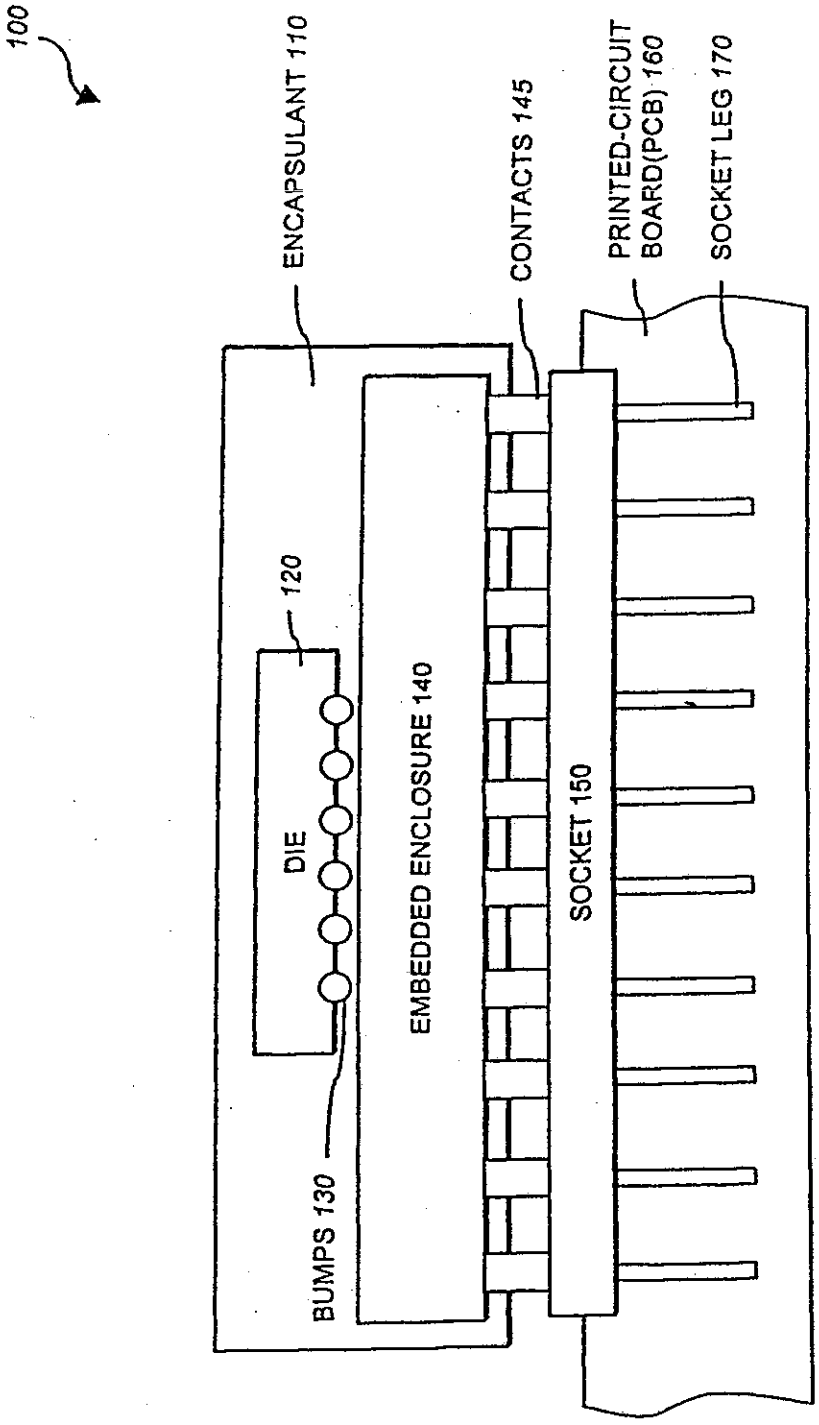
100
ENCAPSULANT 110
CONTACTS 145
PRINTED-CIRCUIT BOARD(PCB) 160
SOCKET LEG 170
120
DIE
EMBEDDED ENCLOSURE 140
SOCKET 150
BUMPS 130

