100

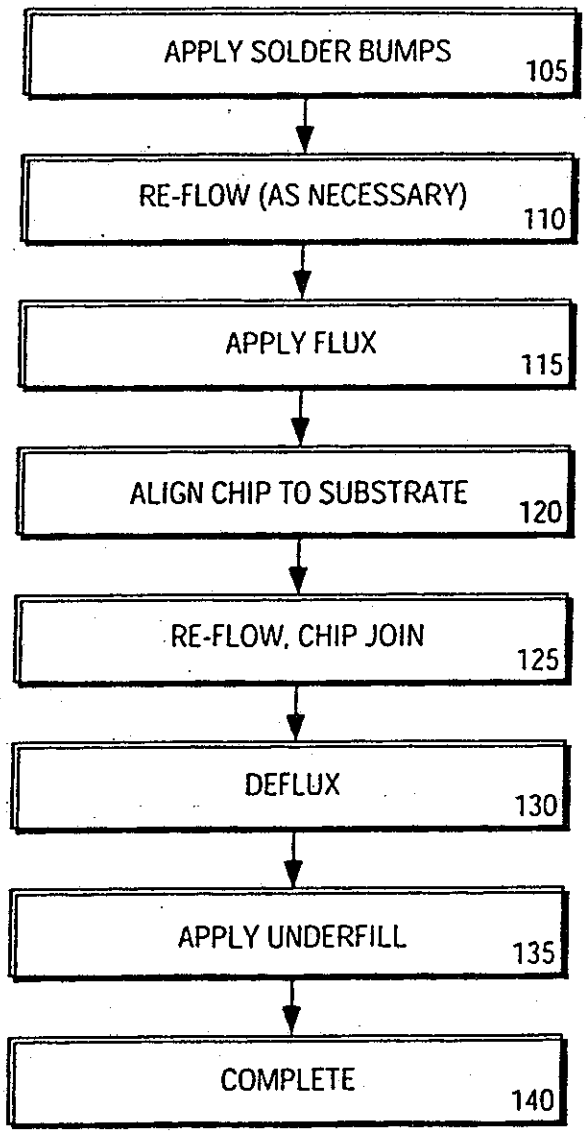


FIG. 1 (PRIOR ART)

