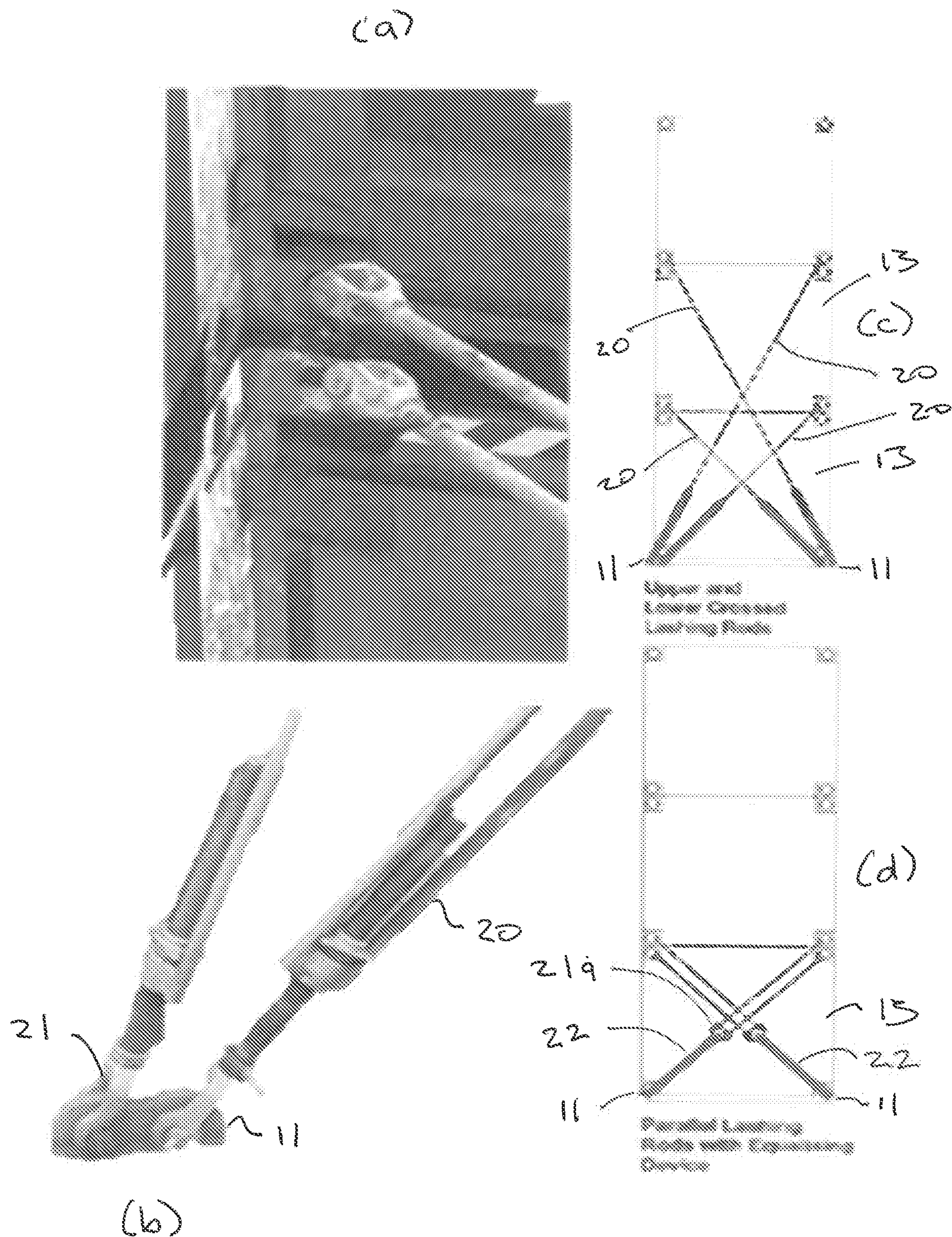




FIG. 1



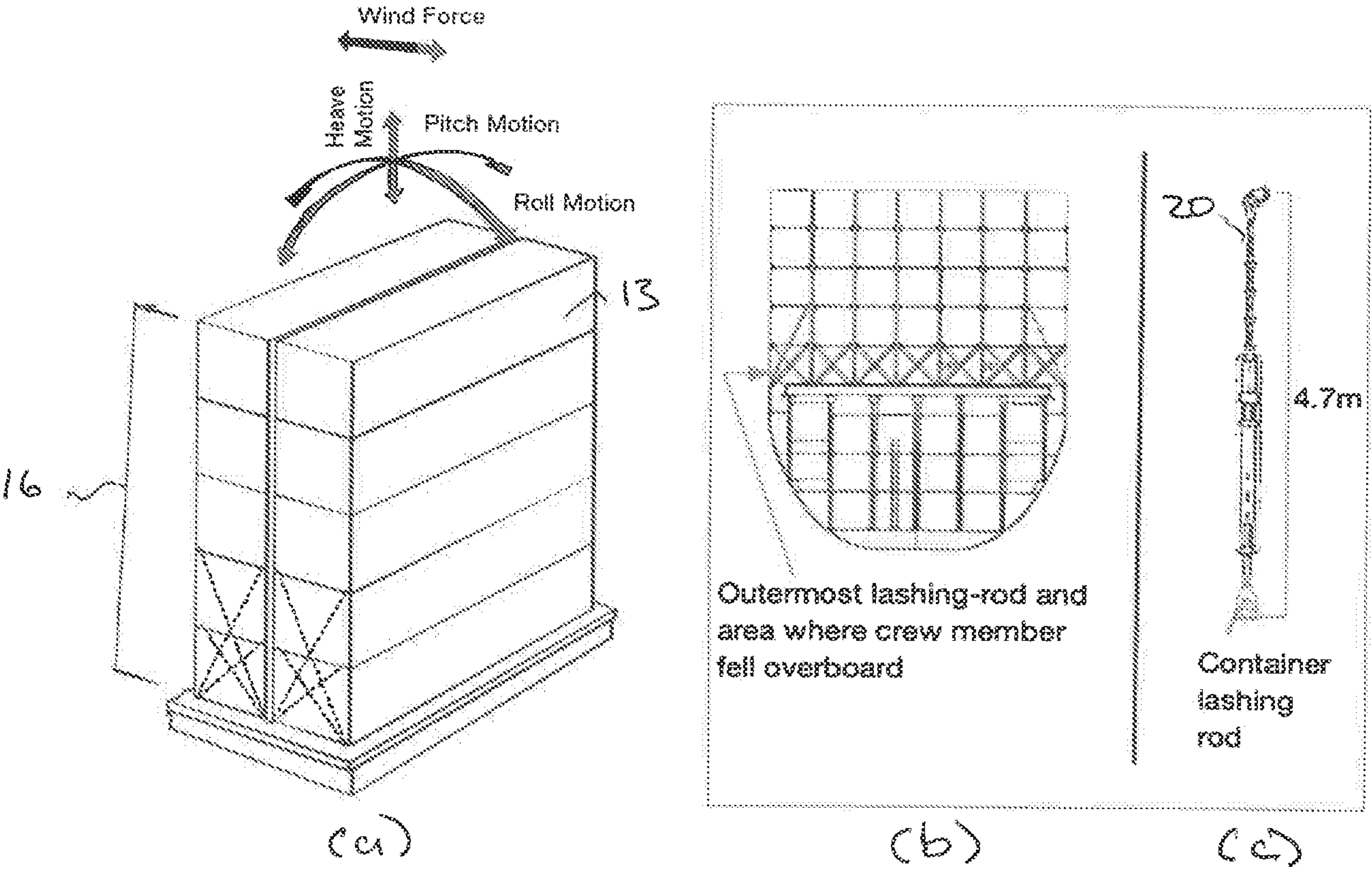
