

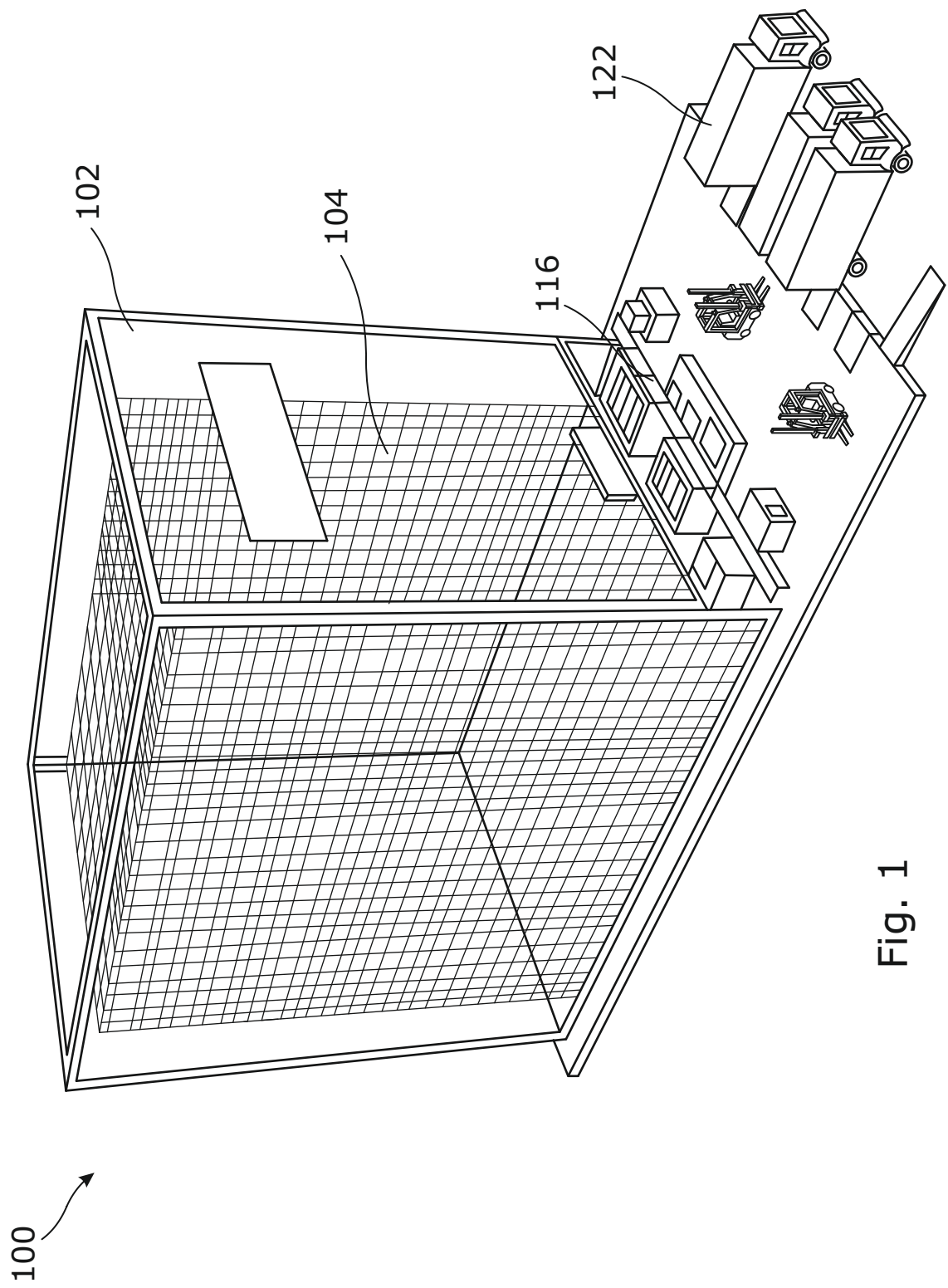


Fig. 1

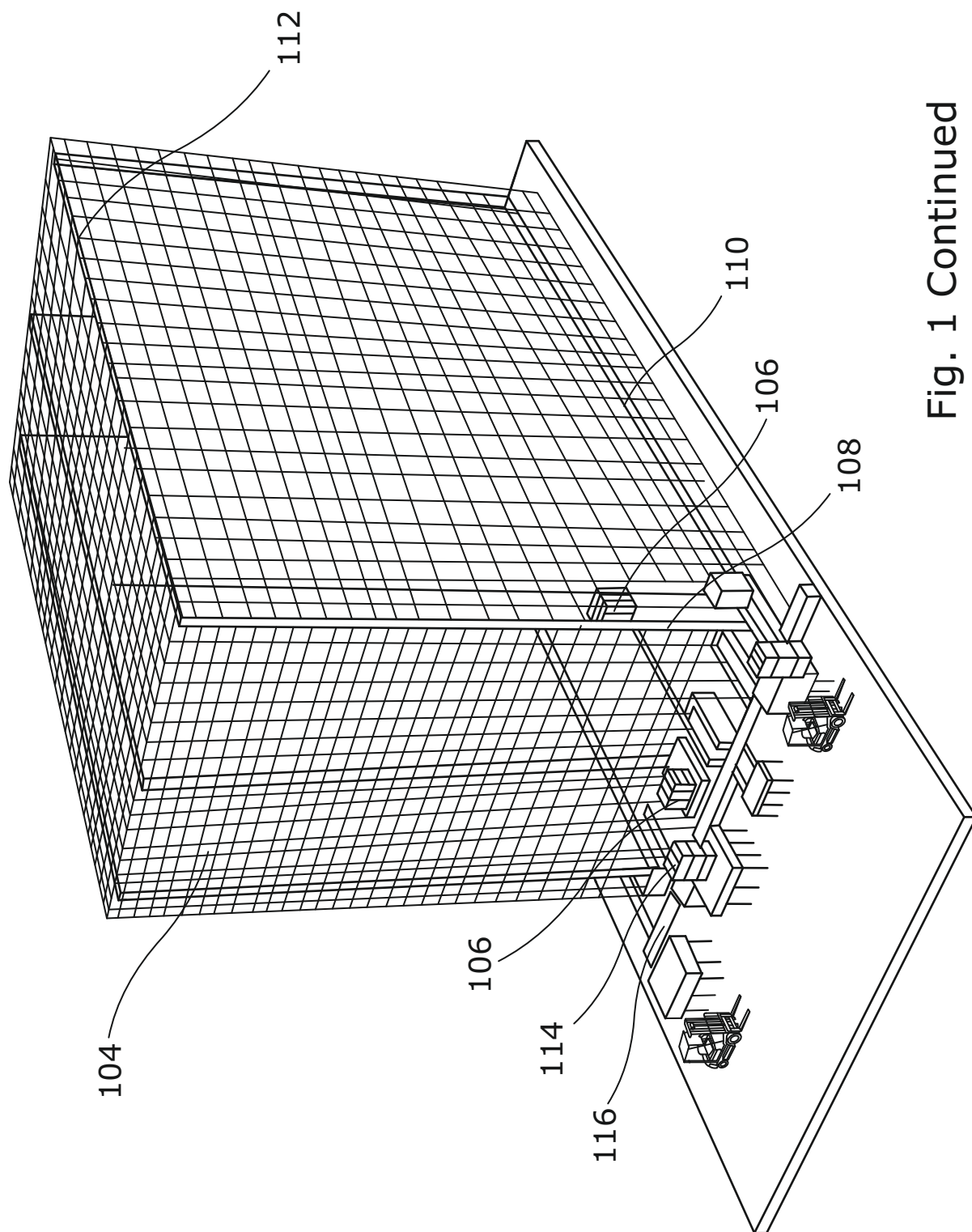


Fig. 1 Continued

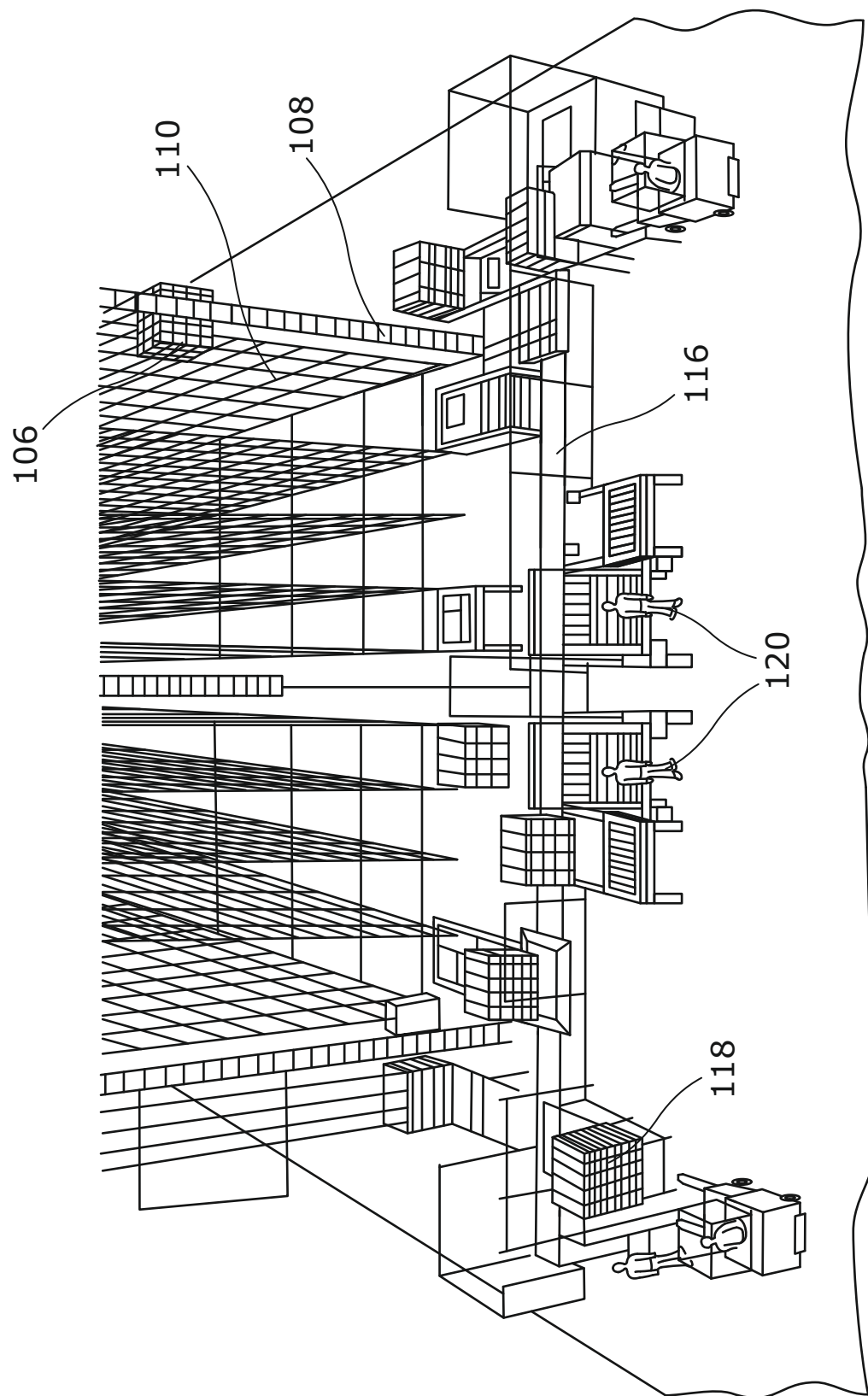


Fig. 1 Continued