FIG. 1

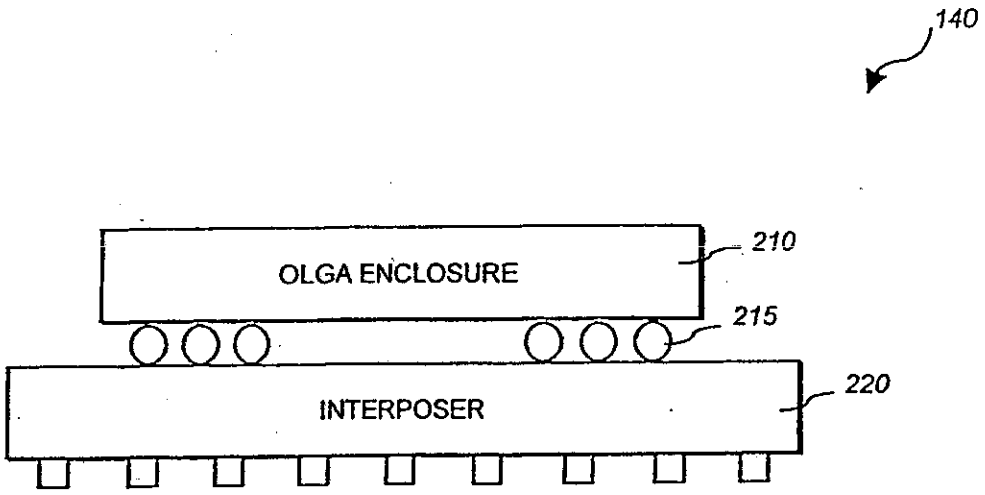
140
OLGA ENCLOSURE
210
215
INTERPOSER
220