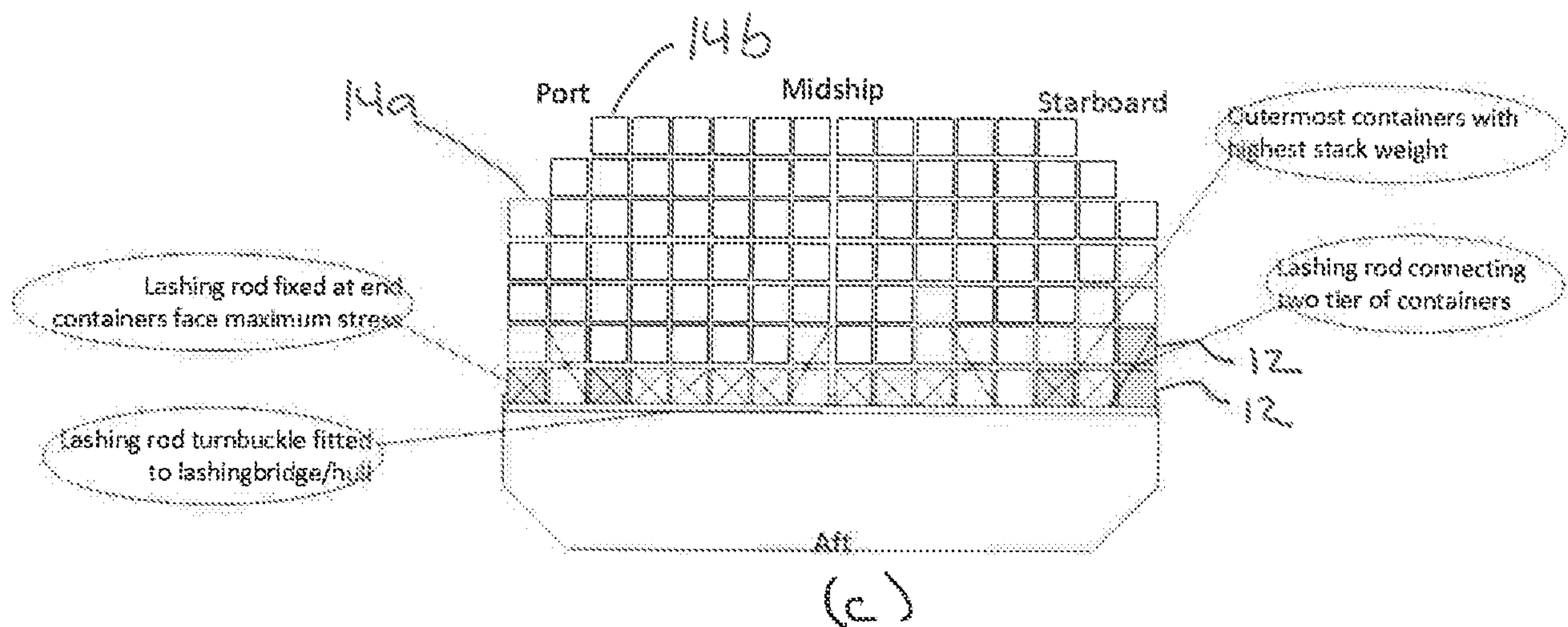
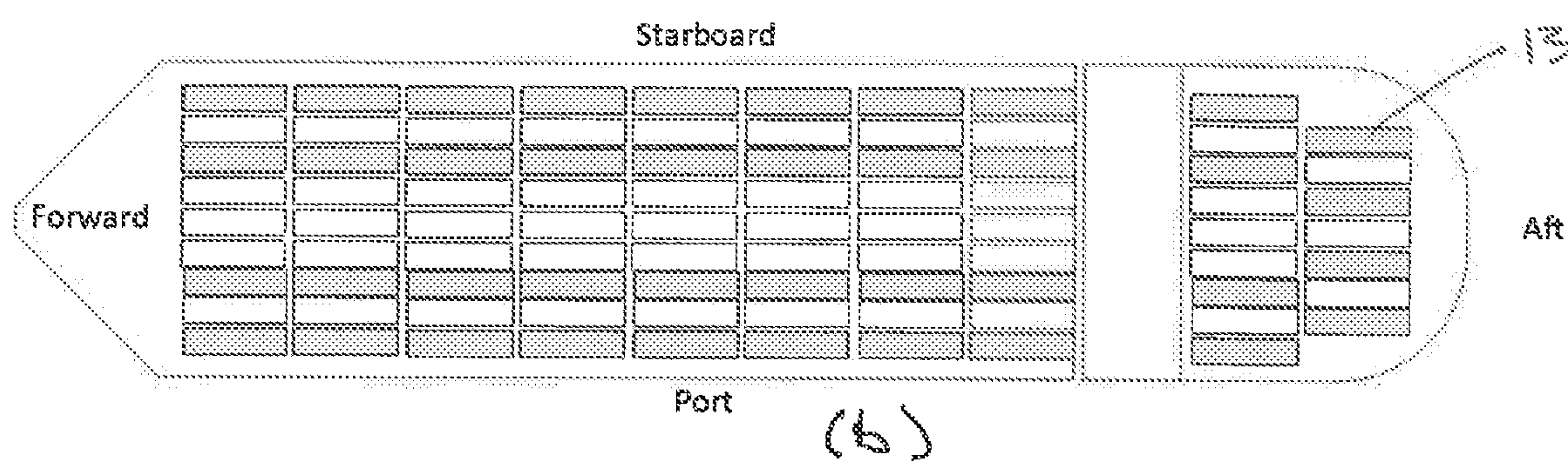
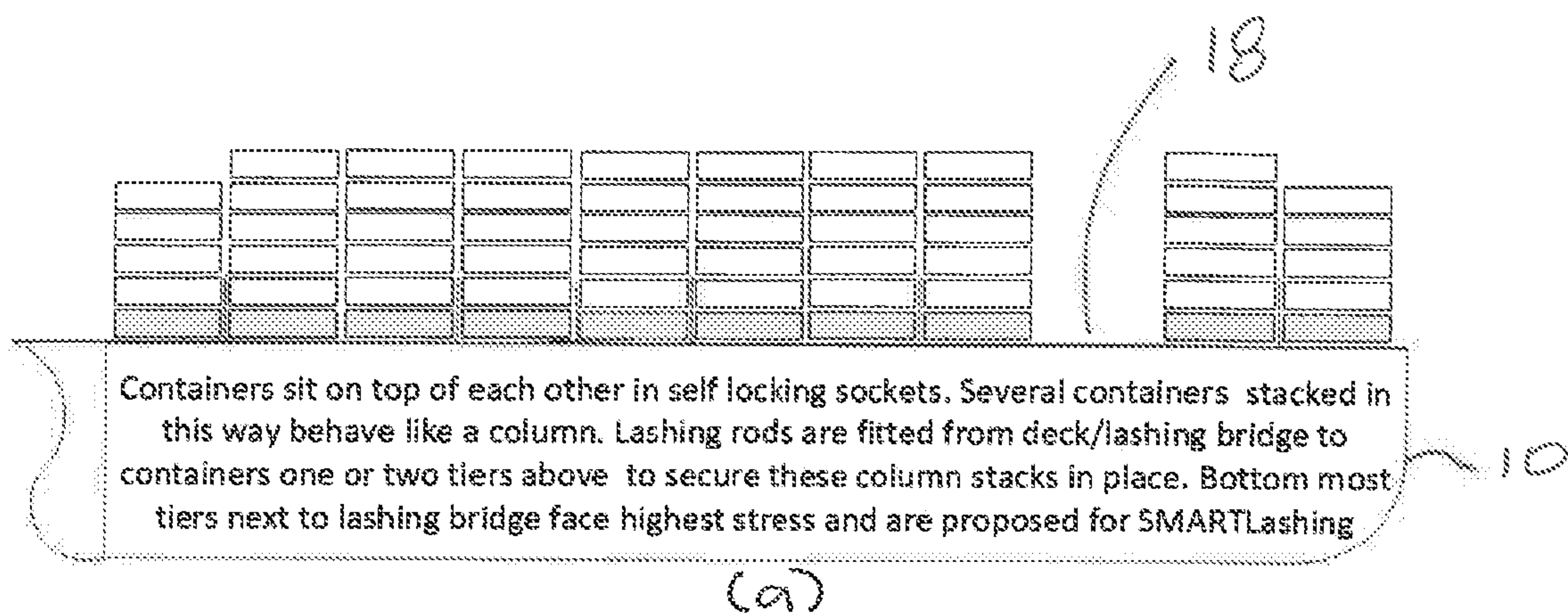


