

## Title (en)

Filament tuft absorbent by capillary action

## Title (de)

Durch Kapillarwirkung saugfähiges Bündel von Borstenfilamenten

## Title (fr)

Touffe de filaments absorbant par capillarité

## Publication

**EP 1021971 A1 20000726 (DE)**

## Application

**EP 99124358 A 19991207**

## Priority

- DE 19859403 A 19981222
- DE 19947459 A 19991002

## Abstract (en)

The frame (9) is injected onto the outer bristles (6), partly penetrating into their interstices. An independent claim is included for the corresponding method of absorbent brush manufacture. A special feature is adjustment of the force holding the fine bristle bundle (7) together during injection molding, to control bundle capillarity. In addition, a corresponding pressure injection mold is claimed. Preferred features: The frame is injected-on, leaving free bristle length on both sides. The frame is an integral annular body. It is pretensioned, holding the bristles together. Tension differs between opposite sides of the frame. Bristles are plastic, outer ones being melted into the frame. They are joined, e.g. adhered, clamped, welded or pressure-injected with plastic, at the end face of the bundle. Bristle filaments are 10-300  $\mu\text{m}$  in diameter. The frame is integrally-connected to another component, e.g. a tank. Frame and bundle-separating transverse strips are made integrally by injection molding. Salient features of the process, include capillarity adjustment by bundle compression, a function of the injection pressure. Plungers in the mold, are used for bundle compression. Capillarity varies over bundle length. Plungers are subjected to spring-loading, hydraulic- or pneumatic force under independent control, working in a different direction to mold closure.

## Abstract (de)

Die Erfindung betrifft ein, durch Kapillarwirkung saugfähiges Bündel (6) von Borstenfilamenten (7), welche Borstenfilamente (7) durch ein Rahmenteil (9) zusammengefaßt sind. Um ein durch Kapillarwirkung saugfähiges Bündel von Borstenfilamenten der in Rede stehenden Art verbessert auszubilden derart, daß eine einfache und prozeßsichere Halterung und Abdichtung der Borstenfilamente gegeben ist, wird vorgeschlagen, daß das Rahmenteil (9) unter teilweise Eindringen in Zwischenbereiche (10) von Außen-Borstenfilamenten (7') an die Borstenfilamente (7) im Kunststoffspritzverfahren angespritzt ist. <IMAGE>

## IPC 1-7

**A46B 3/10**

## IPC 8 full level

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## CPC (source: EP)

**A46B 3/10** (2013.01)

## Citation (search report)

- [A] EP 0300637 A1 19890125 - VAX APPLIANCES LTD [GB]
- [A] US 5702194 A 19971230 - HSU SHIH HSIUNG [TW]
- [A] EP 0097322 A2 19840104 - KELEMEN LASZLO

## Designated contracting state (EPC)

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