FIG.2A

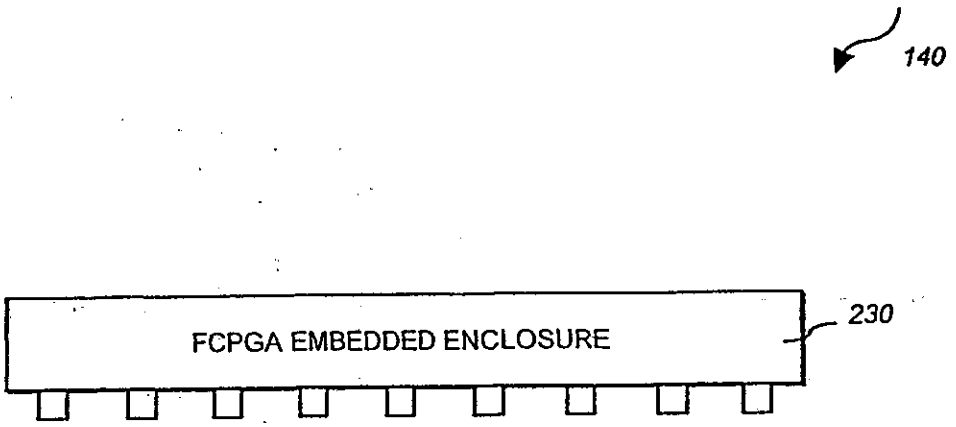
140
FCPGA EMBEDDED ENCLOSURE
230

FIG.2B

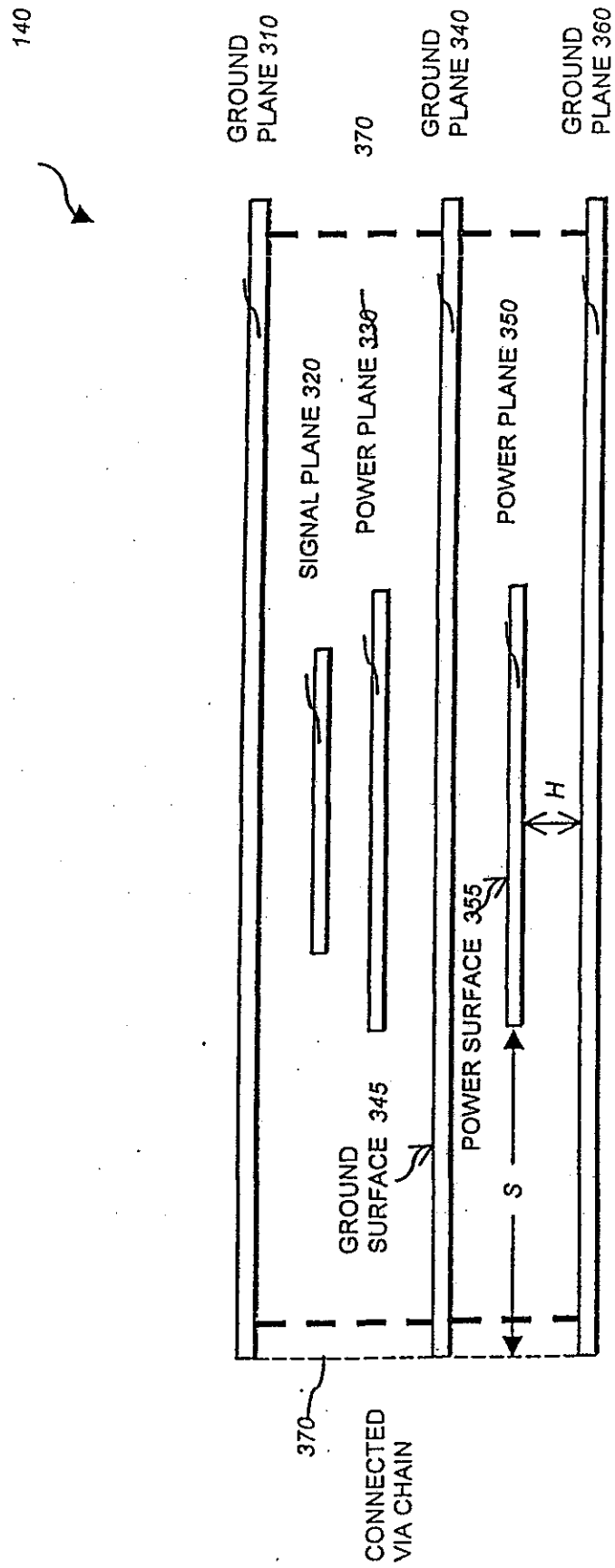
140
GROUND PLANE 310
370
GROUND PLANE 340
GROUND PLANE 360
SIGNAL PLANE 320
POWER PLANE 330
POWER PLANE 350
H
POWER SURFACE 355
S
GROUND SURFACE 345
370
CONNECTED VIA CHAIN

FIG.3A

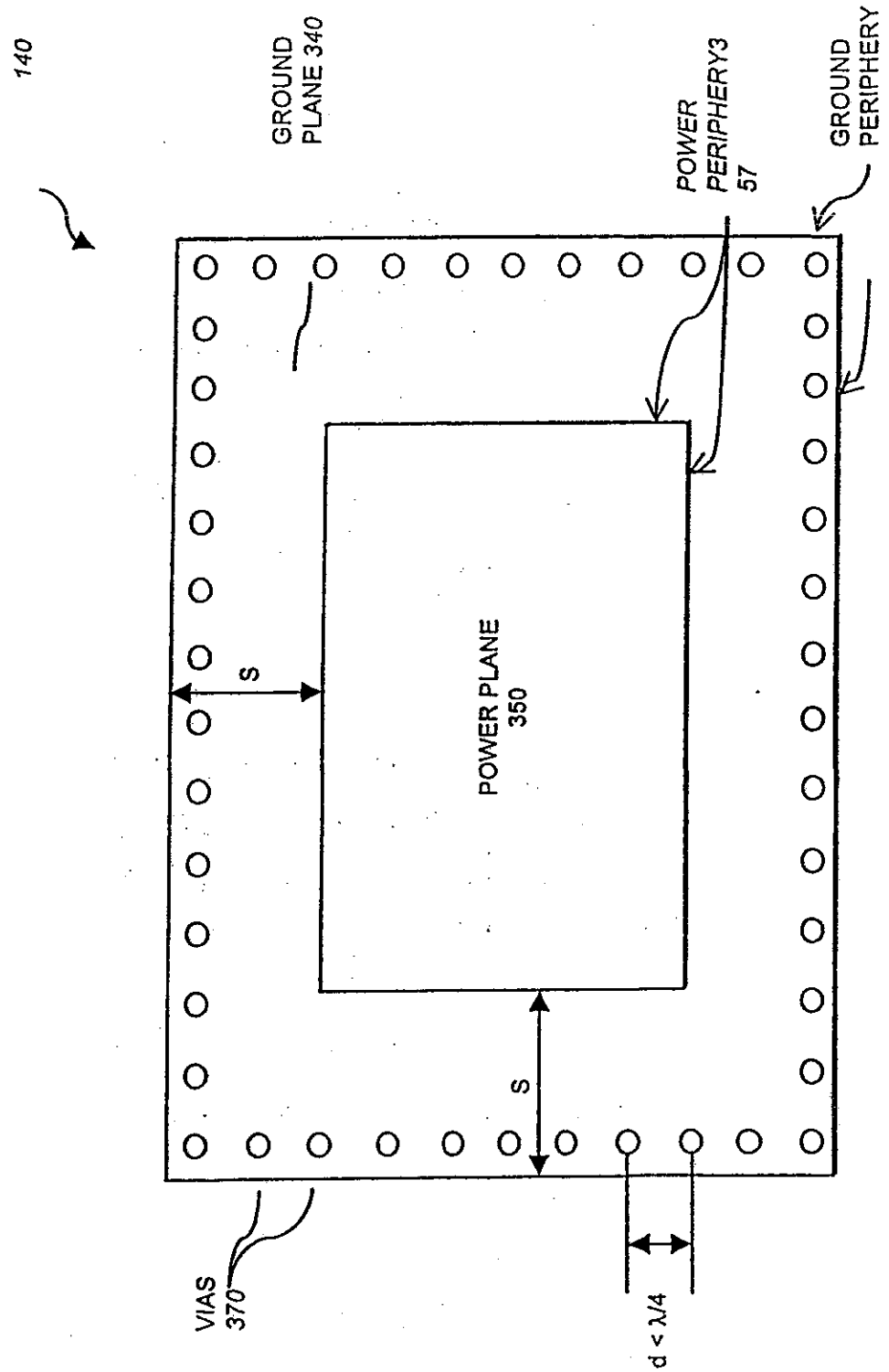
140
GROUND PLANE 340
POWER PERIPHERY3 57
GROUND PERIPHERY 347
POWER PLANE 350
S
S
VIAS 370
d < λ/4