FIG. 3



Schematic layout for containers fitted with SMARTLashing system

FIG. 4

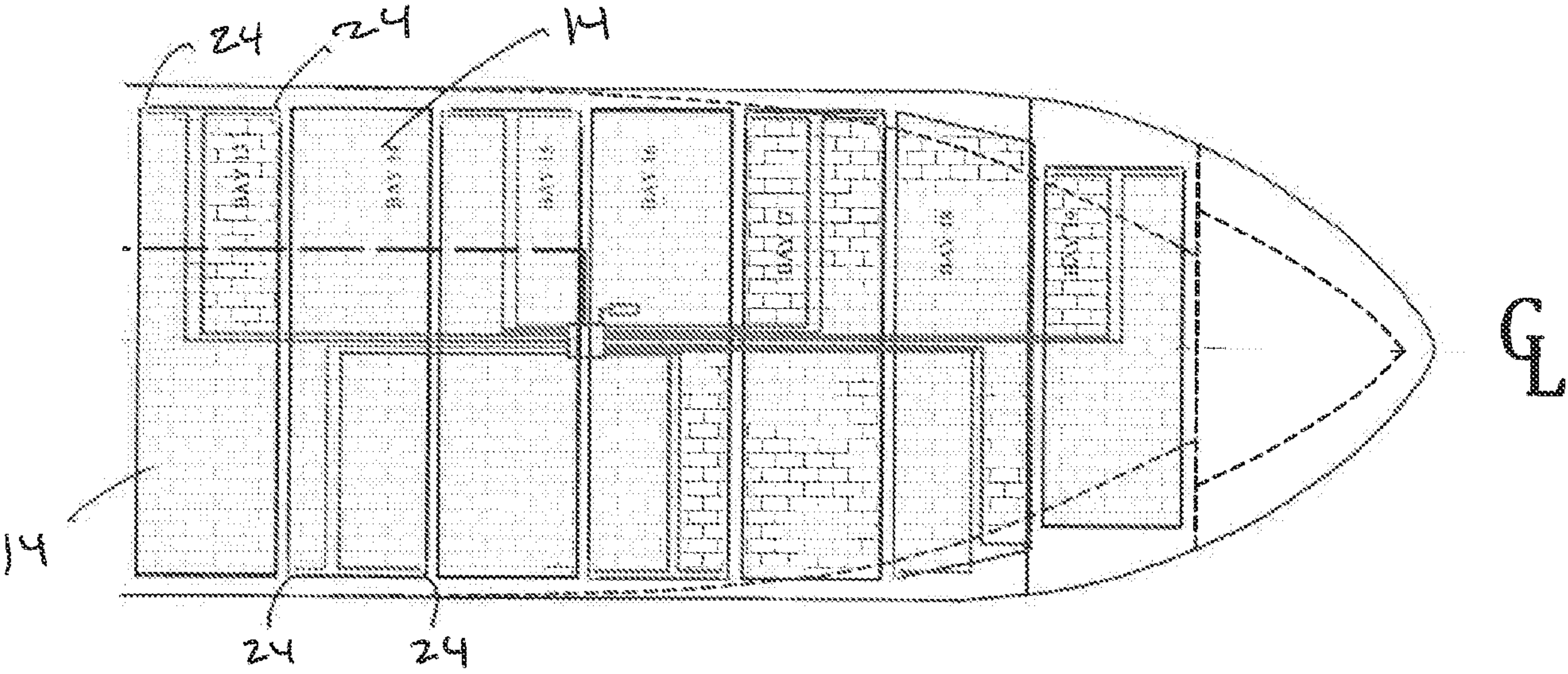


FIG. 5(a)