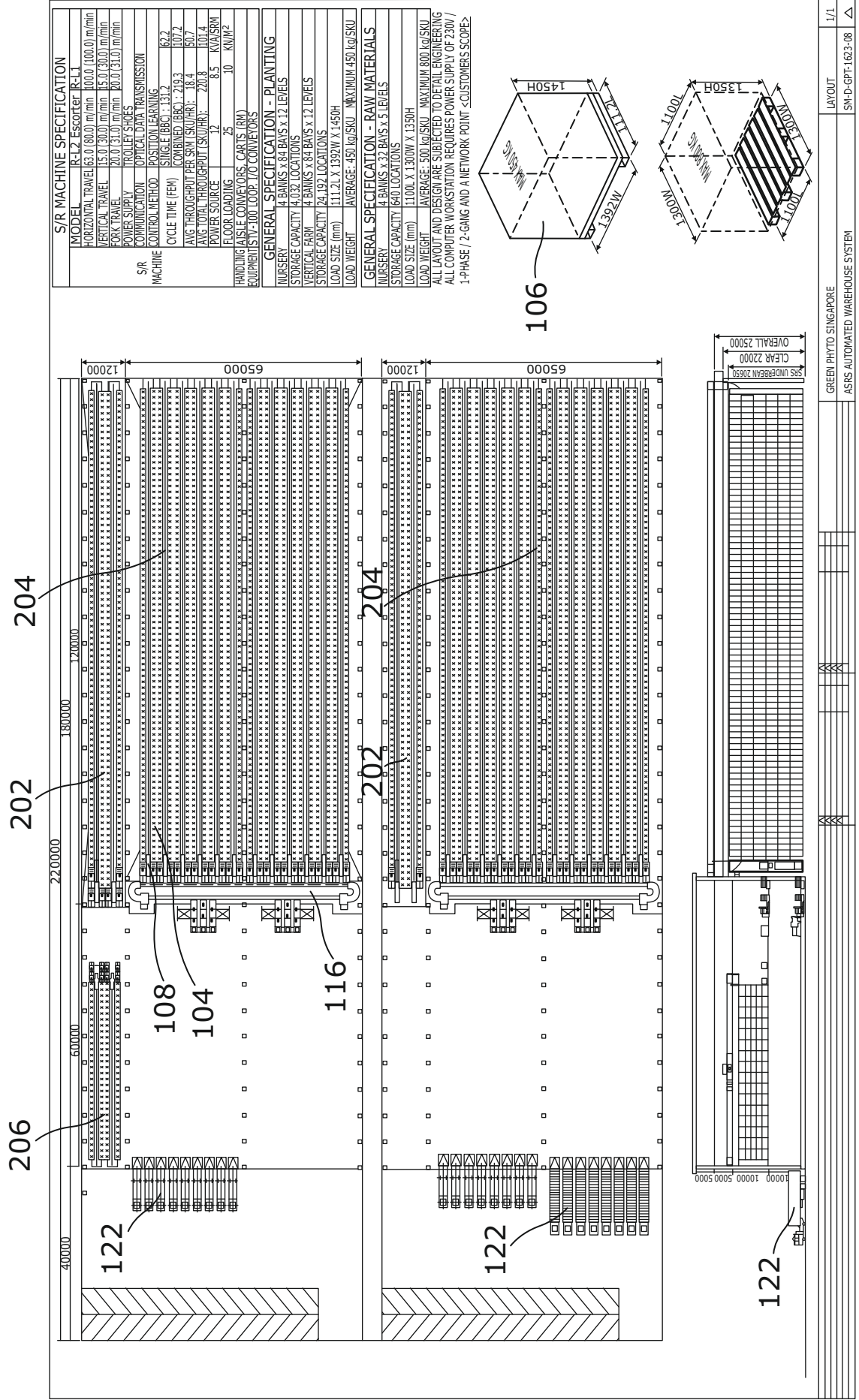


Fig. 2

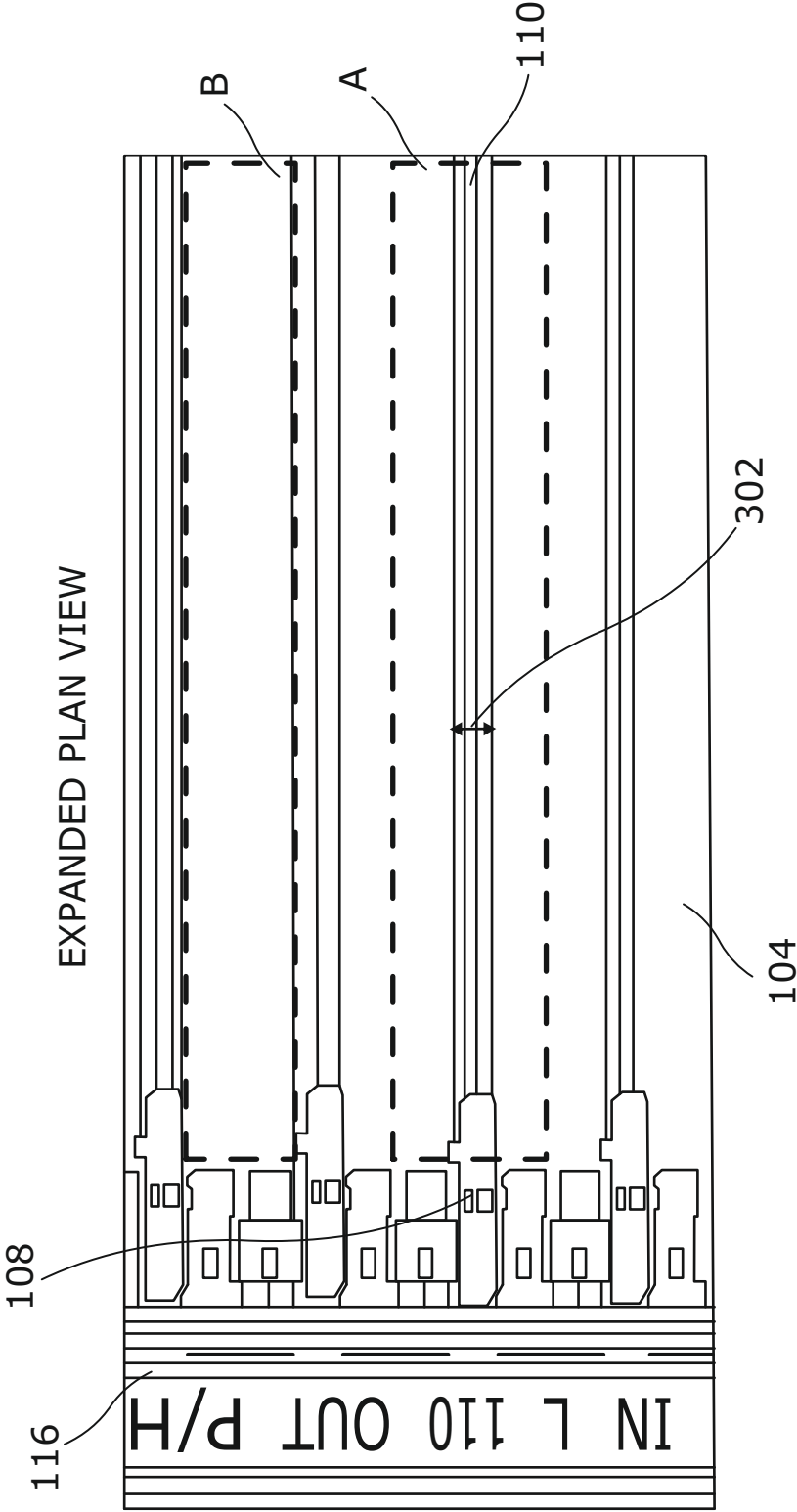


Fig. 3

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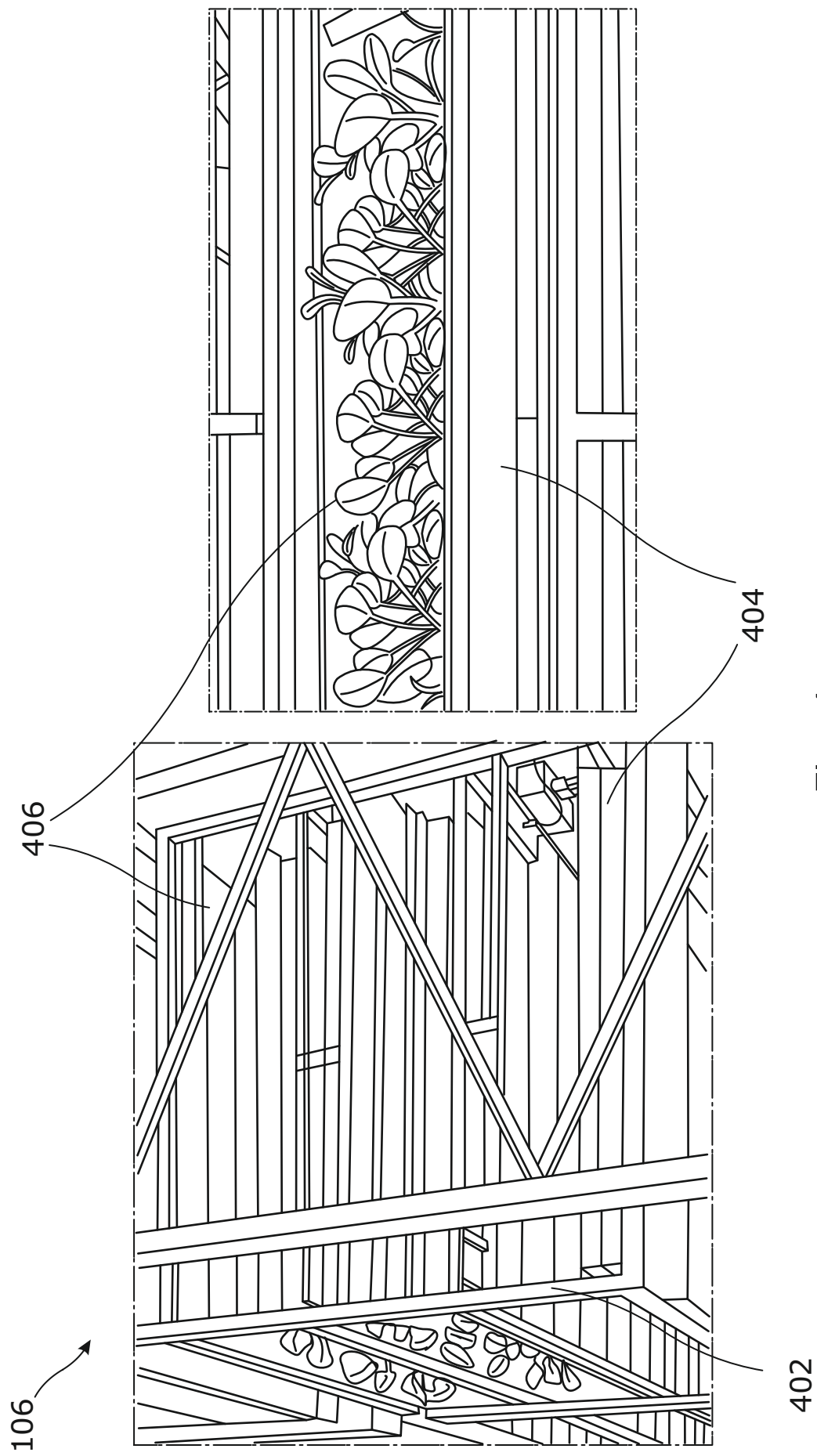