FIG.3B

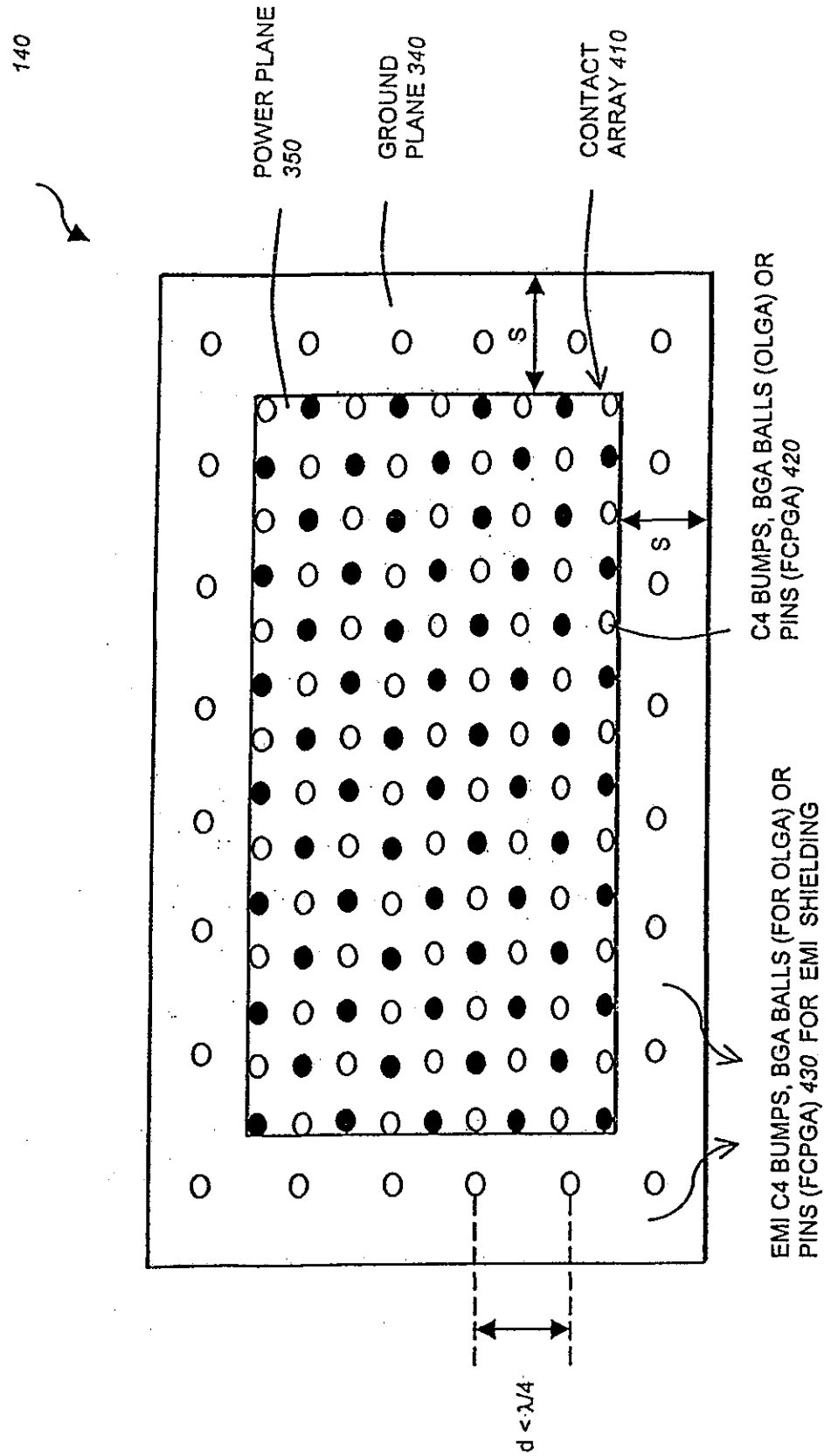
140
POWER PLANE 350
GROUND PLANE 340
CONTACT ARRAY 410
S
S
C4 BUMPS, BGA BALLS (OLGA) OR PINS (FCPGA) 420
EMI C4 BUMPS, BGA BALLS (FOR OLGA) OR PINS (FCPGA) 430 FOR EMI SHIELDING
d < λ/4