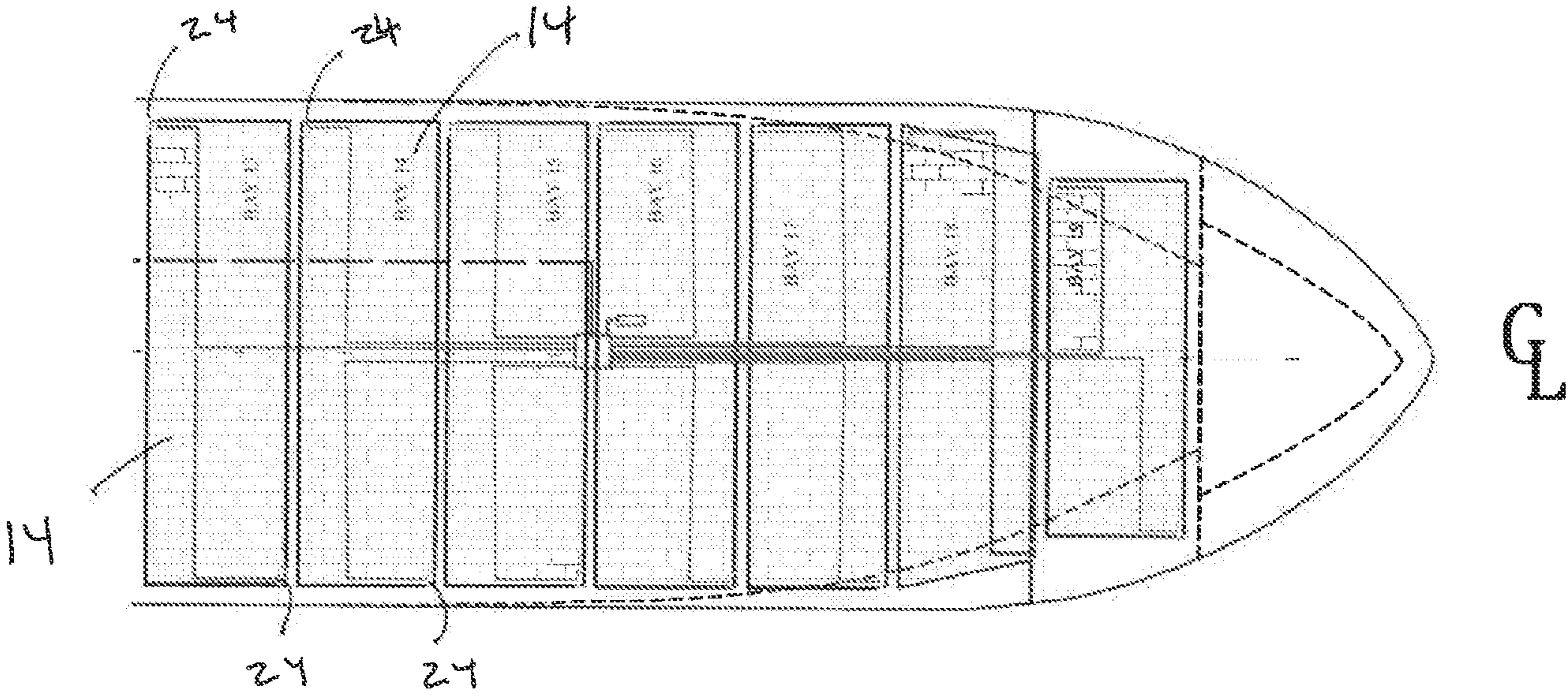


FIG. 5(b)

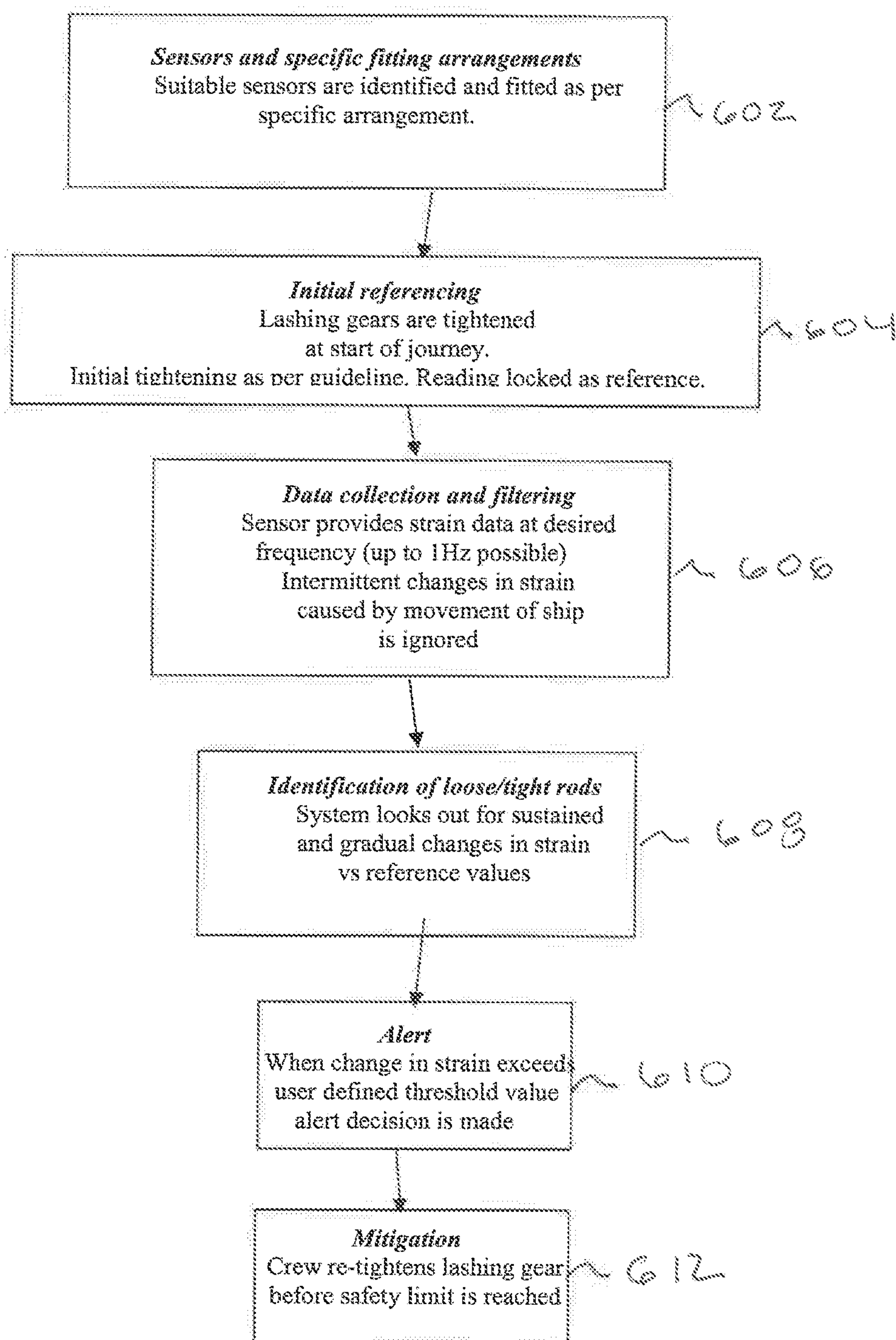


FIG. 6

Sensors measures
change in wavelength of
incident light

Separate temperature
sensor measures change
in wavelength due to
temperature

After compensating
from temperature, the
strain in lashing rod due
to vessel movements in
accurately measured