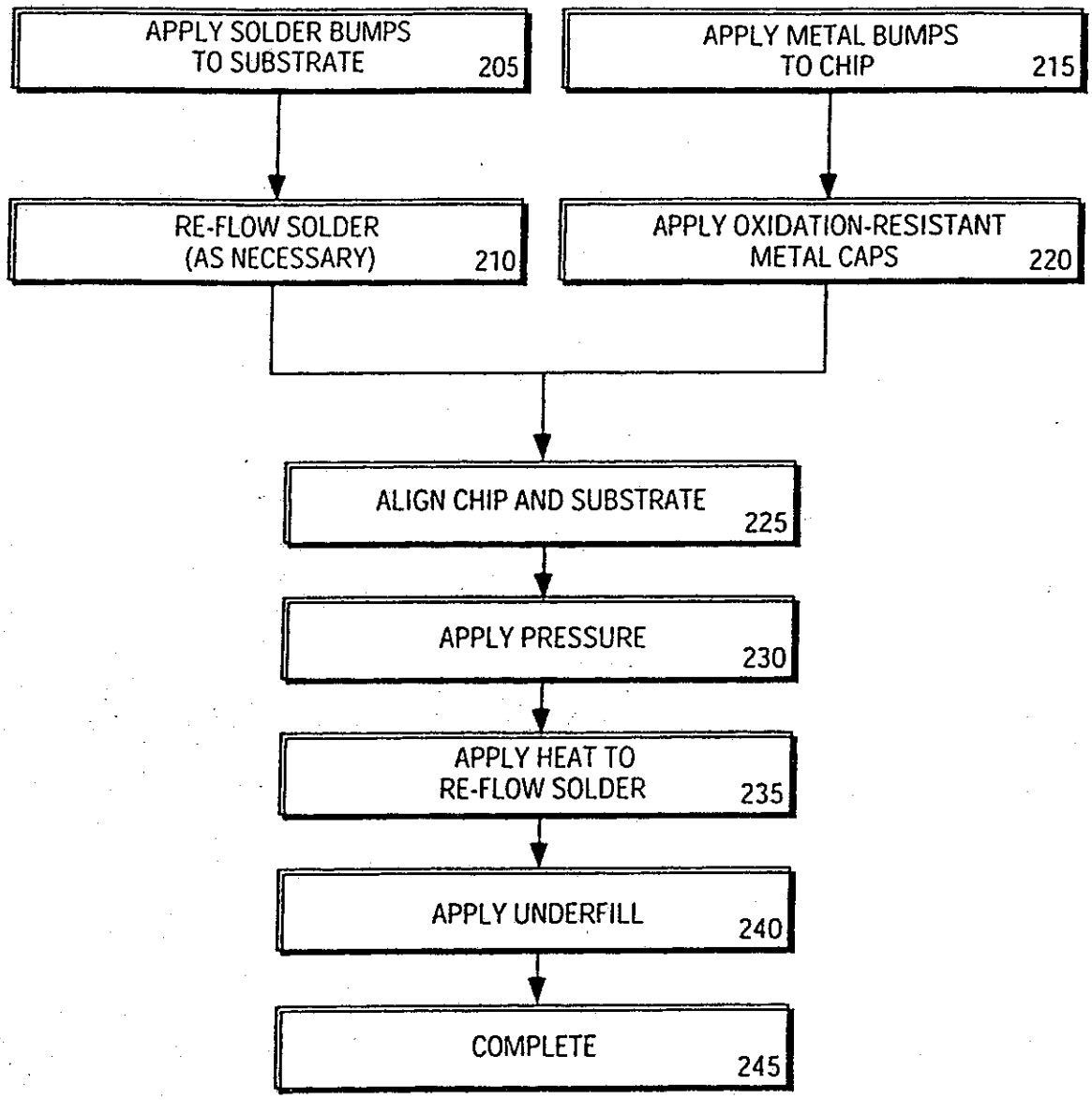

APPLY SOLDER BUMPS TO SUBSTRATE 205
APPLY METAL BUMPS TO CHIP 215
RE-FLOW SOLDER (AS NECESSARY) 210
APPLY OXIDATION-RESISTANT METAL CAPS 220
ALIGN CHIP AND SUBSTRATE 225
APPLY PRESSURE 230
APPLY HEAT TO RE-FLOW SOLDER 235
APPLY UNDERFILL 240
COMPLETE 245

