(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 036 523 A1

# (12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
**20.09.2000 Bulletin 2000/38**

(21) Application number: **00830099.8**

(22) Date of filing: **11.02.2000**

(51) Int Cl.[7]: **A46D 1/00**, A46B 7/04, B25G 3/08, B25G 3/10, B24B 7/22, B24B 41/047, B24D 13/10

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

(30) Priority: **16.02.1999 IT MI990087 U**

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## (54) Brush for the surface treatment of materials

(57) Brush for the surface treatment of materials comprising at least one bundle of abrasive bristles (2) fixed to a support (1) connected to the upper base of an insert (3) which has substantially the shape of a prismoid having the bases and two opposite side surfaces of trapezoidal shape, wherein the upper base of said insert (3) has a smaller extension than the lower base thereof.

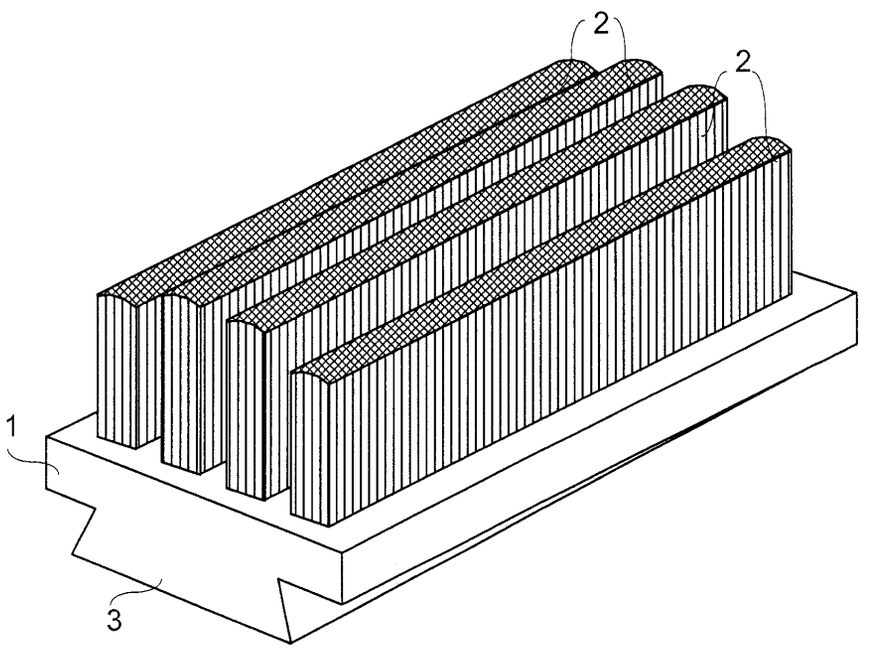


Fig.1

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## Description

**[0001]** The present invention relates to a brush for the surface treatment of materials, and particularly to a brush which can be used in combination with polishing machines for the surfaces of materials which are not perfectly planar in order to confer them a particular polished and glazed effect.

**[0002]** Polishing machines for the surfaces of not perfectly planar materials such as granite and grès, which are useable also with other materials, such as porcelain-grès, ceramic, marble and other stones, are already known. Said known polishing machines comprise a rotating drum having one base provided with a multiplicity of abrasive blocks which are oscillated by means of suitable motor-driven devices around axes arranged radially with respect to the axis of rotation of the rotating drum. By this measure an even polishing of the surface of the treated material is obtained, even when the planarity of said surface is imperfect.

**[0003]** Object of the present invention is obtaining, by means of the known polishing machines, a new kind of surface treatment which confers to the treated material a particular and pleasant polished and glazed effect which has never been obtained until now by these polishing machines or by other machines for the surface treatment of materials. Said object has been achieved by using in combination with said polishing machines an innovatory brush whose main features are disclosed in claim 1 and other features are disclosed in the following claims.

**[0004]** Thanks to the particular shape of the bristle support, the brush according to the present invention can be advantageously mounted in the known polishing machines in place of the oscillating abrasive blocks which carry out the polishing treatment. By this measure, besides obtaining said new polished and glazed effect, also purchasing a special machine only for obtaining the desired effect becomes superfluous, since it is possible to employ for this purpose the known polishing machines which are generally available in every workshop where the surface treatment of materials is carried out.

**[0005]** According to a particular aspect of the invention, the bundles of abrasive bristles are advantageously arranged in a substantially radial orientation with respect to the rotation center of the rotating drum, so that the risk of scratching the materials to be treated is avoided.

**[0006]** According to a further particular aspect of the invention, the ends of the bundles of abrasive bristles are comprised within a substantially curved profile, so that an even contact and pressure on the material to be treated during the brush oscillation are obtained.

**[0007]** Finally, in order to accentuate the desired effect, the abrasive bundles are advantageously provided with a flattened profile and are made of nylon coated with corundum or carbide, such as the material named Tynex® of the company DuPont®.

