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544,271

APERTURED NON-WOVEN STRUCTURE FROM A FILM-FIBRIL SHEET AND METHOD OF MAKING THE SAME

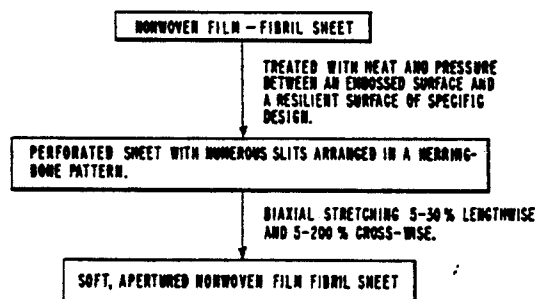
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Class 161-109

1 Sheet Drawing. 14 Pages Specification

FIG. 1



This invention relates to a process for making a soft, apertured, fibrous, nonwoven structure having a high strength per unit weight from a film-fibril sheet. The basic film-fibril sheet is prepared from flash-spun continuous fibrillated strands, preferably of linear high density polyethylene, according to the method of Steuber U.S. Patent 3,169,899. The process of the present invention comprises hot-slit perforating the nonwoven film-fibril sheet by pressing between a supported hot wire screen and a resilient surface. Sufficient heat is supplied and sufficient pressure is exerted between the two surfaces to provide an embossed sheet having numerous perforations in the form of slits. The slits are arranged in two series as in a herringbone pattern with at least one slit per square centimeter in the useable area of the sheet, the slits being at least 0.2 cm. long. The sheet is fused around the edges of the slits, but is unfused elsewhere. The slit sheet is then stretched 5-30% in a direction which is within 5-45° of the orientation of one of the two series of slits, this direction being usually along the longitudinal axis of the sheet. Optionally, the product is then stretched 5-200% in a second direction at about 90° to the first stretch direction.

FIG. 1

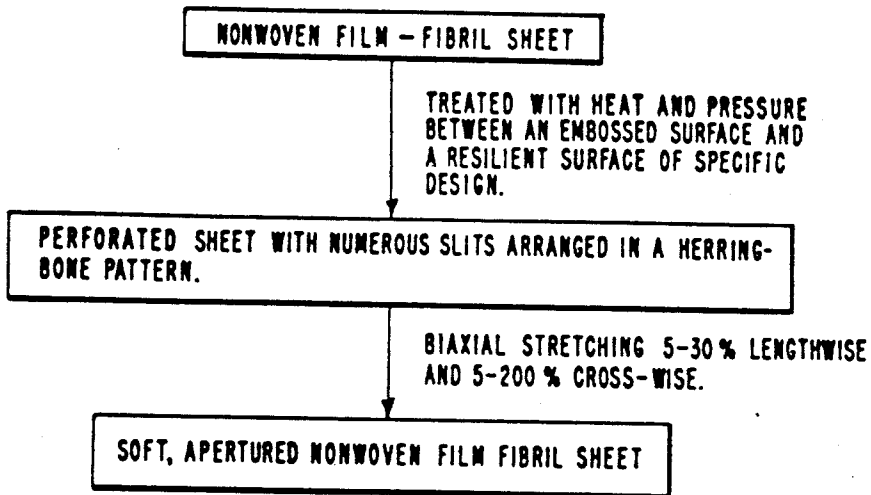


FIG. 2

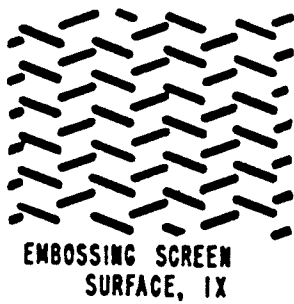


FIG. 3

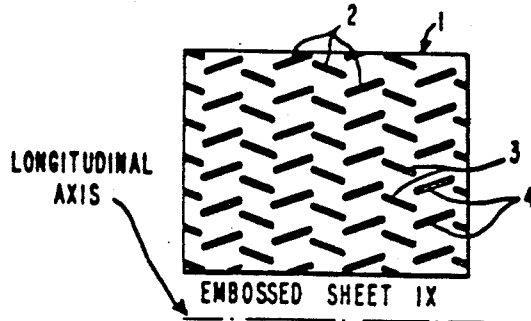


FIG. 4

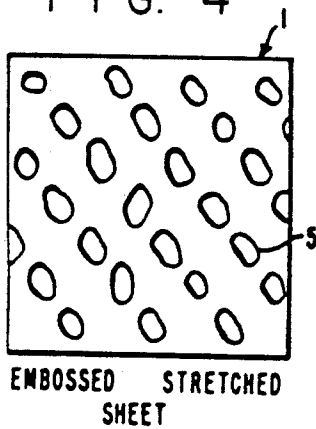


FIG. 5

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