Fig. 4

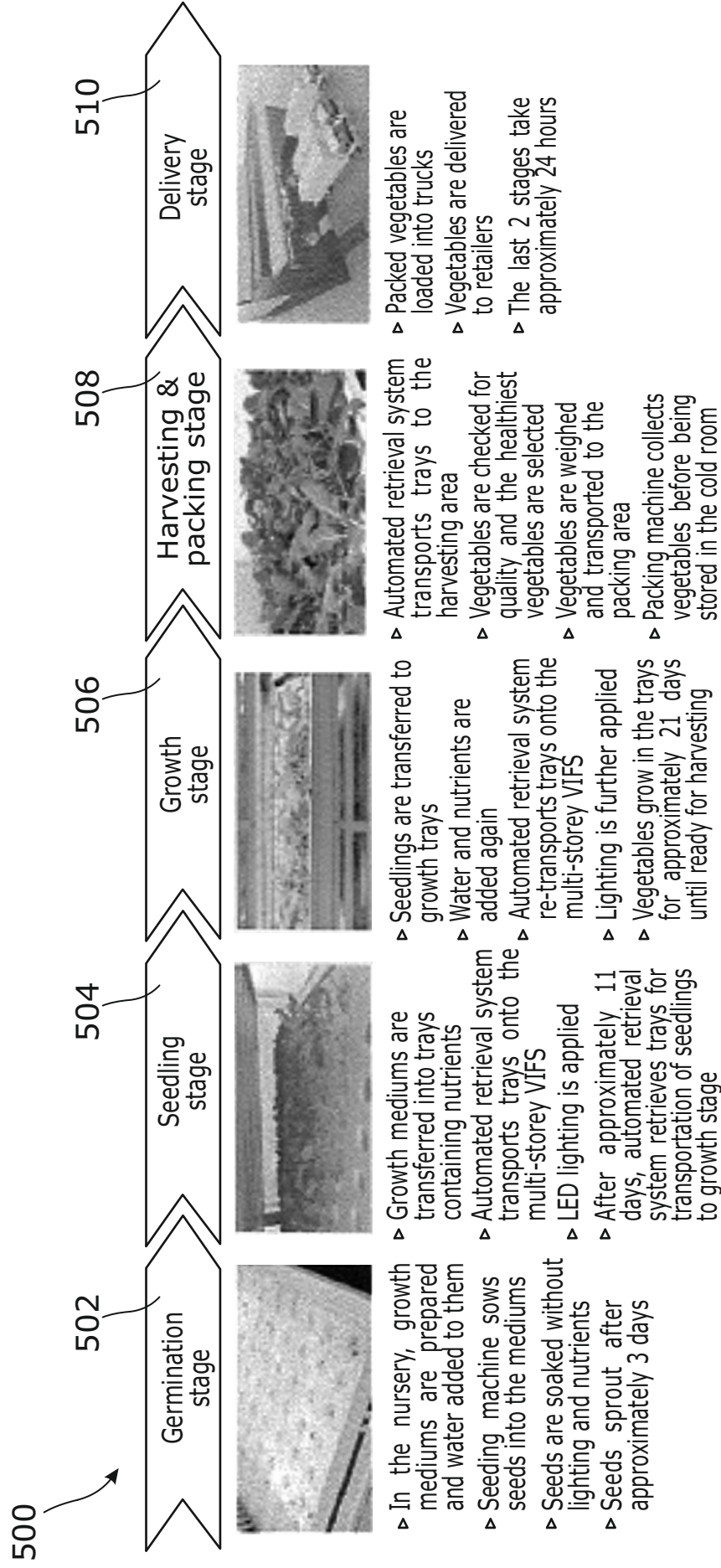


Fig. 5

System Overview/Components

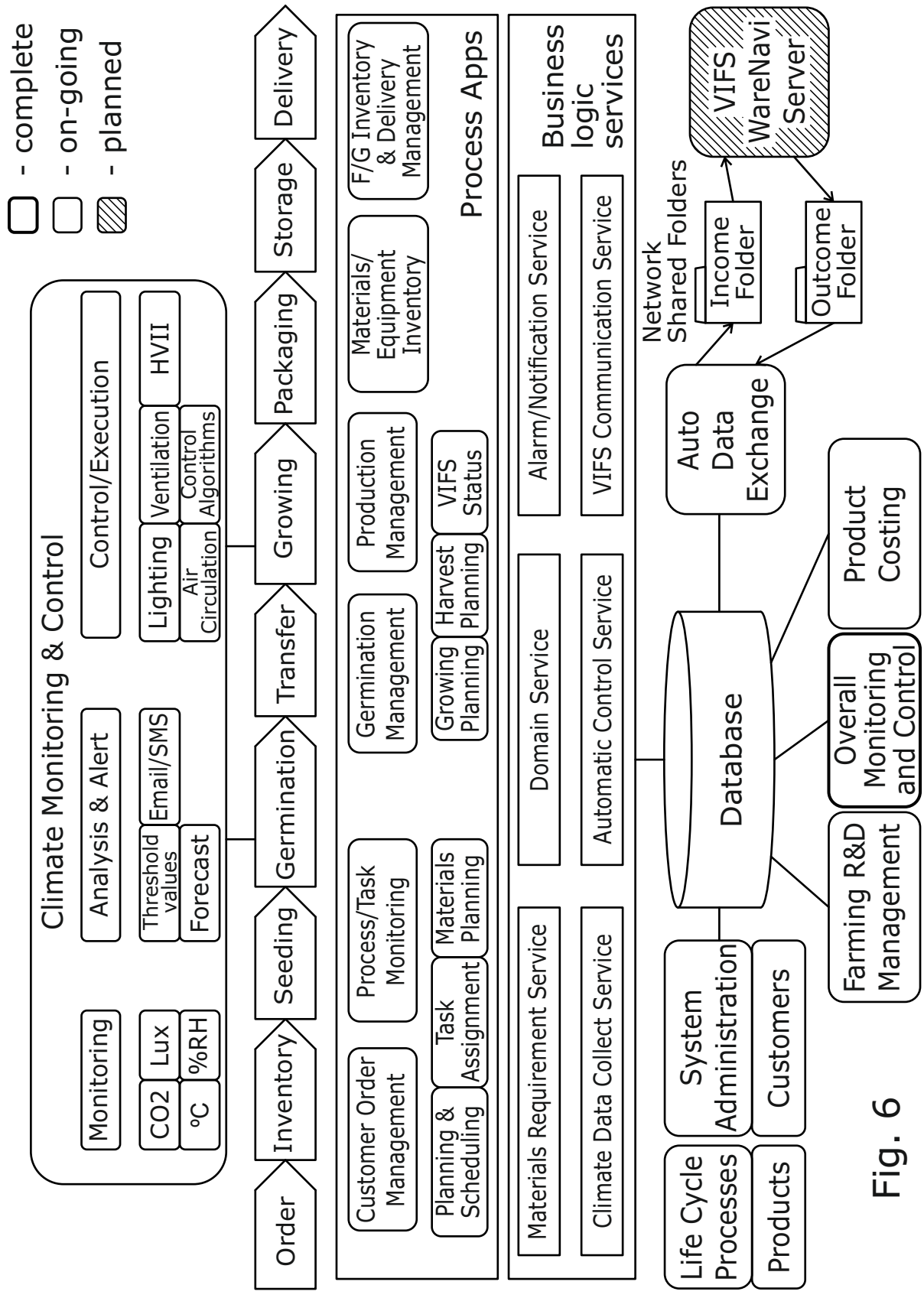


Fig. 6

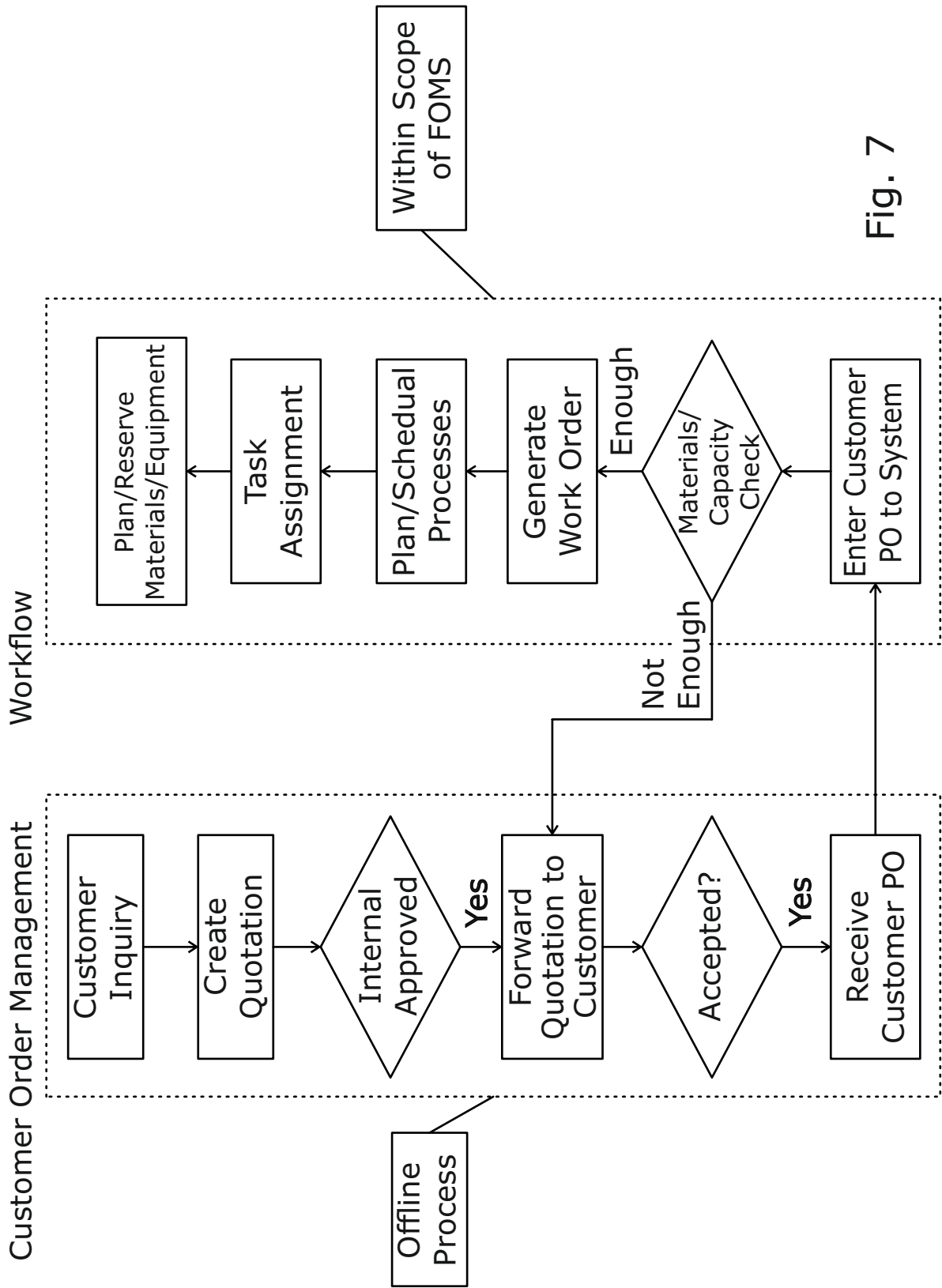


Fig. 7

Customer Order Management
Modules/Functions

Modules	Functions
Customer PO	• Enter customer PO • Enter delivery schedule
Work Order	• Consolidate/Generate Work Order • Monitor work order status • Schedule processes
Capacity Check	• Check warehouse capacity
