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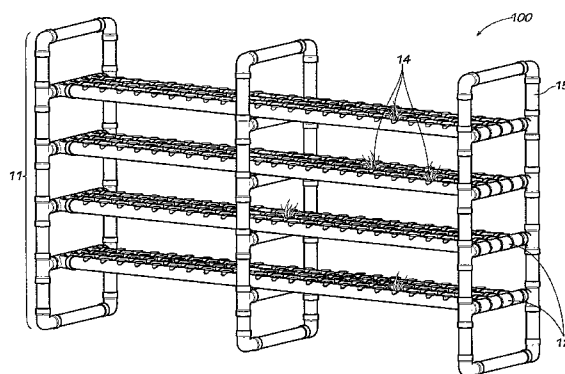
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(54) Title: APPARATUS AND METHOD FOR OPTIMIZING DELIVERY OF NUTRIENTS IN A HYDROPONICS SYSTEM

**FIG. 1**

(57) **Abstract:** A method and apparatus for improving nutrient delivery to plants in a hydroponics system is disclosed. A farming assembly in accordance with the various embodiments of the present invention include a frame (18), a flume (12), and an adjuster (16). The frame is configured to hold a plurality of plants (14) in plant receiving positions above a flume, wherein the flume contains a liquid such as a water and nutrient solution. The adjuster controls the distance between the plurality of plants in the frame and the liquid in the flume by either raising the frame with respect to the flume, lowering the flume with respect to the frame, or utilizing a gate (36) as a dam within the flume. Thus, the various embodiments of the present invention adjust the ratio of roots (19) exposed to air or immersed in liquid. By controlling the distance between the liquid and the roots of the plants, the present invention allows the plants to receive exposure to the air for a certain amount of time (such as thirty minutes), and then, become immersed in the liquid for a certain amount of time, which has the effect of increasing nutrient delivery to the plants and increasing plant growth speed.