FIG. 2

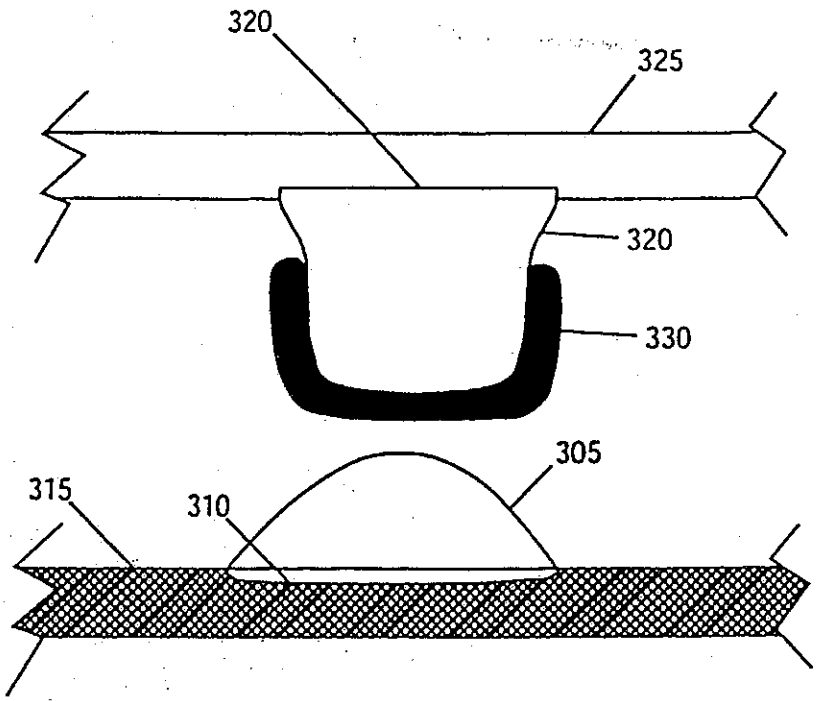


FIG. 3

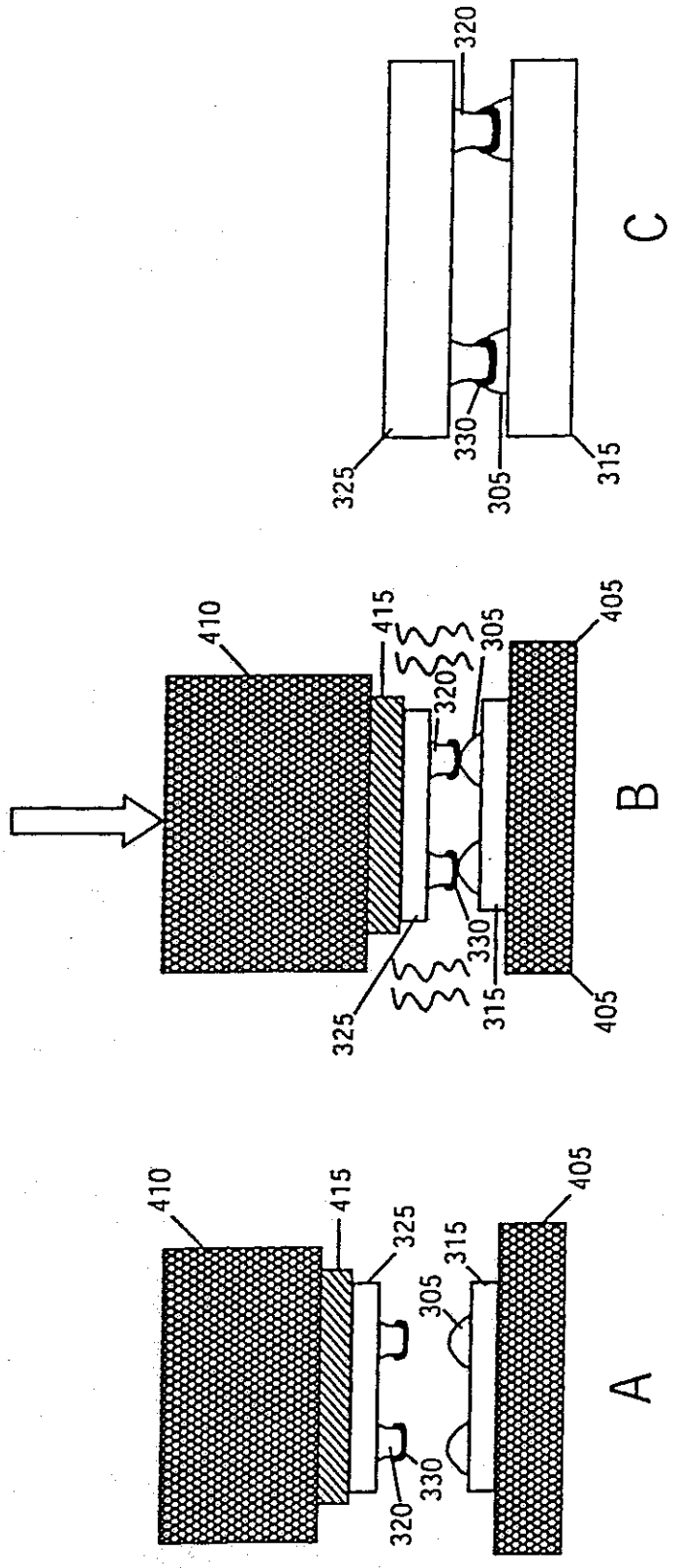

320
325
330
305
315
C
410
415
305
405
320
325
330
315
405
B
410