Equipment /Raw Materials Reservations	• Make reservations • View reservations • Update reservations
Settings	

Fig. 8

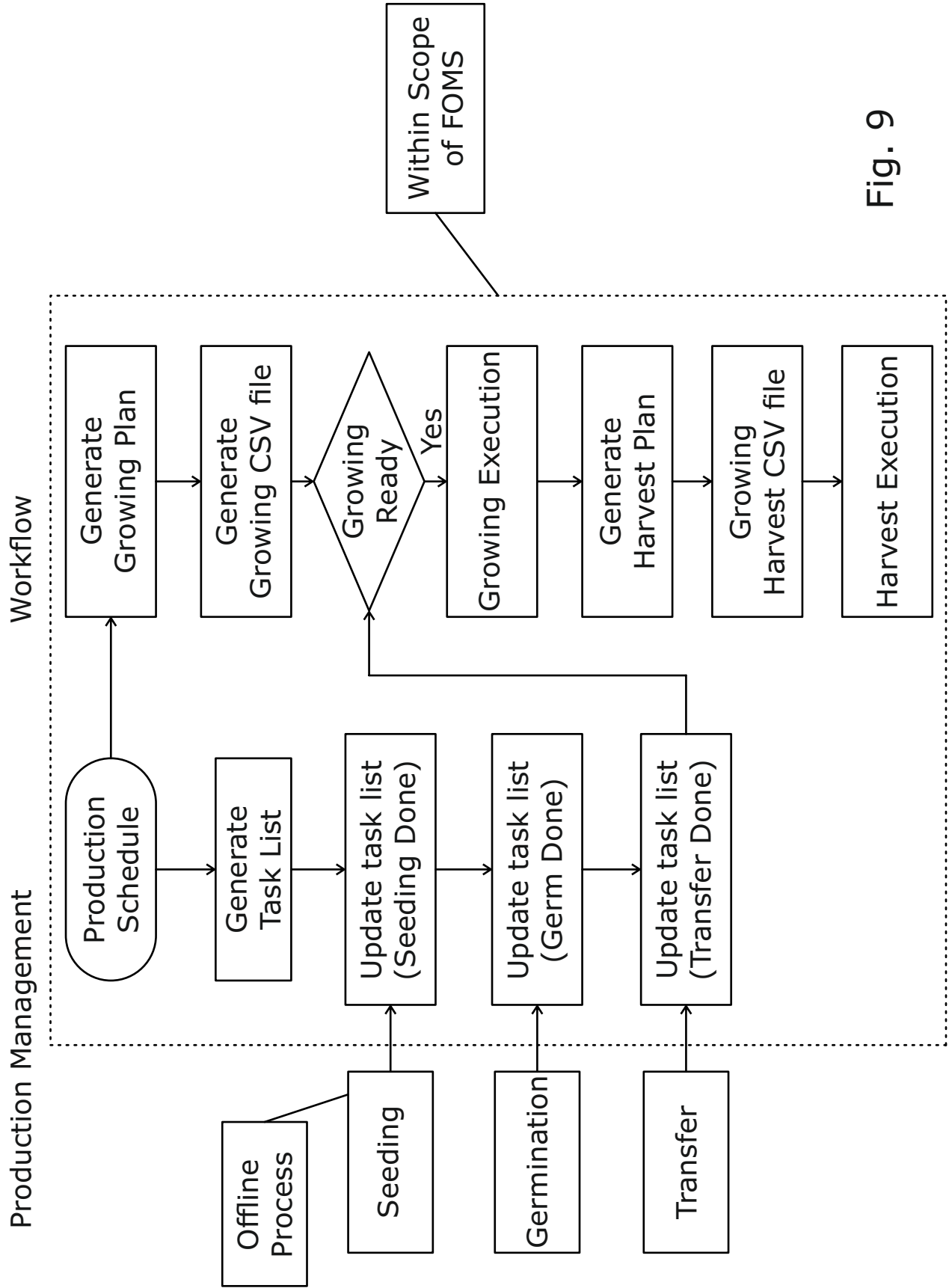


Fig. 9

Production Management

Modules/Functions

Modules	Functions
Growing Plan	• Generate growing plan • Generate CSV file • View storage locations
Harvest Plan	• Generate harvest plan • Generate CSV file
VIFS Warehouse Status	• View warehouse Status
Settings	