**[0008]** Further advantages and features of the brush according to the present invention will appear to those which are skilled in the art from the following detailed description of an embodiment thereof with reference to the accompanying drawings wherein:

- figure 1 shows a prospective view of said embodiment;
- figure 2 shows a top plan view of the embodiment of figure 1;
- figure 3 shows a bottom view of the embodiment of figure 1; and
- figure 4 shows a side view of the embodiment of figure 1.

**[0009]** With reference to said figures, the brush according to the present embodiment of the invention is seen to comprise a support 1 preferably made of plastic material and having substantially a parallelepipedal shape. A multiplicity of parallel groovings, particularly four groovings, are made on the larger upper surface of support 1 and in each grooving the end of a bundle of abrasive bristles 2 is inserted and glued, for example by means of a two components epoxy glue. Said abrasive bristles have preferably a flattened cross-section, for instance elliptical or rectangular, and are preferably made of nylon coated with corundum or carbide, such as the material named Tynex® of the company DuPont®. The grain of abrasive bristles 2 can be freely chosen according to the desired effect, however it has been observed that a pleasant polished and glazed appearance can be conferred to most materials by using abrasive bristles having a grain whose index is included between 46 and 320.

**[0010]** The groovings whereinto the bundles of bristles 2 are inserted are preferably arranged longitudinally with respect to support 1, so that when the brush according to the present invention is mounted on an oscillating device of the rotating drum of a polishing machine, said groovings are arranged according to a substantially radial orientation with respect to the rotation center of the drum itself. In order to obtain an even contact and pressure during the oscillation of the brush, the internal couple of bundles of bristles 2 protrudes from support 1 more than the external couple of bundles of bristles 2, so that the ends of said bundles are comprised within a substantially curved profile, as shown by the broken line of figure 4.

**[0011]** In order to mount the brush to an oscillating device of the rotating drum of a polishing machine, the larger lower surface of support 1 is suitably joined to the upper base by an insert 3 which has substantially the shape of a prismoid having the bases and two opposite side surfaces of trapezoidal shape. Particularly, the upper base of insert 3 is slightly smaller than the lower base thereof, so that a double dovetail joint is obtained with a complementary cavity made in the oscillating de-

vice of the rotating drum. Insert 3 is preferably made in one piece of plastic material, for example PVC, with support 1 of bristles 2.

## Claims

1. Brush for the surface treatment of materials, characterized in that it comprises at least one bundle of abrasive bristles (2) fixed to a support (1) joined to the upper base of an insert (3) which has substantially the shape of a prismoid having the bases and two opposite side surfaces of trapezoidal shape, wherein the upper base of said insert (3) has a smaller extension than the lower base thereof.

2. Brush according to the preceding claim, characterized in that the support (1) of the abrasive bristles (2) has a substantially parallelepipedal shape.

3. Brush according to one of the preceding claims, characterized in that a multiplicity of groovings is provided on the upper base of the support (1), in each grooving being inserted one end of a bundle of abrasive bristles (2).

4. Brush according to the preceding claim, characterized in that the groovings wherein the bundles of abrasive bristles (2) are inserted are arranged longitudinally with respect to the support (1).

5. Brush according to one of the preceding claims, characterized in that the internal bundles of abrasive bristles (2) protrude from the support (1) more than the external bundles, so that the ends of said bundles are comprised within a substantially curved profile.

6. Brush according to one of the preceding claims, characterized in that the insert (3) is made in one piece of plastic material with the support (1) of the abrasive bristles (2).

7. Brush according to one of the preceding claims, characterized in that the abrasive bristles (2) have a flattened cross-section.

8. Brush according to one of the preceding claims, characterized in that the abrasive bristles (2) are made of nylon coated with corundum or carbide.

9. Brush according to the preceding claim, characterized in that the abrasive bristles (2) are made of the material named Tynex® of the company DuPont®.

10. Brush according to one of the preceding claims, characterized in that the grain index of the abrasive bristles (2) is included between 46 and 320.

