclination of the lower surface, each seat leading, at a cross section which is slightly greater than that of the respective lamina, into an expansion adapted to accommodate a respective one of said rounded terminal raised portions, said expansion constituting the rotation seat for said rounded raised portion.

4. Improved squeegee according to claim 1, 2, and 3, characterized in that the seats for the coupling of said lateral elements for said laminae of said central element have a smaller length than said laminae, said lateral elements being capable of performing slight oscillations exclusively downward with respect to said central element.

5. Improved squeegee according to claim 1, characterized in that said at least three elements are preferably produced by injection-molding thermoplastic materials.

6. Improved squeegee according to claim 1, 2, 3, 4 or 5, characterized in that it further comprises means for at least temporarily fixing at least one auxiliary cleaning element thereto.

7. Improved squeegee according to claim 1,2,3,4,5 or 6, characterized in that it further comprises at least two tabs rigidly associated with said central element, at least one cylindrical element rotatably with said tabs, and means for rotatably connecting said cylindrical element to a handle.

8. Improved squeegee according to claim 7, characterized in that said tabs have seats formed therein, and in that said cylindrical element has formed therein an axial hole, at least two dowels being at least partially accommodated in said axial hole and rotatably engaging said seats, elastic biasing means being interposed between said dowels.

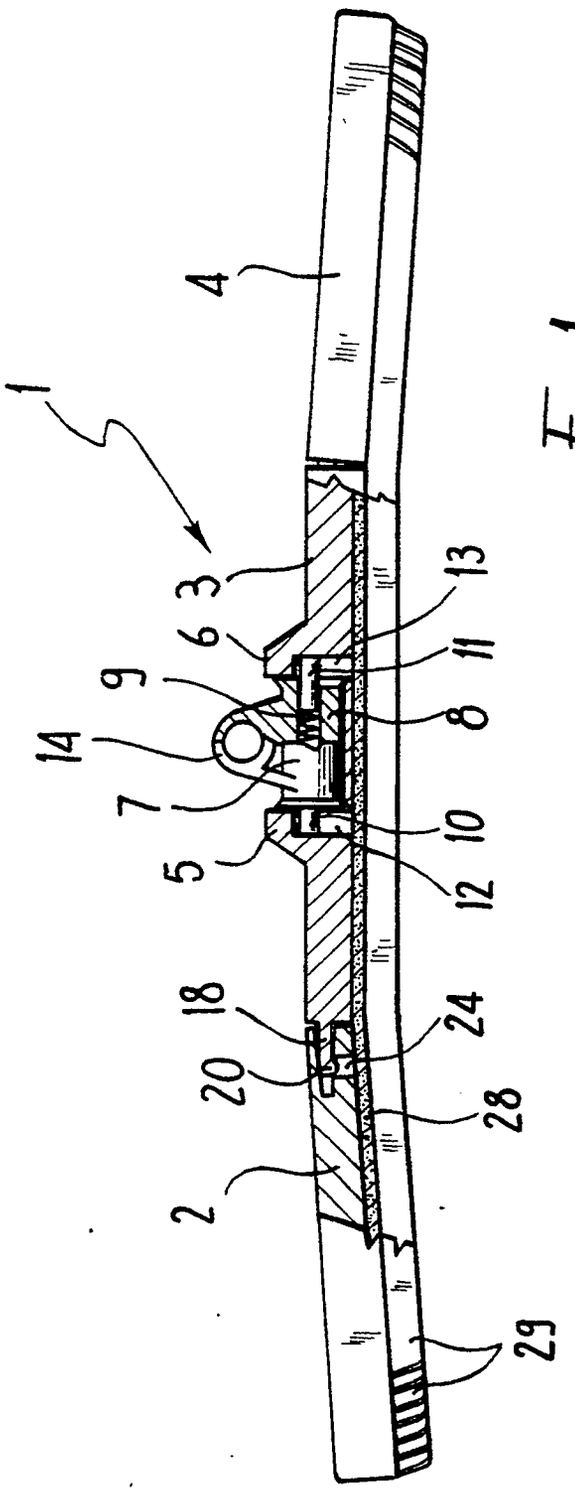

Fig. 1

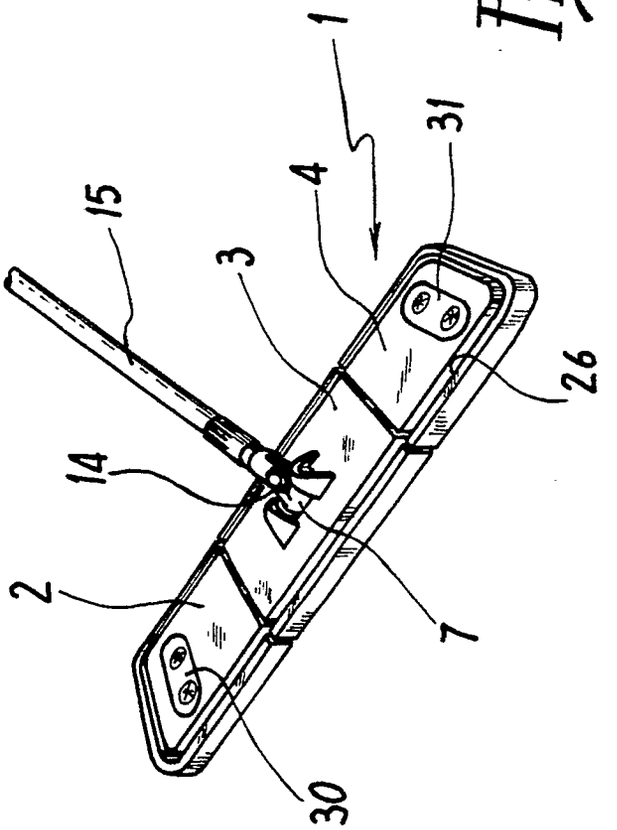

Fig. 2

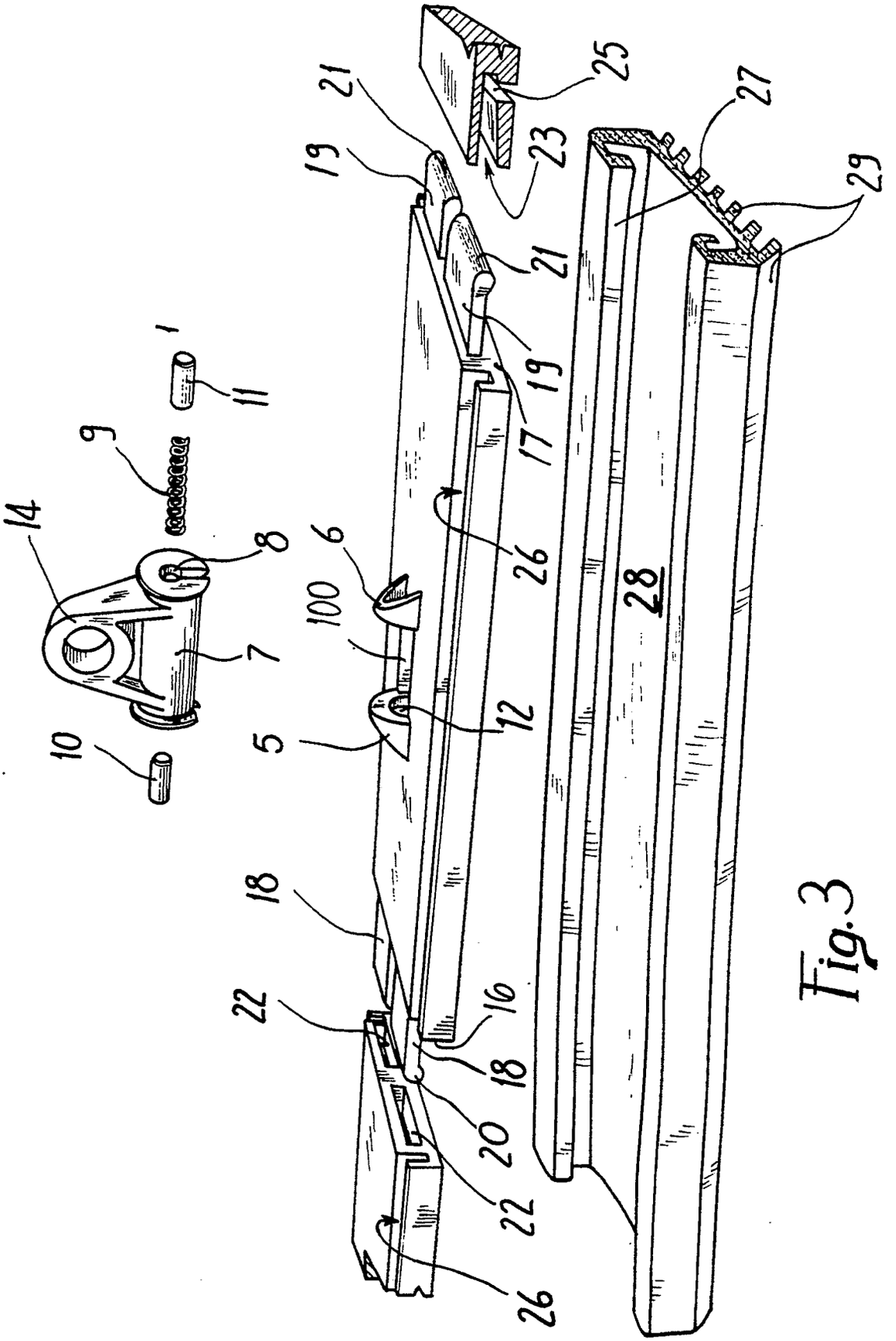

Fig.3

European Patent Office

EUROPEAN SEARCH REPORT

Application number

DOCUMENTS CONSIDERED TO BE RELEVANT

EP 90110619.5

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 5)
A	US - A - 4 845 800 (PEDERSON et al.) * Totality * --	1	A 47 L 13/258
A	GB - A - 2 055 040 (LUNDGREN) * Totality * --	1	
A	US - A - 3 911 521 (FRANCHOT) * Totality * --	1	
A	AT - B - 199 341 (DIETHELM & CO. AG) * Totality * ----	1	

TECHNICAL FIELDS SEARCHED (Int Cl 5)

A 47 L 13/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	11-09-1990	BEHMER

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

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