Fig. 10

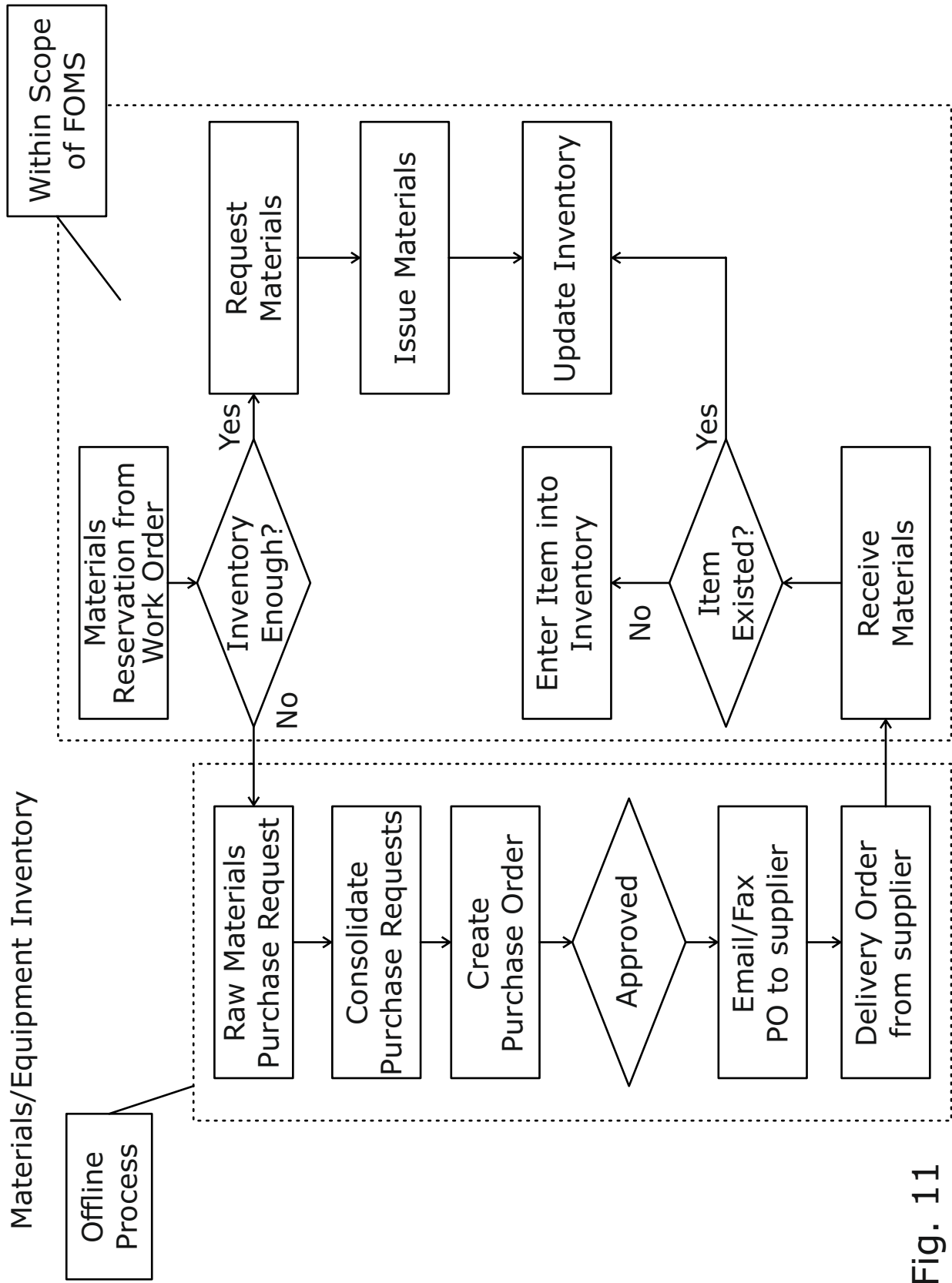


Fig. 11

Materials/Equipment Inventory

Modules/Functions

Modules	Functions
Material items	• Enter new items • View existing items
Receive Materials	• Receive goods from supplier • Update inventory
Materials Request	• View existing requests • Update quests
Issue Materials	• Issue raw materials to request • Update inventory
Capacity Management	• Seeding Machine • Transfer Machine • Packers • Drivers/Vehicles
Settings	

Fig. 12

Finish Goods Inventory

Workflow

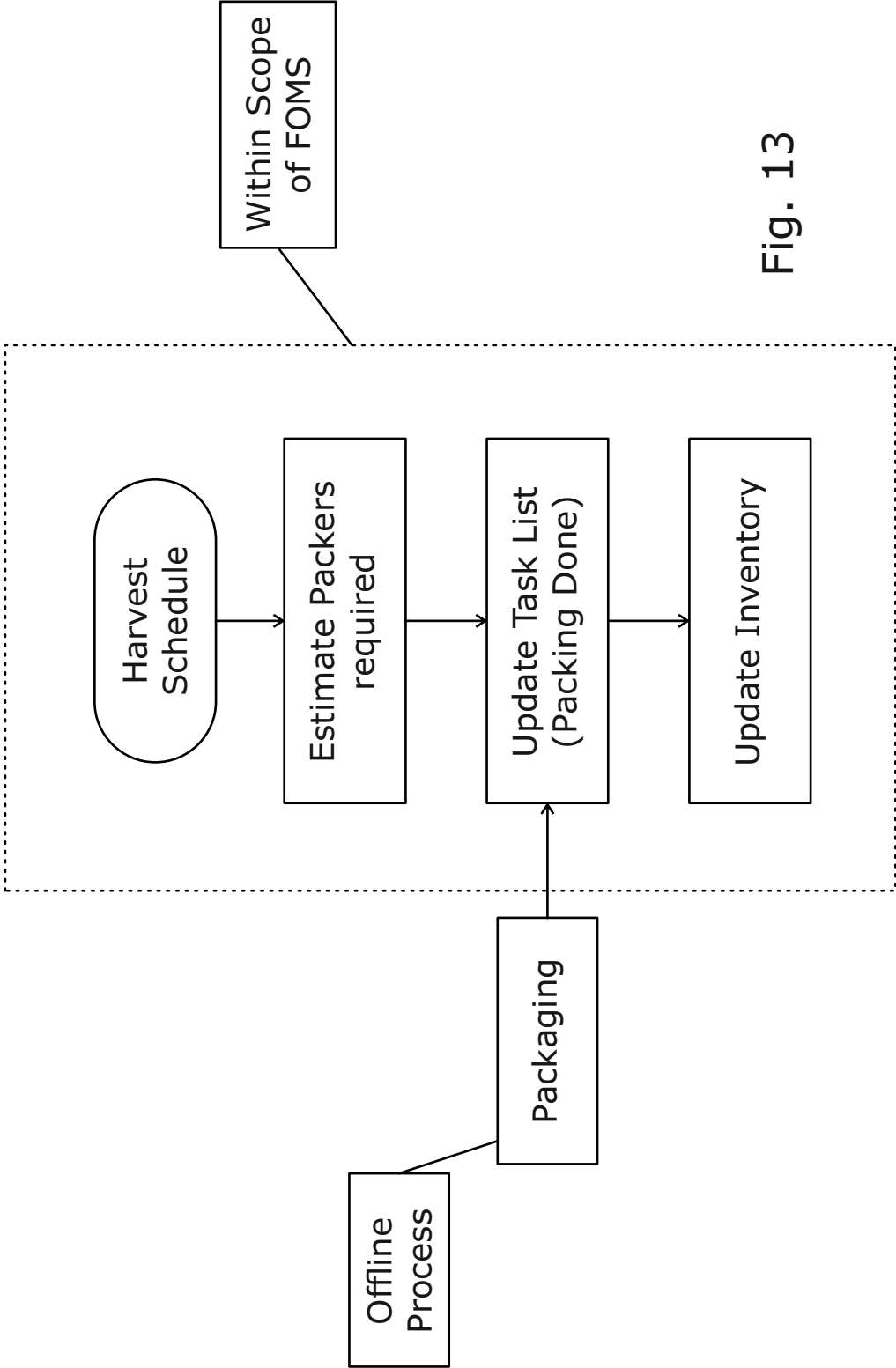


Fig. 13

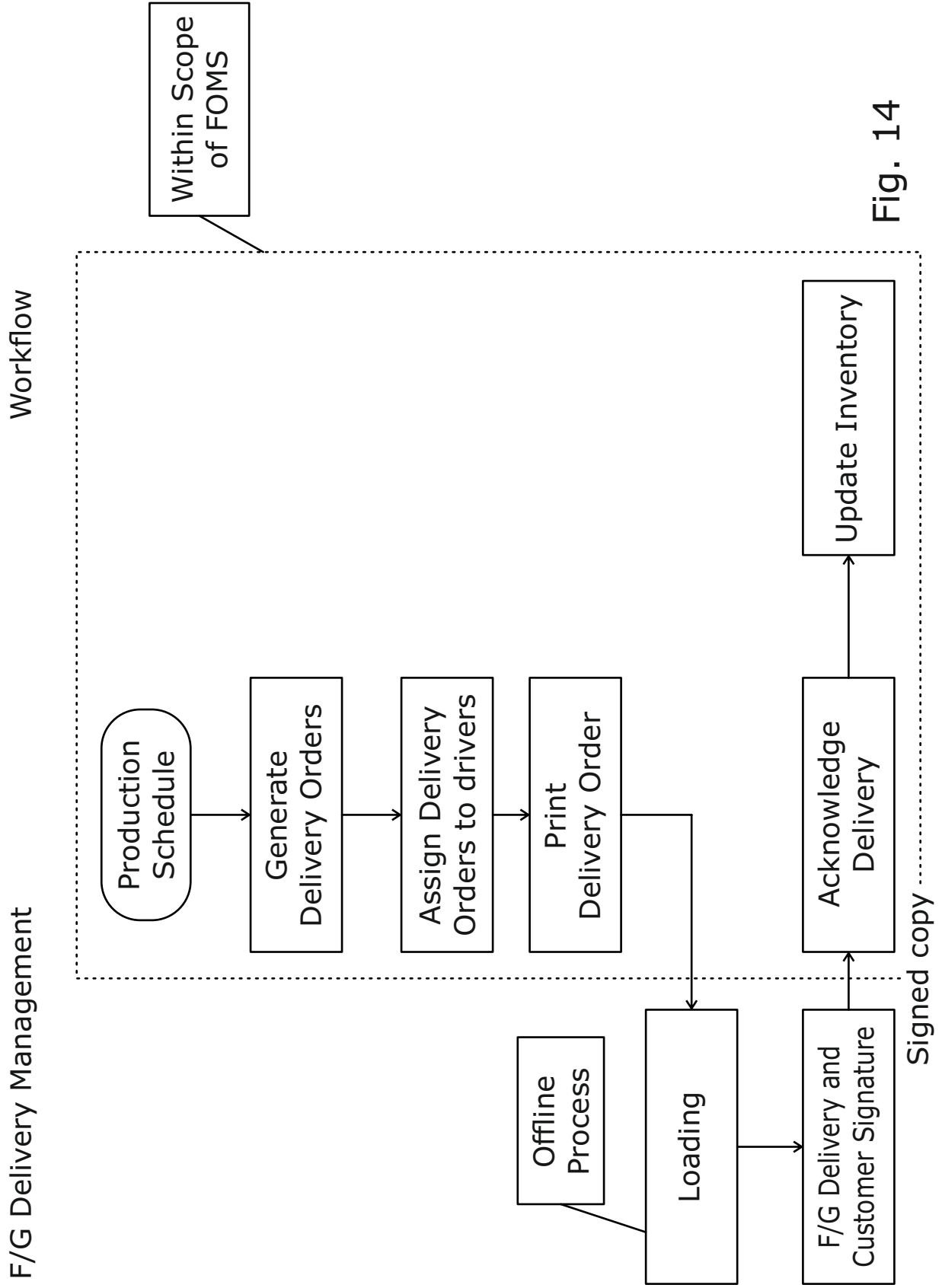


Fig. 14

Component 4:Delivery Management

Modules/Functions

Modules	Functions
Delivery Order	• Generate DO • Print DO • Acknowledge DO • Update Inventory
DO Assignment	• Assign DOs to drivers
Settings	