FIG.4

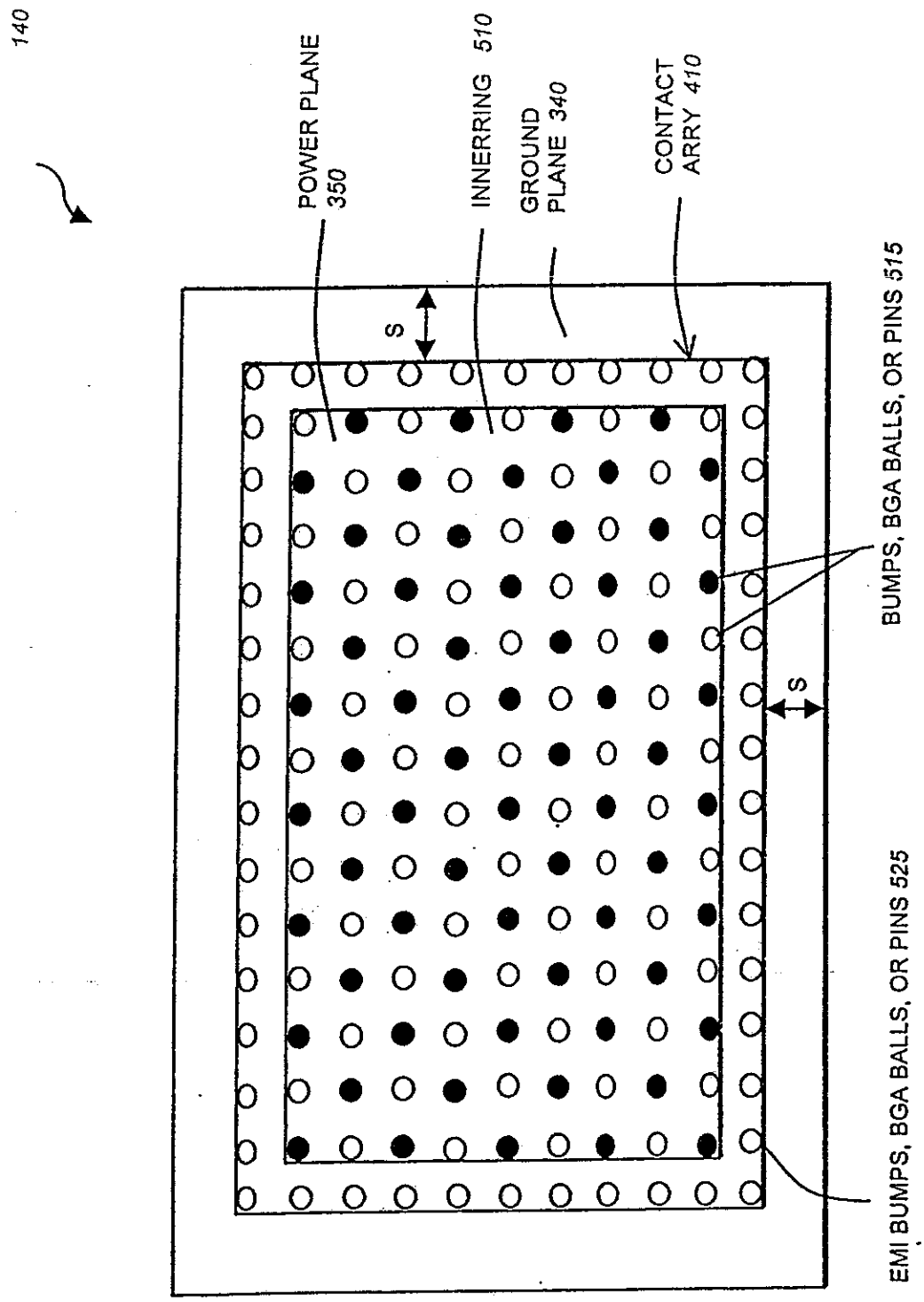
140
POWER PLANE 350
INNERRING 510
GROUND PLANE 340
CONTACT ARRY 410
S
S
BUMPS, BGA BALLS, OR PINS 515
EMI BUMPS, BGA BALLS, OR PINS 525

