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- (71) Applicant (for all designated States except US):
VALOYA OY [FI/FI]; Lauttasaarentie 54 A 3. krs, FI-00200 Helsinki (FI).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): AIKALA, Lars [FI/FI]; Lammentie 80, FI-02520 Lapinkylä (FI). KIVIMÄKI, Ilkka [FI/FI]; Merikatu 41 A 11, FI-00150 Helsinki (FI).
- (74) Agent: SUINNO OY; PO Box 346, FI-00131 Helsinki (FI).

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(54) Title: PLANT ILLUMINATION DEVICE AND METHOD

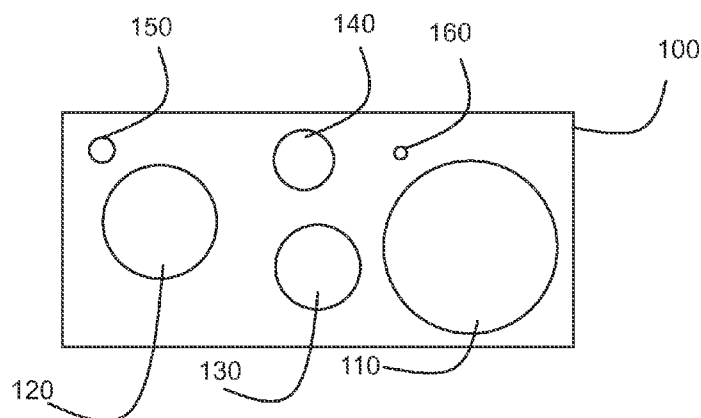


FIG 1B.

(57) Abstract: The invention relates to an improved method to produce artificial light for plant cultivation. In more particular, the invention relates to an illumination device with a semiconductor light emission solution and device suited for plant cultivation in a greenhouse environment. The best mode of the invention is considered to be a lighting device with binary alloy quantum dots (110, 120, 130, 140, 150, 160) made by colloidal methods to produce a size distribution of quantumdots that produces an emission spectrum similar to the photosynthetically active radiation (PAR) spectrum. The methods and arrangements of the invention allow more precise spectral tuning of the emission spectrum for lights used in plant (310, 311) cultivation. The invention therefore realises unexpected improvements in the photomorphogenetic control of plant growth, and further improvements in plant production.