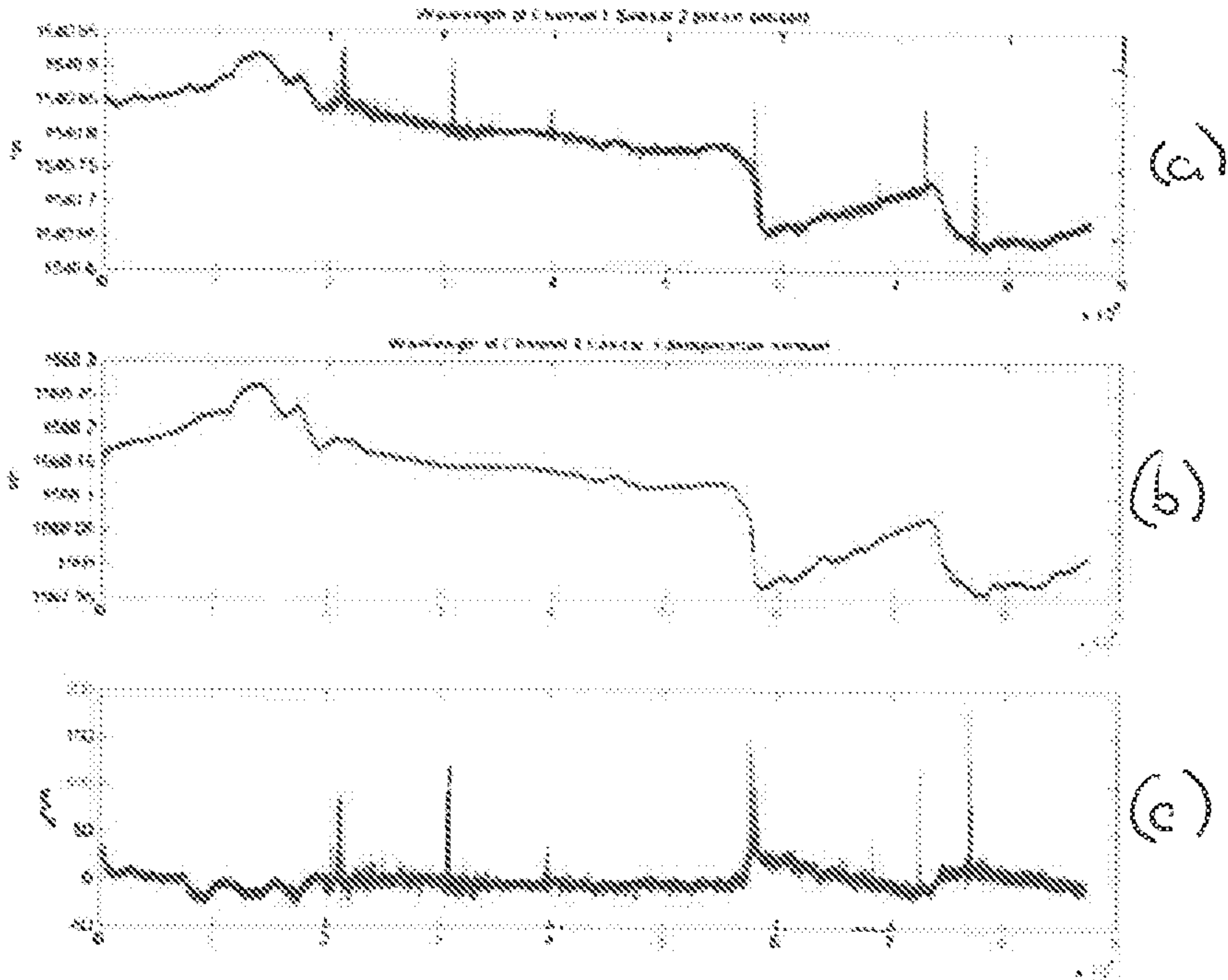


FIG. 7

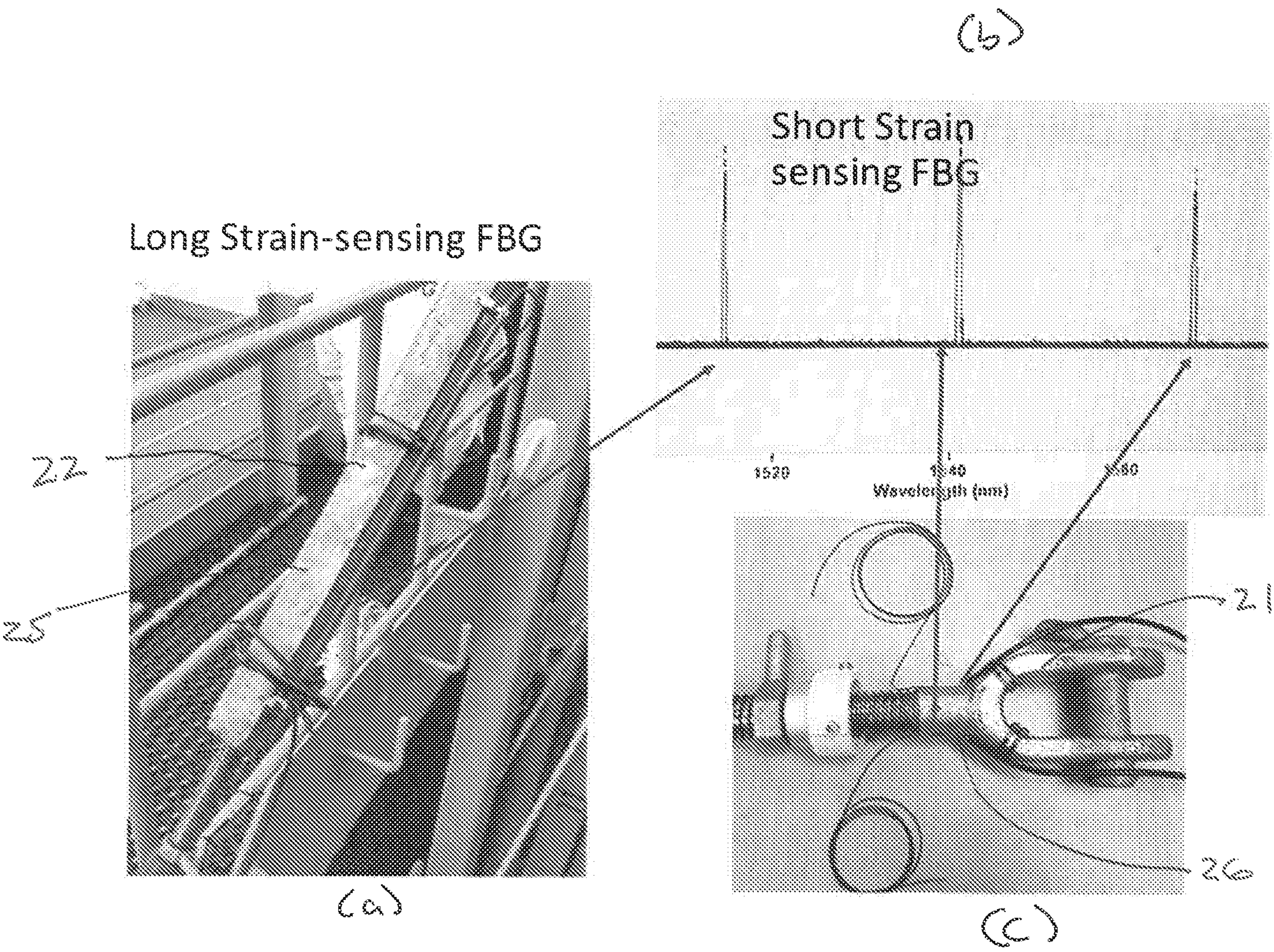


FIG. 8