FIG.5

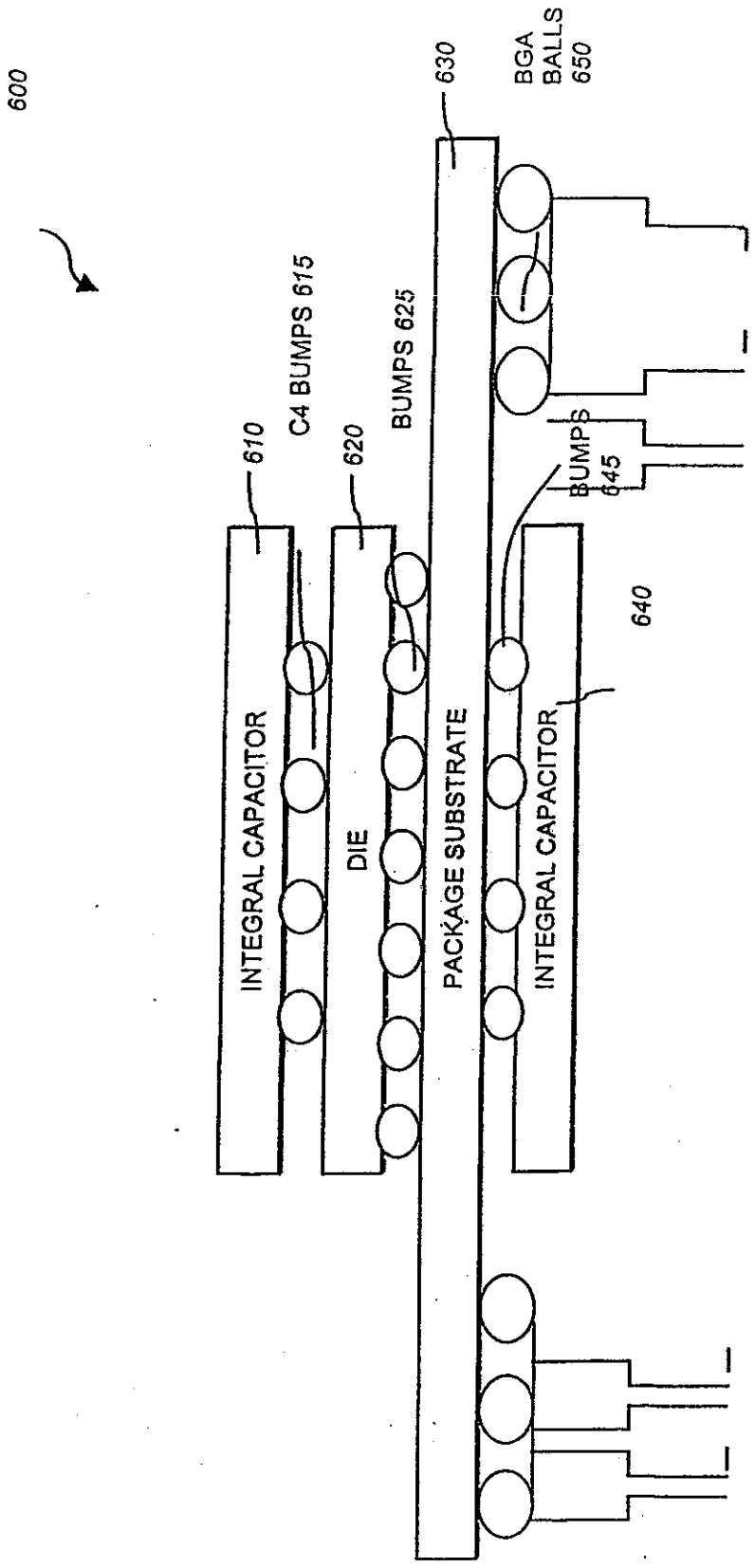
600
630
BGA BALLS 650
C4 BUMPS 615
BUMPS 625
610
620
BUMPS 645
640
INTEGRAL CAPACITOR
DIE
PACKAGE SUBSTRATE
INTEGRAL CAPACITOR

