

CLAIMS

1. A planter which includes
a longitudinal body defining at least two longitudinally extending liquid channels; and
at least two plant holders defined in the body, the plant holders spaced on the outer
circumference of the longitudinal body, each one of the at least two plant holders
in fluid flow communication with one of the at least two longitudinally extending
liquid channels.
2. The planter as claimed in claim 1, in which the longitudinal body includes a longitudinal
conduit which is internally divided to define the at least two longitudinally extending liquid
channels.
3. The planter as claimed in claim 1, in which the at least two plant holders are located on
opposed sides of the longitudinal body.
4. The planter as claimed in claim 1, in which the at least two plant holders are alternatively
spaced on opposed sides over the length of the longitudinal body, and in which each of the plant
holders are in fluid flow communication with a different one of the longitudinally extending
liquid channels.
5. The planter as claimed in claim 1, in which the longitudinal body includes connecting
formations at the ends of the longitudinal body, the connecting formations are shaped and
dimensioned to fit into corresponding connection formations of corresponding planters, and the
connecting formations include:
liquid channel connecting formations for connecting the liquid channels of adjacent
planter bodies together; or
gas channel connecting formations for connecting the gas channels of adjacent planter
bodies together.

6. The planter as claimed in claim 1, in which each plant holder includes an inlet opening and an outlet opening, which is in flow communication with its corresponding liquid channel, and in which the inlet opening is located above the outlet opening to permit gravitational liquid flow into the plant holder through the inlet opening and liquid flow from the plant holder through the outlet opening.
7. The planter as claimed in claim 1, in which the planter includes at least one longitudinally extending gas channel, the gas channel having gas outlets spaced along its length.
8. The planter as claimed in claim 1, in which the planter includes an external attachment formation associated with each plant holder for attaching a plant support, the attachment formation is located below the plant holder mouth, and the plant support is in the form of a creeper trellis arranged to support a creeper plant, planted in the plant holder when it grows from the plant holder mouth.
9. The planter as claimed in claim 1, in which the planter includes planting inserts shaped and dimensioned to fit into mouths of the at least two plant holders. and in which the planting inserts are selected from any one or more of: a seedling tray, a planting tray and a seeding clip.
10. The planter as claimed in claim 9, in which the seedling tray is in the form of a cylindrical body, shaped to the shape of the plant holder and includes an inlet opening indexed with the inlet opening of the plant holder, the seedling tray includes a planar base cut in sections to provide drainage slits to permit liquid drainage without flushing seedlings from the seedling tray.
11. The planter as claimed in claim 9, in which the planting tray is in the form of a cylindrical body shaped to the shape of the plant holder and includes an inlet opening indexed with the inlet opening of the plant holder, the planting tray includes a planar base cut in sections to provide drainage slits to permit liquid drainage without flushing seedlings from the seedling tray.

12. The planter as claimed in claim 9, in which the seeding clip has a planar body for closing the planter mouth and provided with a downwardly projecting plate having a slot shaped to engage the stem of a plant.
13. A planter tower, which includes
a plurality of planters as claimed in claim 1, connected together to form an elongate upright planter with plant holders extending from the sides of the planter tower.
14. The planter tower as claimed in claim 13, which includes at least one end member, shaped and dimensioned to connect onto an end of the plurality of planters connected together.
15. The planter tower as claimed in claim 14, in which the planter tower includes two end members, a top end member for connecting to the top end of the plurality of planters and a bottom end member for connecting to the bottom end of the plurality of planters.
16. The planter tower as claimed in claim 15, in which:

the top end member is in the form of an intake closure attached at a top end of a plurality of inter-connected planters for directing liquid into the two longitudinally extending liquid channels and for directing gas into the at least one longitudinally extending gas channel; or

the bottom end member is in the form of an outlet closure attached at a bottom end of a plurality of inter-connected planters for directing liquid from the two longitudinally extending liquid channels and for directing gas from the at least one longitudinally extending gas channel.
17. A hydroponic greenhouse, which includes
an array of planter towers as claimed in claim 13, the planter towers arranged in parallel spaced rows, the rows being provided with a top liquid and gas supply line, connected via an intake closure to a top of each of the planter towers, the rows further being provided with a bottom liquid and gas collection line, connected via an outlet closure to a bottom of each of the planter towers;
a liquid circulation system, connected to the liquid supply lines and the liquid collection lines; and
a gas circulation system, connected to the gas supply lines and the gas collection lines.

18. The hydroponic greenhouse as claimed in claim 17, in which gas outlets of the planters, are directed to the outsides of the planter bodies, the gas outlets being directed at plants in an adjacent planter tower.
19. The hydroponic greenhouse as claimed in claim 17, in which the greenhouse includes a partially closed enclosure, which is provided with any one or more of: air conditioners, high pressure fans, dampers, coiled coolers for recirculation of the liquid or gas from the liquid collection lines to the liquid supply lines or alternatively gas supply lines, geothermal heater/coolers, heat pumps, humidity controllers and infra-red controllers.
20. The hydroponic greenhouse as claimed in claim 44, in which the greenhouse is provided with a nutrient supply dosing pump connected to the liquid circulation system for dosing nutrients into the liquid circulation system or is provided with a filtering arrangement connected to the liquid circulation system for filtering the liquid in the liquid circulation system.