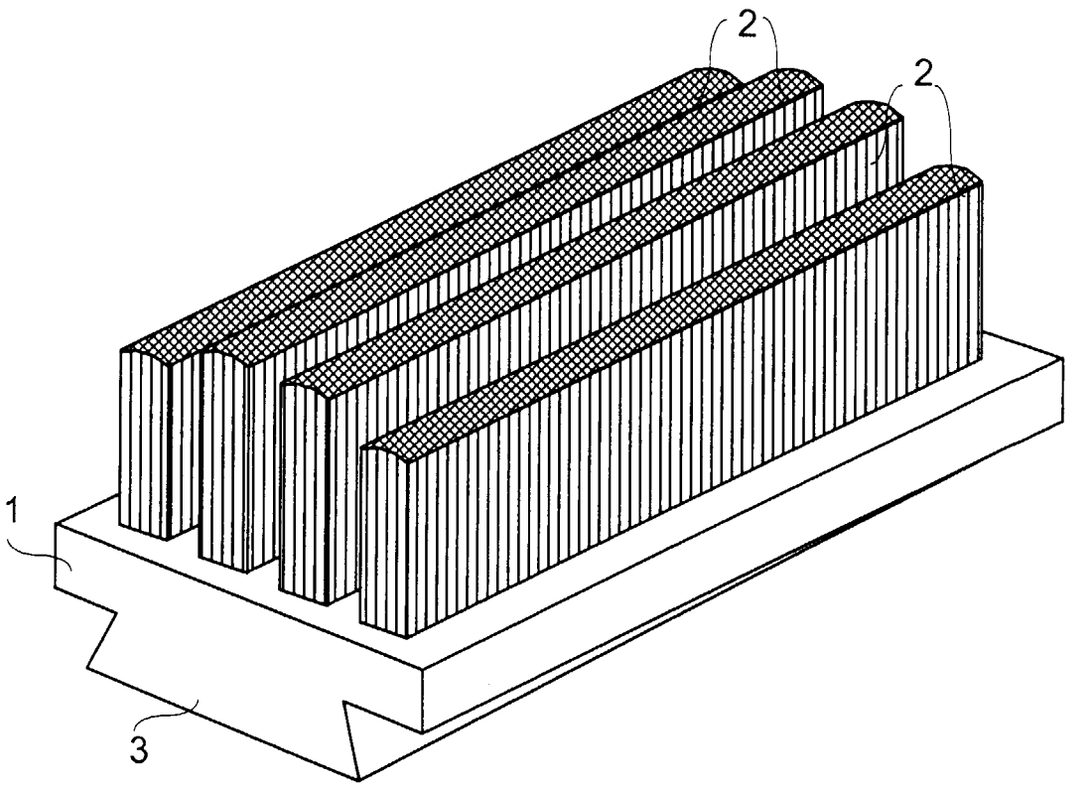


Fig.1

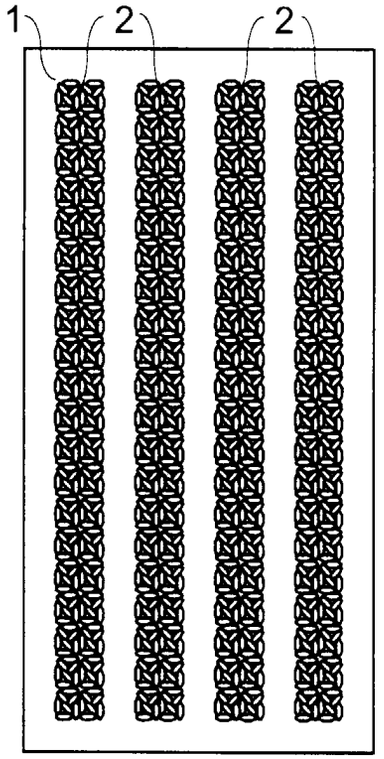


Fig.2

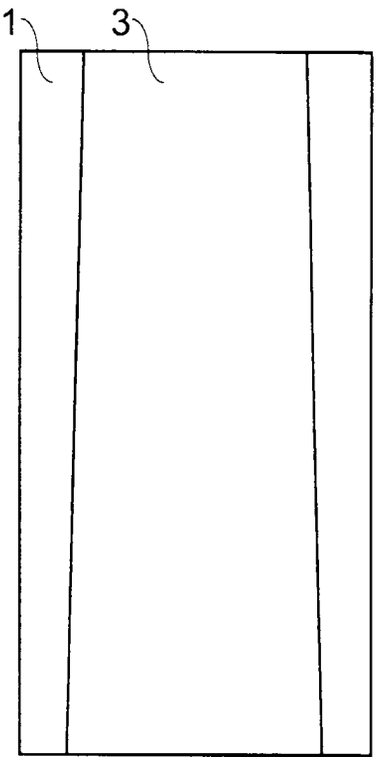


Fig.3

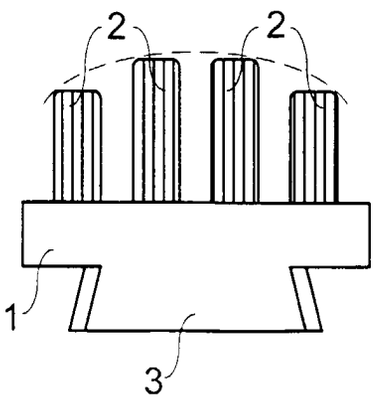


Fig.4

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# EUROPEAN SEARCH REPORT

Application Number
EP 00 83 0099

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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 18 May 2000 | Ottesen, R |

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Application Number
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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 18 May 2000 | Ottesen, R |

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