Fig. 15

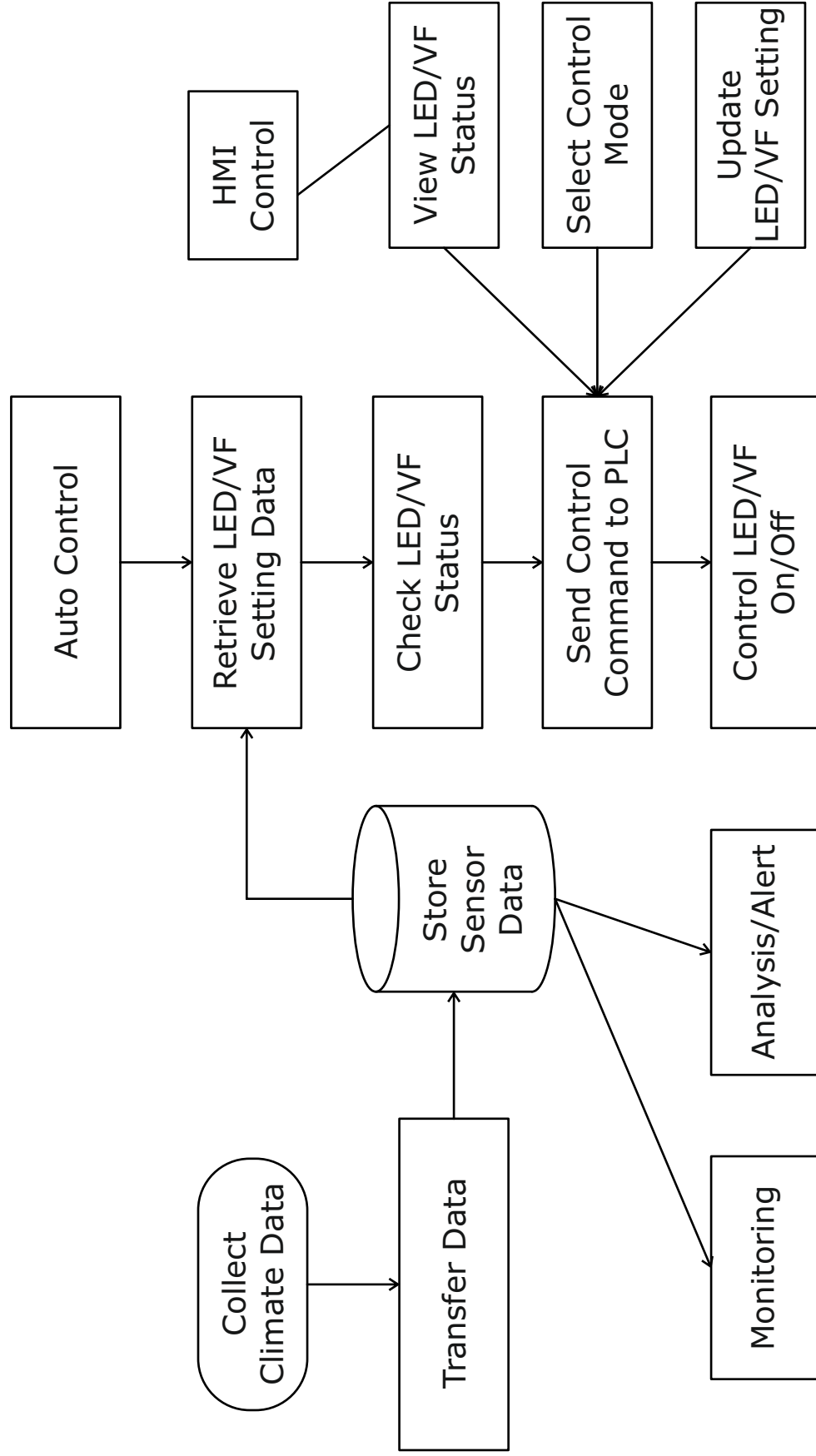


Fig. 16

Climate Monitoring/Control
Modules/Functions

Modules	Functions
Climate Monitoring	• Monitor light • Monitor Temp • Monitor Humidity • Monitor CO2
Climate Control	• Control lighting • Control Fan
Analysis/Alert	• Set threshold values • Send email/sms to users when sensor values go beyond threshold
Settings	

Fig. 17

Indoor Farming R&D Management
Modules/Functions

Modules	Functions
Research Project	• Project initiation • Experiments • PLC
Research Execution	• Records
Research Results	• Records
Settings	

Fig. 18

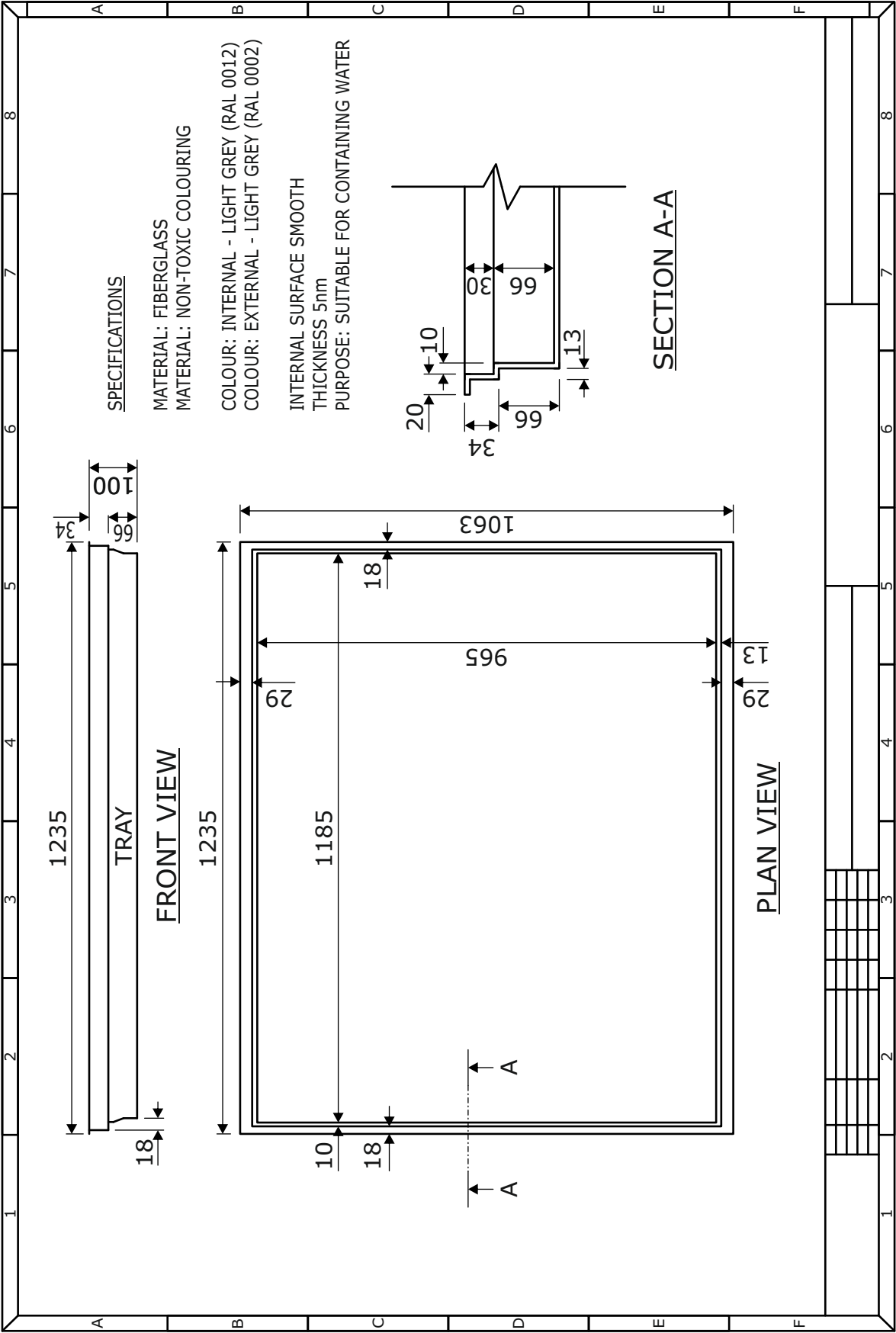
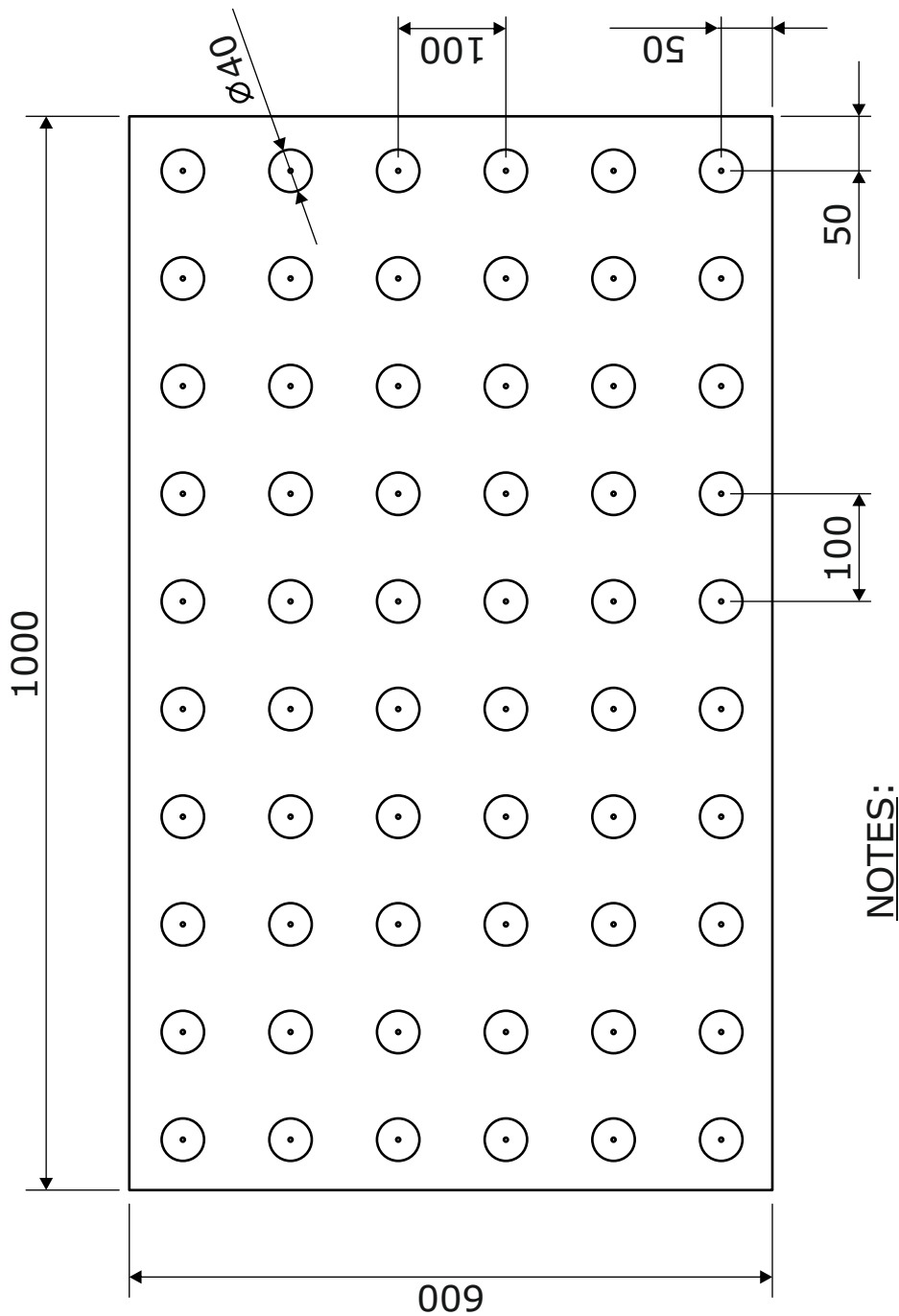