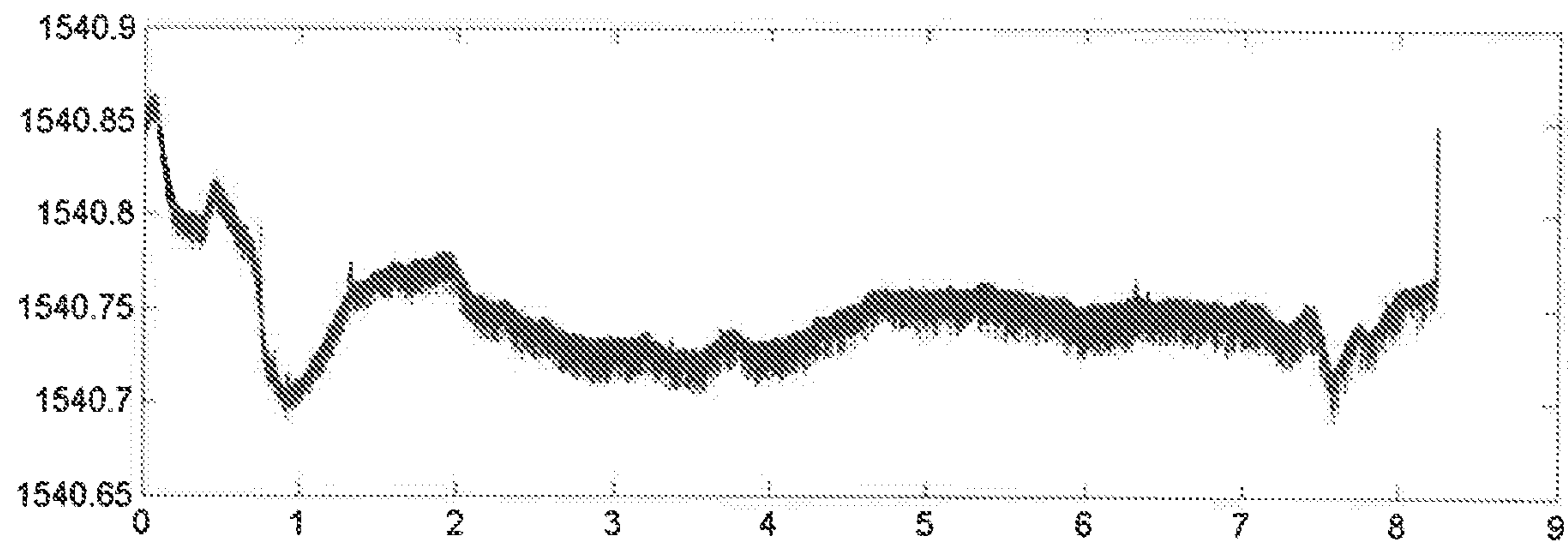


FIG. 9(a)

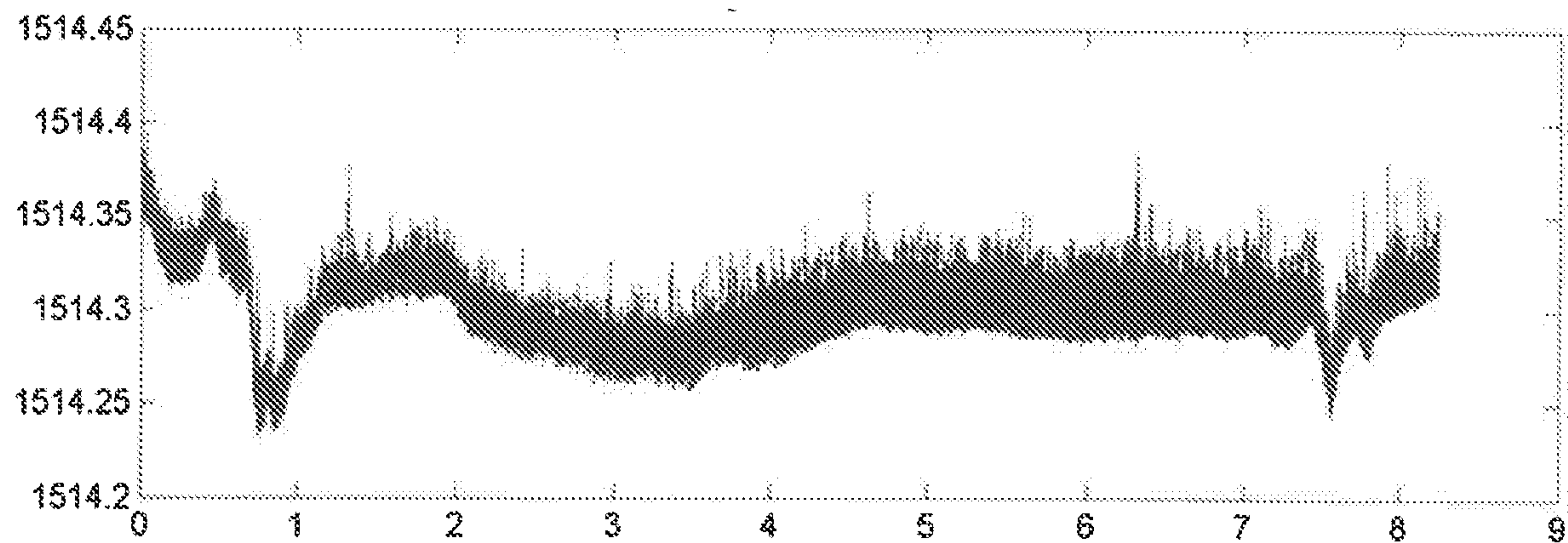


FIG. 9(b)

