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(54) **Title:** HEAD SPACE FOR DEPTH FILTERS AND METHOD OF USING SAME

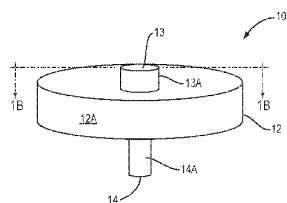


FIG. 1A

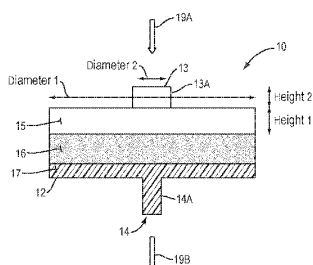


FIG. 1B

(57) Abstract: Depth filters with optimized head space are provided, as well as methods of optimizing the head space in depth filters, and methods of filtration with depth filters having optimized head space, including clarification of flocculated feed streams where pretreatment may include any of lowering cell culture pH, addition of polymers (uncharged or charged), or addition of salts to precipitate out solubilized impurities resulting in high insoluble biomass.