Fig. 19



Size: 1000mm(L) x 600mm(W) x 25mm(THK)

Hole Cutouts: 60 nos x 40mm Diameter

2pcs are needed for each growth tray

Fig. 20

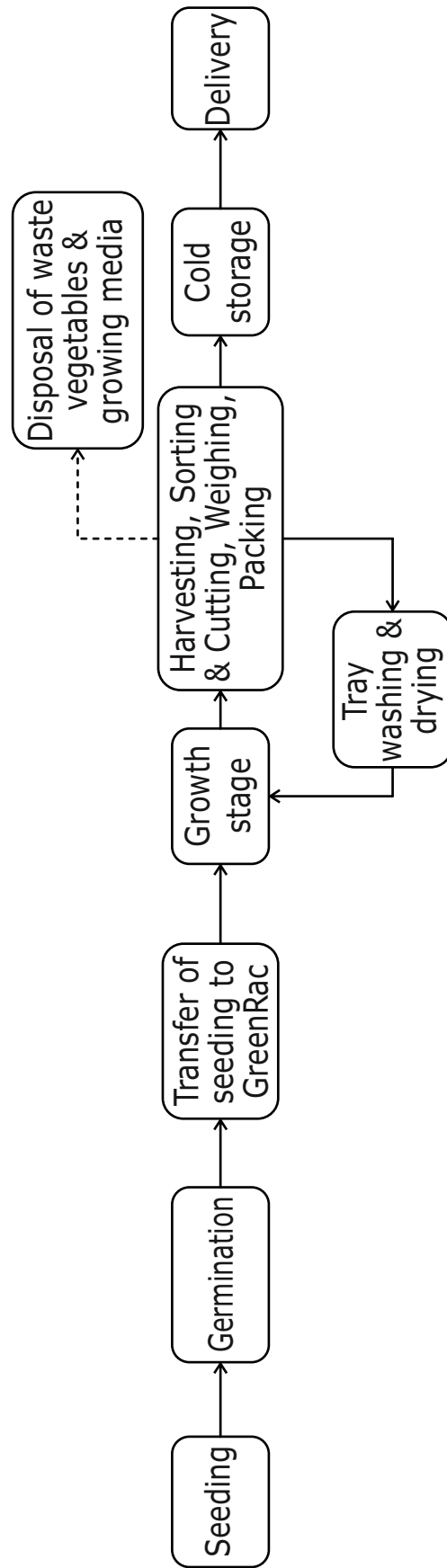


Fig. 21

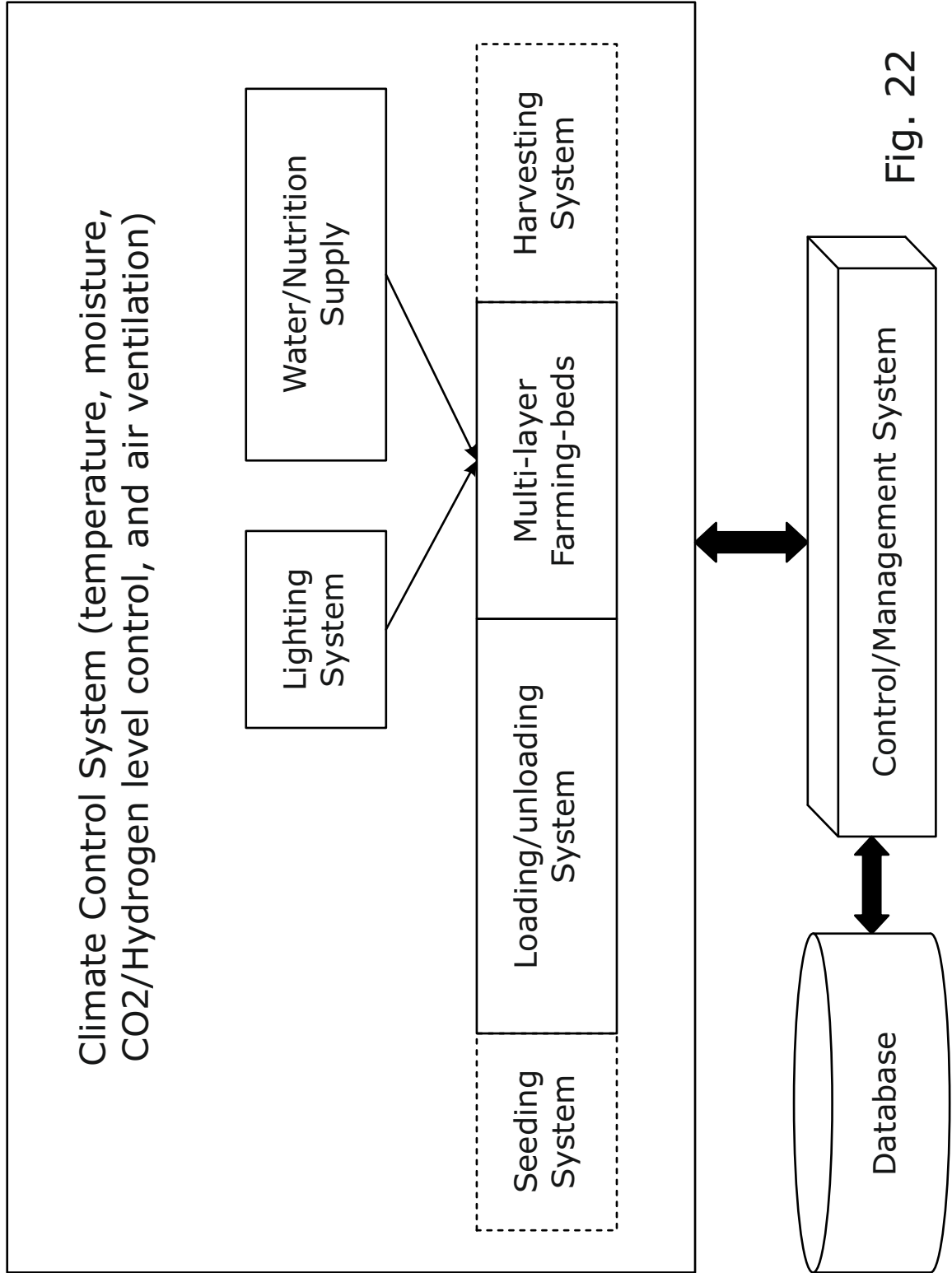


Fig. 22

Property	Value	Unit
☒ Density	7850	kg m ⁻³ ▼
☒ Isotropic Secant Coefficient of Thermal Expansion		
☒ Isotropic Elasticity		
☒ Alternating Stress Mean Stress	☐ Tabular	
☒ Strain-Life Parameters		
☒ Tensile Yield Strength	2.5E + 00	Pa ▼
☒ Comprehensive Yield Strength	2.5E + 00	Pa ▼
☒ Tensile Ultimate Strength	4.5E + 00	Pa ▼
☒ Comprehensive Ultimate Strength	0	Pa ▼

