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(54) Title: A METHOD AND AN EMBOSSED SET-UP TO EMBOSS TURBULENCE PRODUCING FEATURES INTO A SHEET OF MATERIAL FOR AN INHALABLE DRUG DELIVERY SYSTEM'S FILTERING ELEMENT

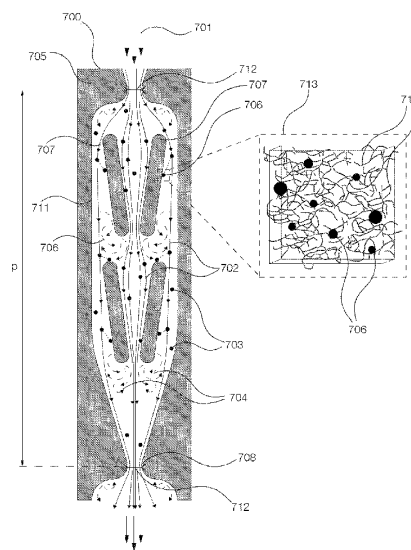


FIG. 7

(57) Abstract: A method for manufacturing an embossed sheet of material (200) configured to be folded and obtain a filtering element (203) configured for an inhalable drug delivery device, and for filtering a mainstream gas flow passing through the filtering element. It comprises: providing the sheet of material (103); and embossing the sheet of material (200) with a plurality of stripes (311, 312), by means of a patrix-matrix embossing rollers system (101, 102), and by patrix-matrix embossing rollers (101, 102), and further configured to form longitudinal delimitation embossed features (310) that delimitate the embossed stripe (311, 312) on the sheet of material A method for manufacturing an embossed sheet of material (200) configured to be folded and obtain a filtering element (203) configured for an inhalable drug delivery device, and for filtering a mainstream gas flow passing through the filtering element. It comprises: providing the sheet of material (103); and embossing the sheet of material (200) with a plurality of stripes (311, 312), by means of a patrix-matrix embossing rollers system (101, 102), and by feeding the sheet of material (103) to a nip between the patrix-matrix embossing rollers (101, 102), each stripe comprising corresponding embossing features on each of a patrix embossing roller (101) and a matrix embossing roller (102) of the embossing rollers system (101, 102), and each embossed stripe (311, 312) being oriented longitudinally on the sheet of material (200) with respect to a feed direction (307) of the sheet of material (103) fed to the nip (105). The embossing features comprise: profile embossing features configured for embossing at least an aerodynamic profile on the sheet of material (200), the profile embossing features being arranged according to a radial direction of the stripe (311, 312) on the embossing rollers (101, 102), the embossed aerodynamic profile being configured to modify in a determined manner flow properties for the mainstream gas flow passing through the filtering element by creating a gas flow turbulence occurrence in the filtering element, whereby the

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profile embossing features in the stripe (311,312) form at least an alternance of a minimum constriction section area (308) and a maximum expansion section area (309) in the radial direction of the stripe (311,312) on the embossing roller (101,102), with a cross section area ratio between the maximum expansion section area (309) and the minimum constriction section area (308) in a range from 15:1 to 2:1. The embossing features further comprise: radial embossing features (605,609) configured to delimitate each stripe (311,312) on opposite radial sides of the stripe (311,312), on the matrix-matrix embossing rollers (101,102), and further configured to form longitudinal delimitation embossed features (310) that delimitate the embossed stripe (311,312) on the sheet of material (200), on opposite longitudinal sides of the embossed stripe (311,312).