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(54) Title: MICROCONTACT PRINTING WITH HIGH RELIEF STAMPS IN A ROLL-TO-ROLL PROCESS

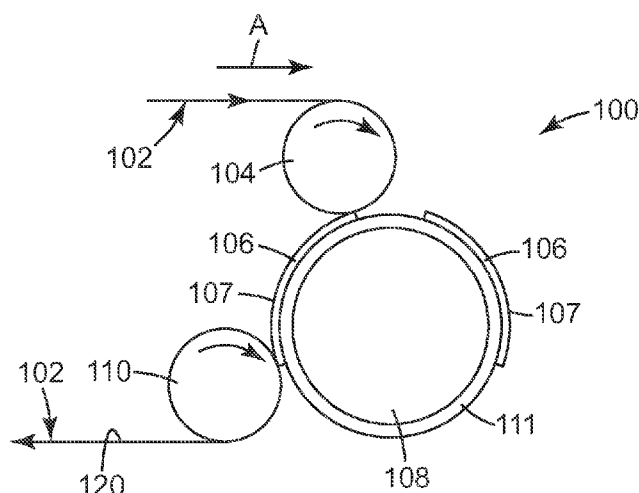


Fig. 5

(57) Abstract: A method includes unwinding a web material from a support and providing an elastomeric stamp, wherein the stamp includes a base surface and an arrangement of pattern elements extending away from the base surface, and wherein each pattern element has a stamping surface with a lateral dimension of less than about 5 microns and a height with respect to the base surface, and wherein an aspect ratio of the height to the lateral dimension is at least 1.5. The stamping surfaces of the pattern elements are inked with an ink composition including a functionalizing molecule, wherein the functionalizing molecule includes a functional group selected to bind to said substrate material. The stamping surface of the pattern elements is contacted with a major surface of the web material for a print time sufficient to bind the functional group with the web material to form a self-assembled monolayer (SAM) of the functionalizing material on the major surface of the web material according to the arrangement of pattern elements on the stamping surface.

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