Fig. 23(a) Cage material properties

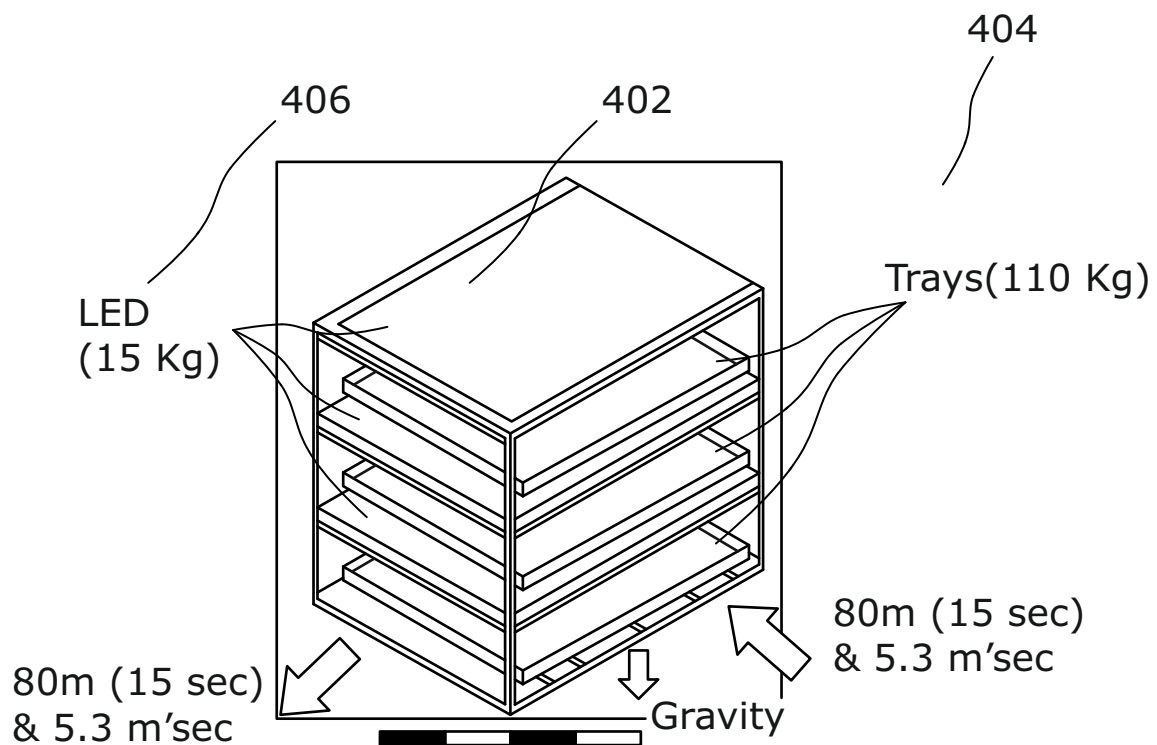


Fig. 23(b) Boundary Conditions

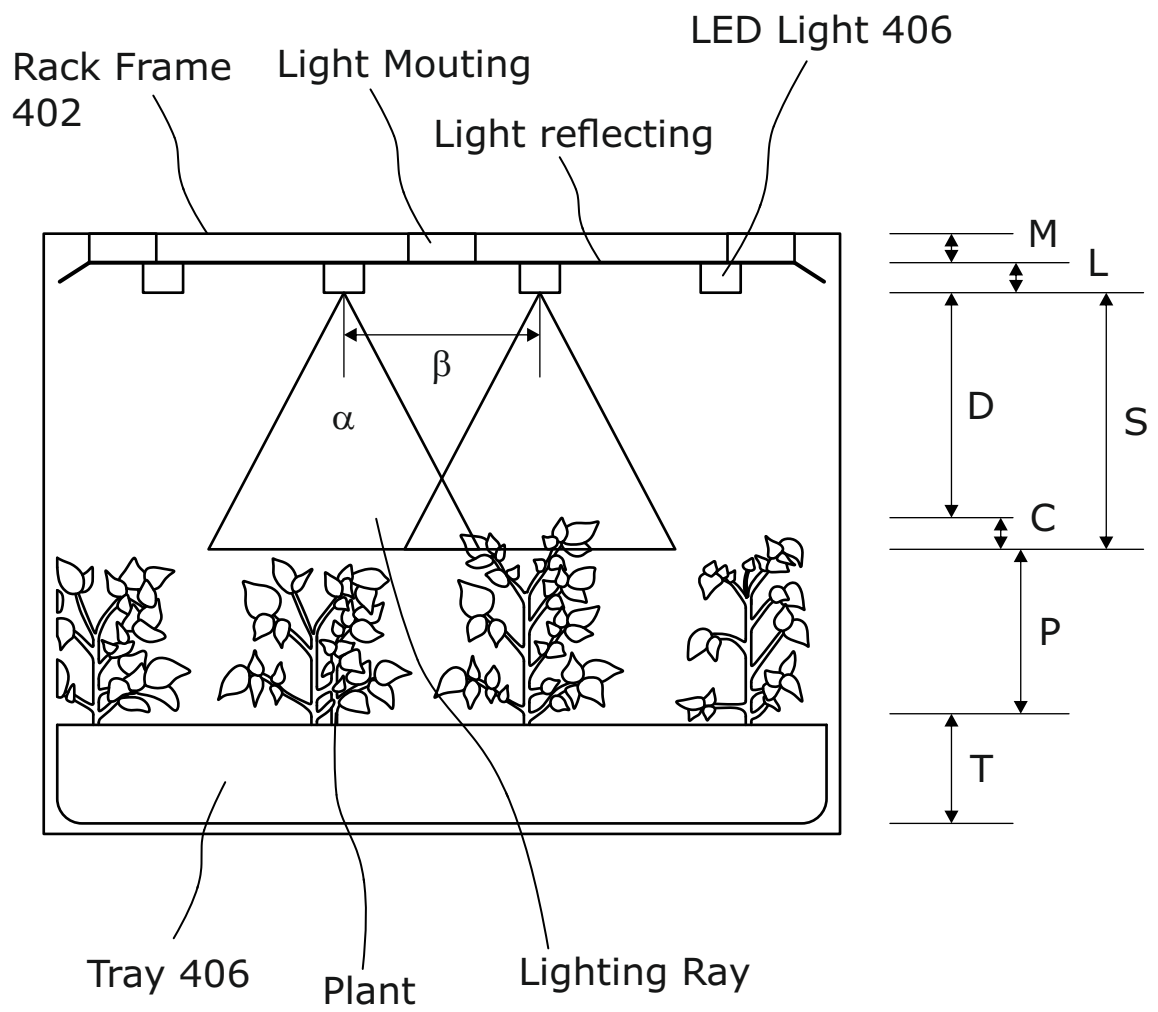


Fig. 24

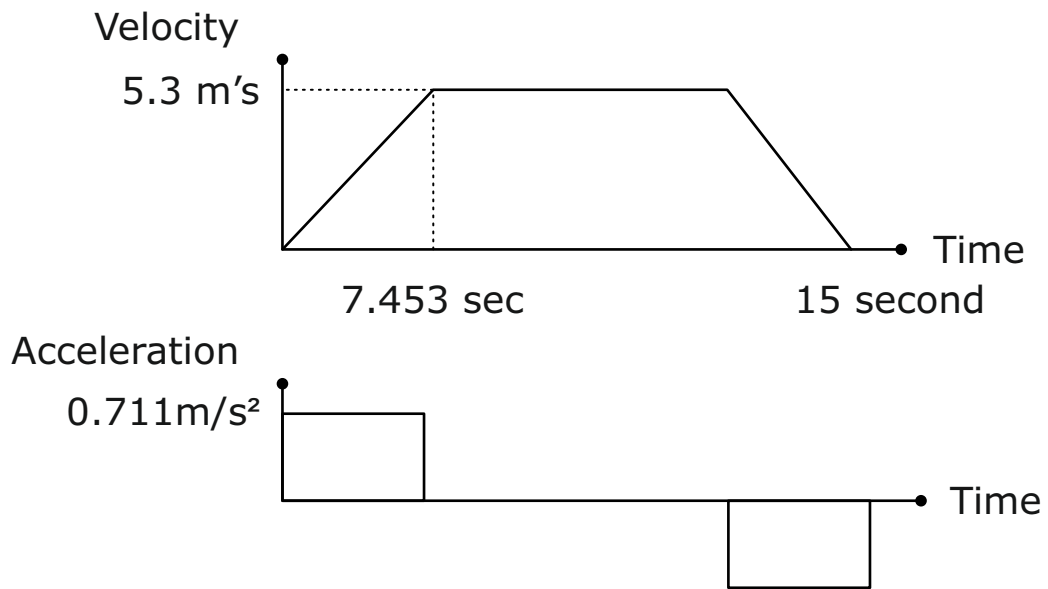


Fig. 25(a) Cage acceleration and speed

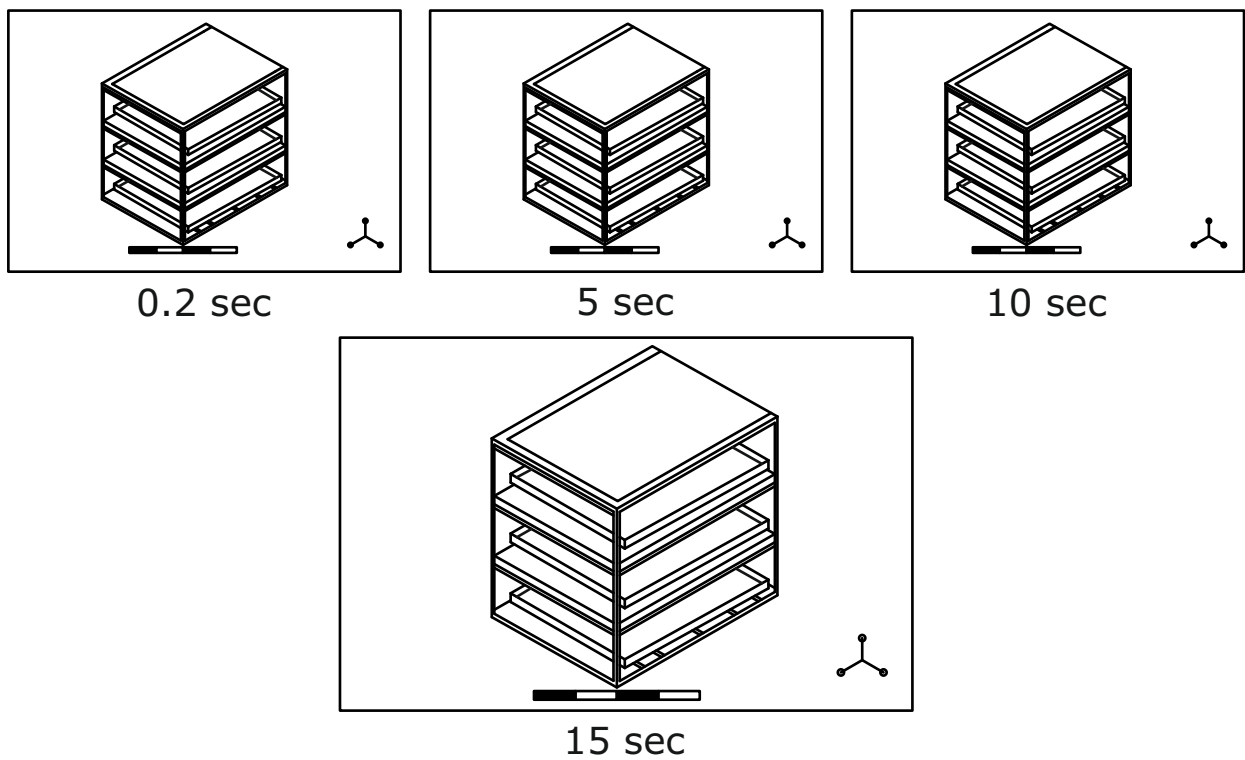


Fig. 25(b) Dynamic analysis results at cage movement cycle