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Declarations under Rule 4.17:

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(54) **Title:** METHOD AND APPARATUS FOR ESTABLISHING PARTIAL ROOT ZONE DRYING IN SOILLESS HYDROPONICS

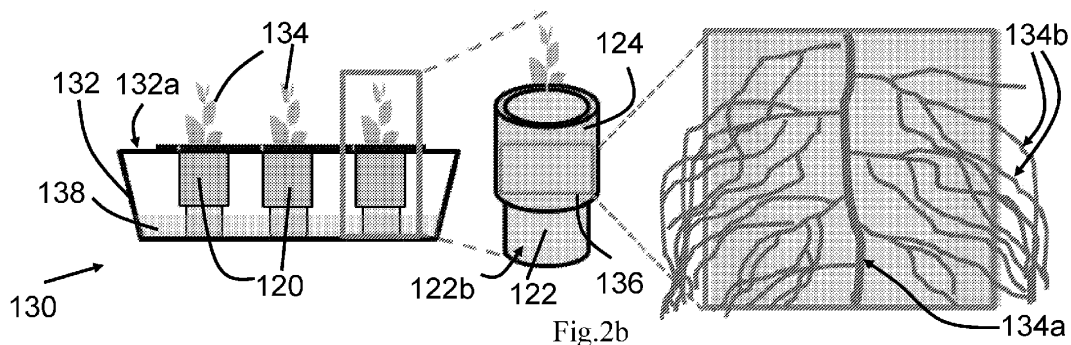


Fig.2b

(57) **Abstract:** An apparatus (20) for establishing partial root zone drying to improve plant roots in soilless hydroponics. The apparatus (20) contains a substrate (22) configured for growing plants and comprising a planting material other than soil, and a porous material (24). The substrate (22) includes a first portion (22a) and a second portion (22b) aligned along a longitudinal direction of the substrate (22). The porous material (24) at least partially covers the first portion (22a) of the substrate (22) and is in contact with air. Pores of the porous material (24) are adapted to expose a portion of traversing roots of a plant grown in the substrate (22) to air, thereby establishing a partial root zone drying for improving roots of the plant. Improvements can be seen in the yield, nutritional value, and nutrient use efficiency of PRD in hydroponic plants.

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