FIG.6

0 8 MAR 2005

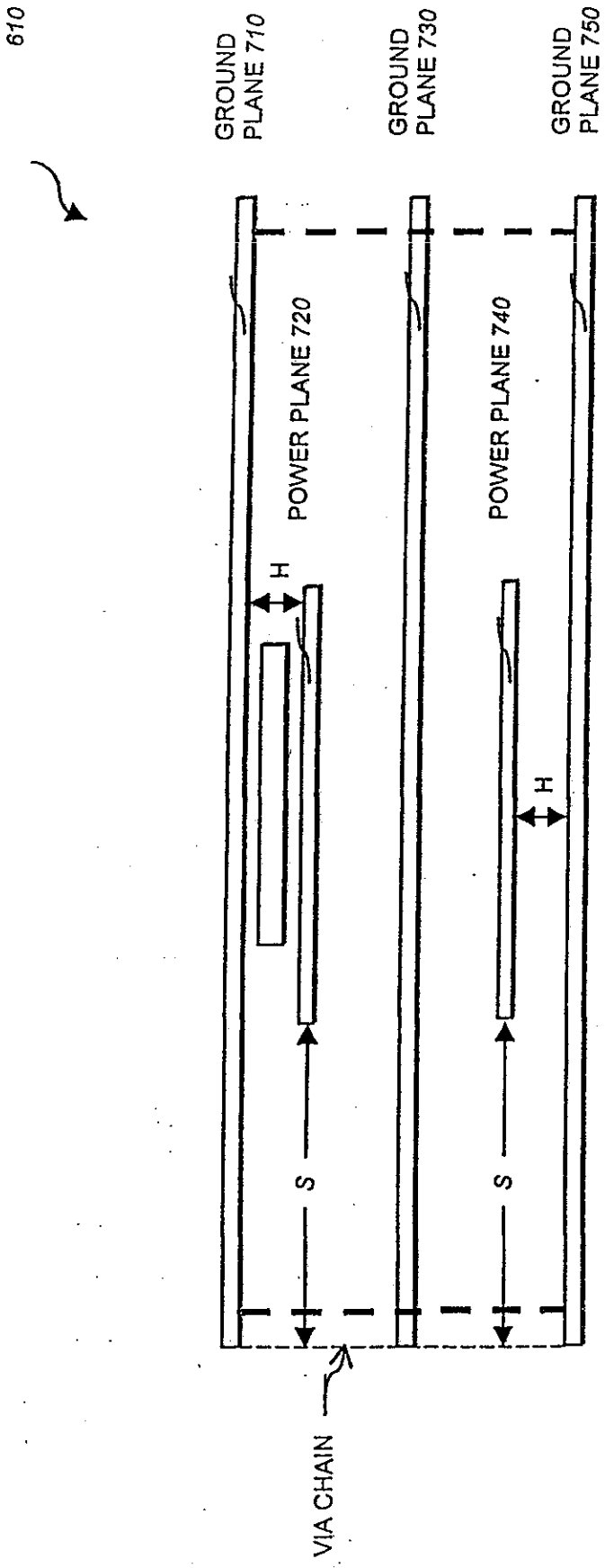

FIG. 7