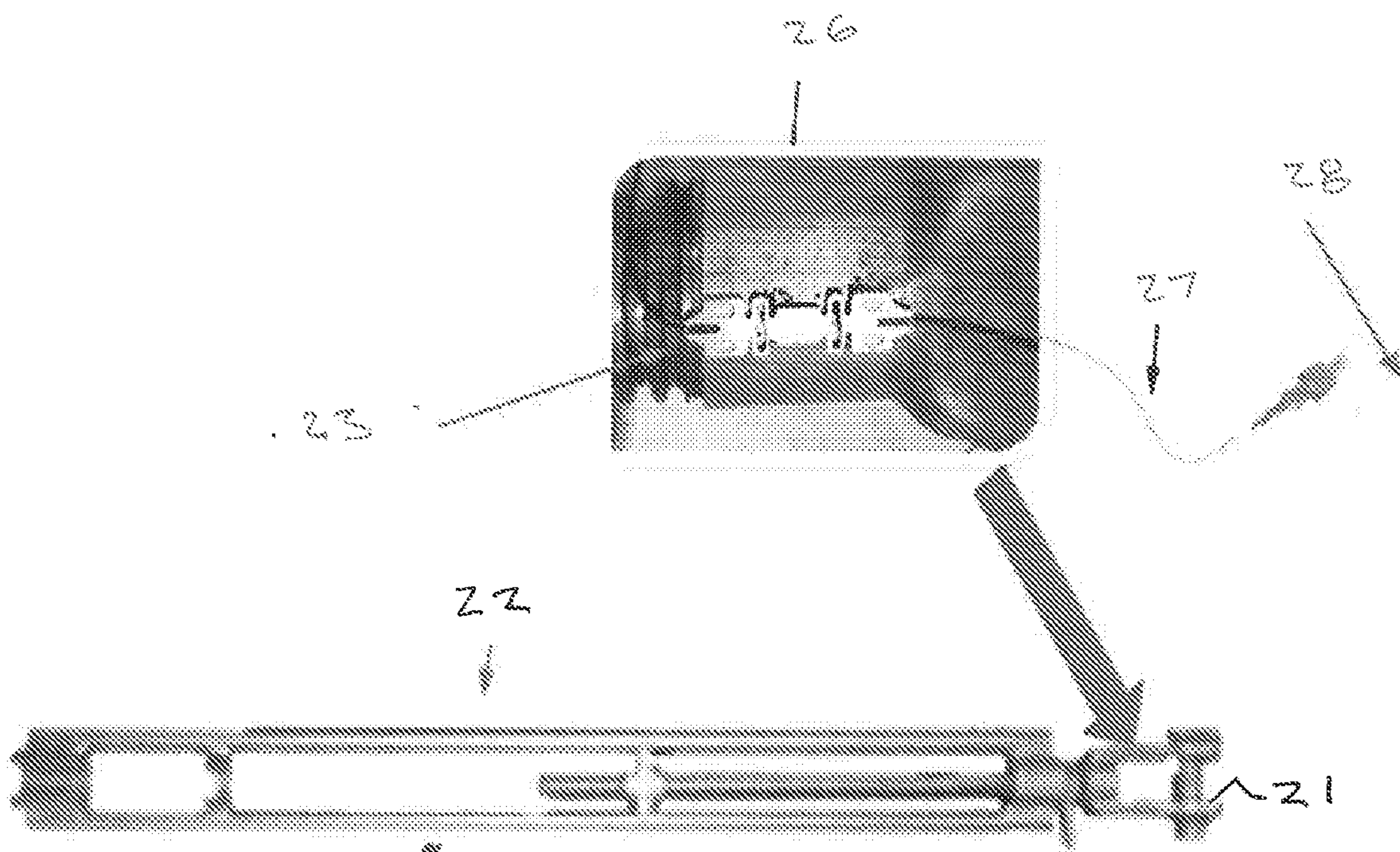


FIG. 10

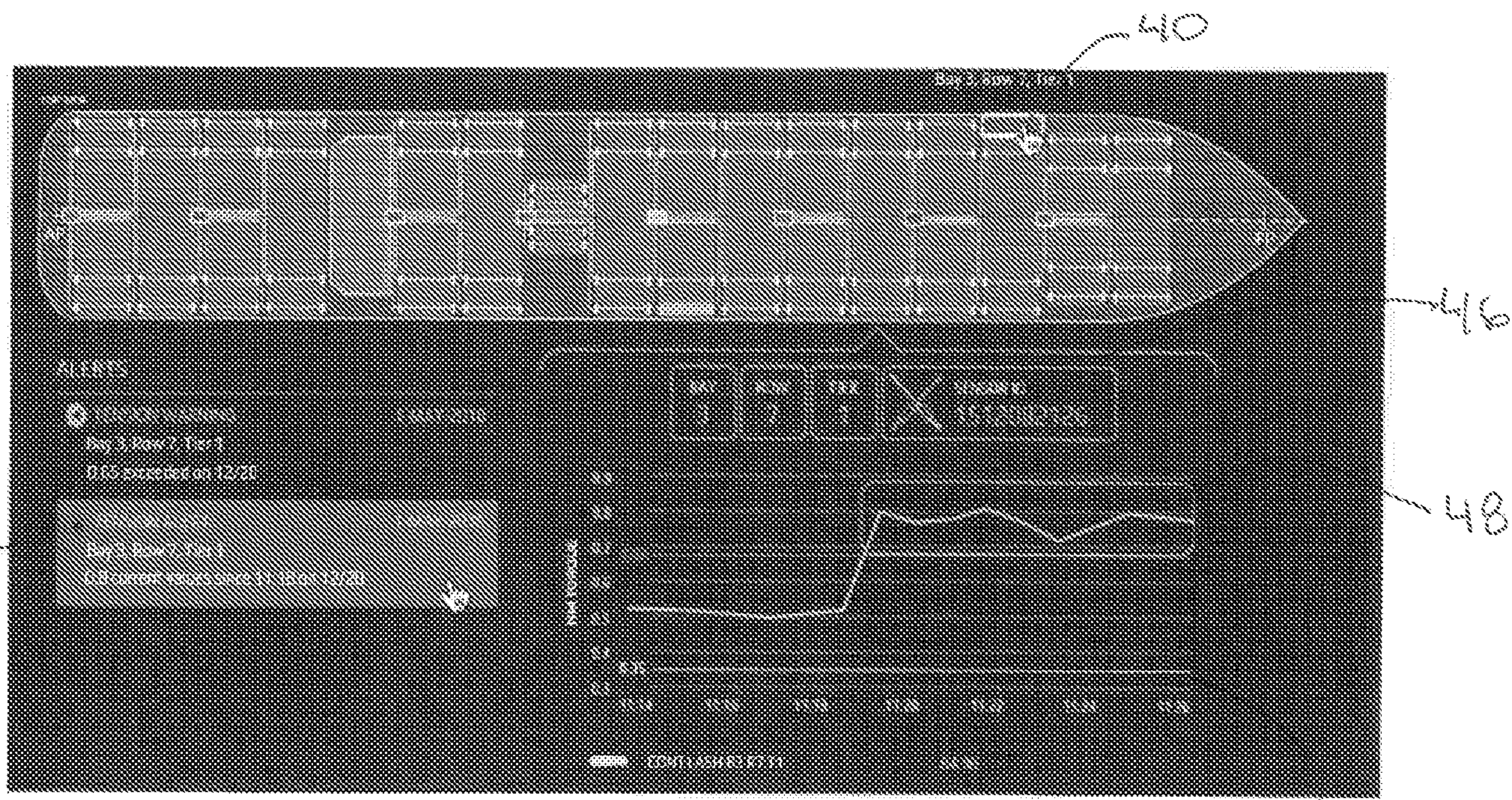
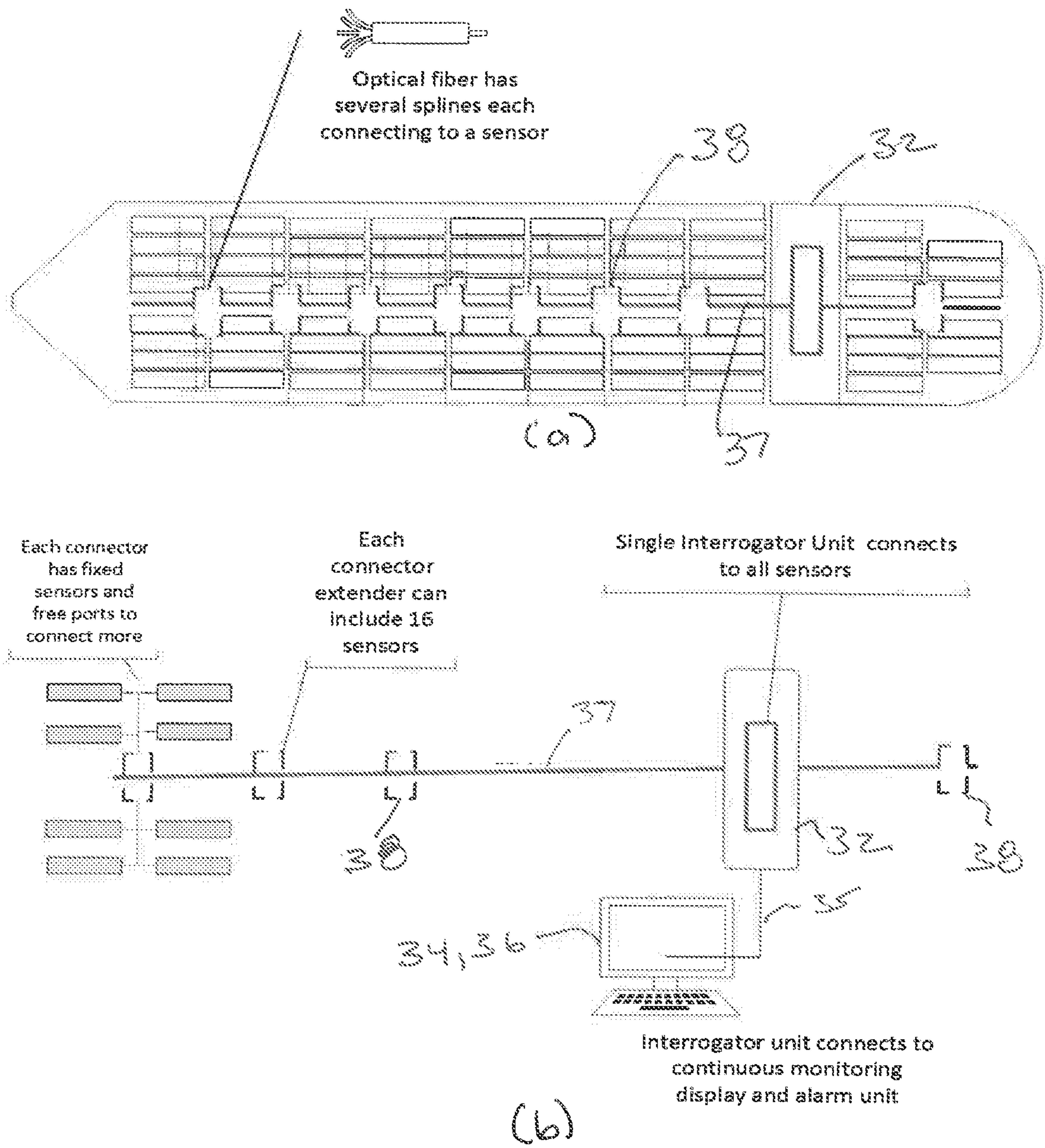
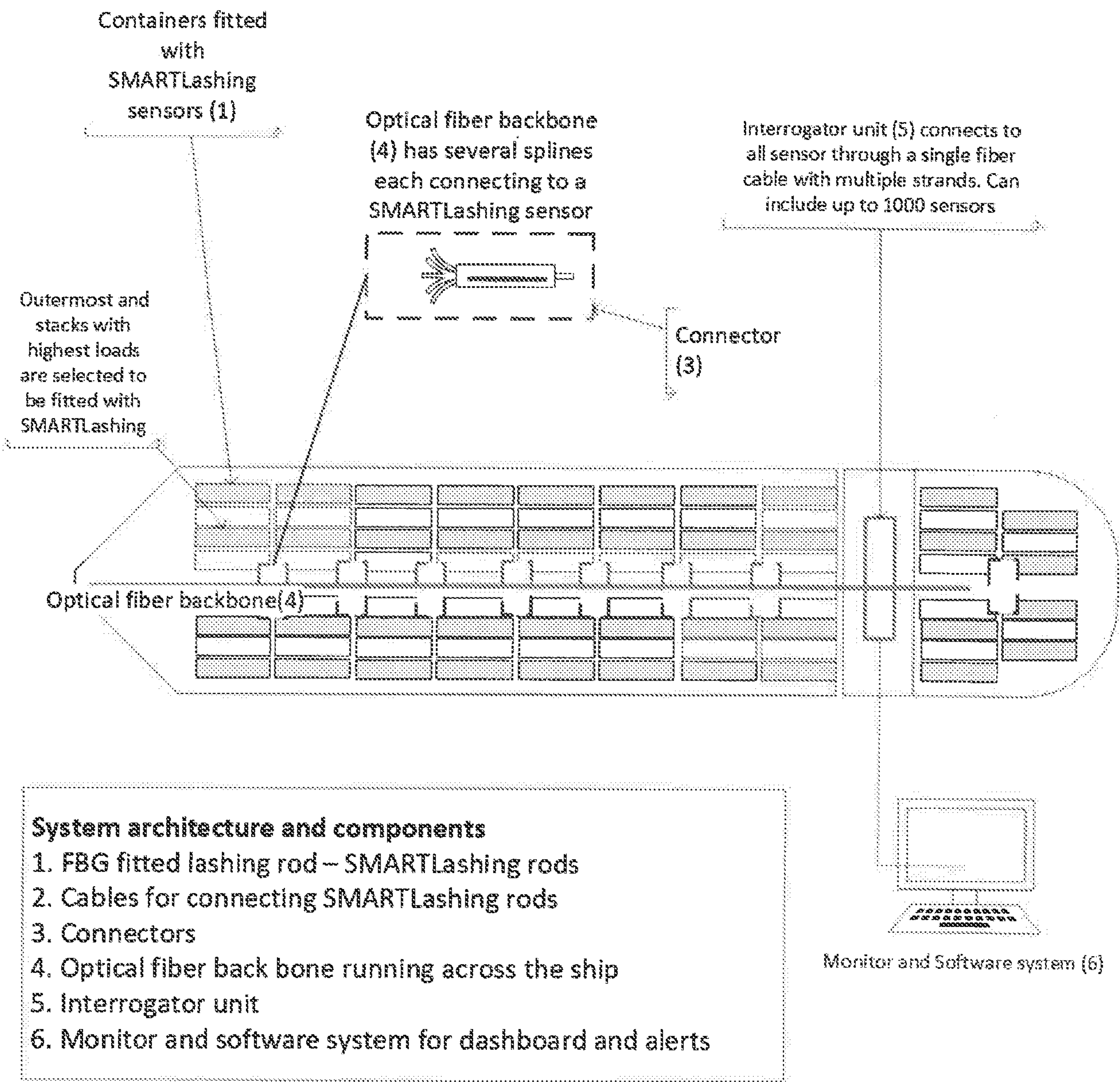


FIG. 11



Schematic design and cable layout for lashing monitoring system

FIG. 12



SMARTLashing system architecture diagram

FIG. 13