415
325
315
305
405
330
320
A

FIG. 4

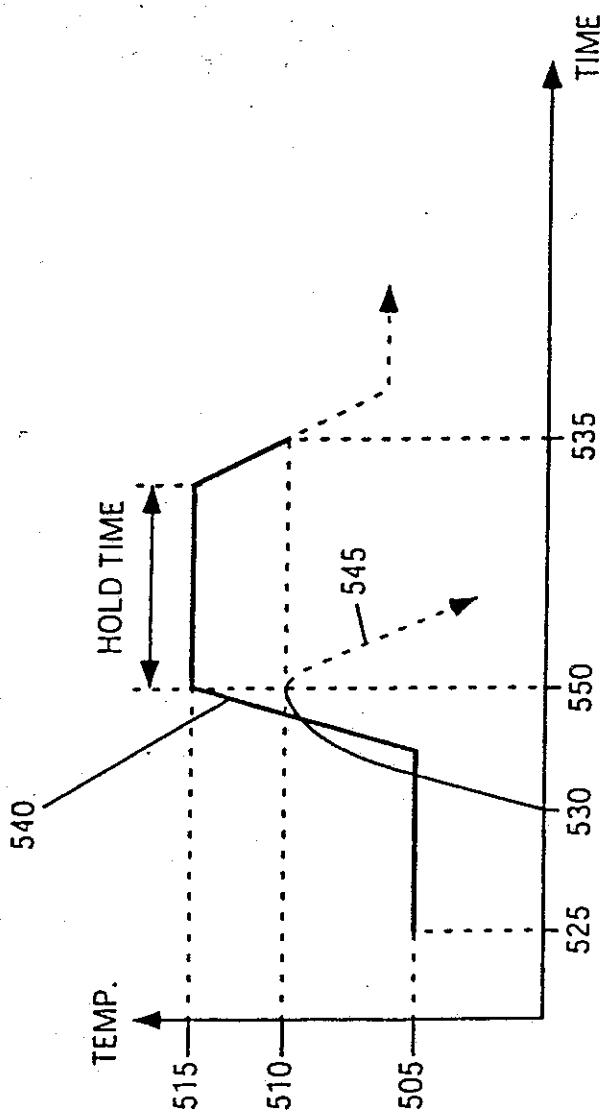


FIG. 5

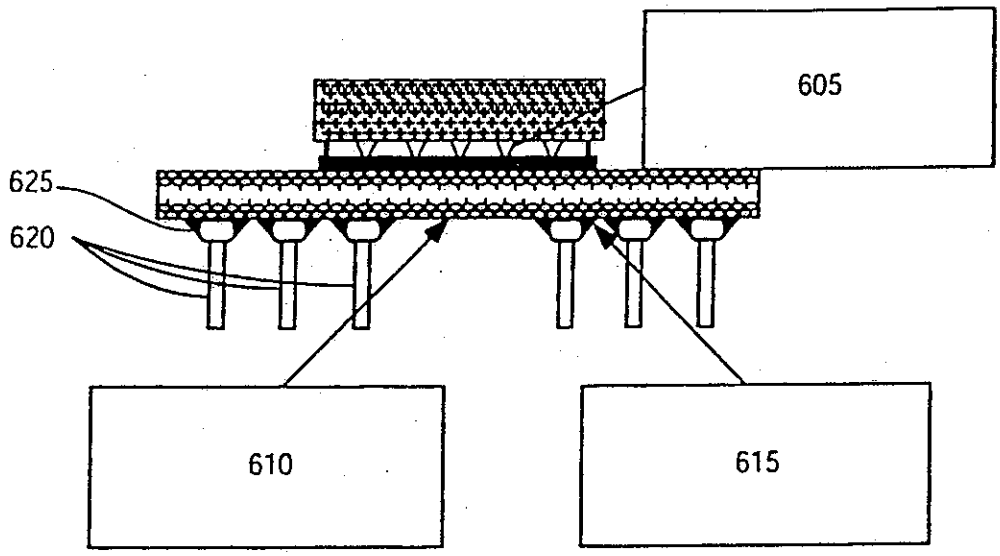

605
625
620
610
615

FIG. 6A

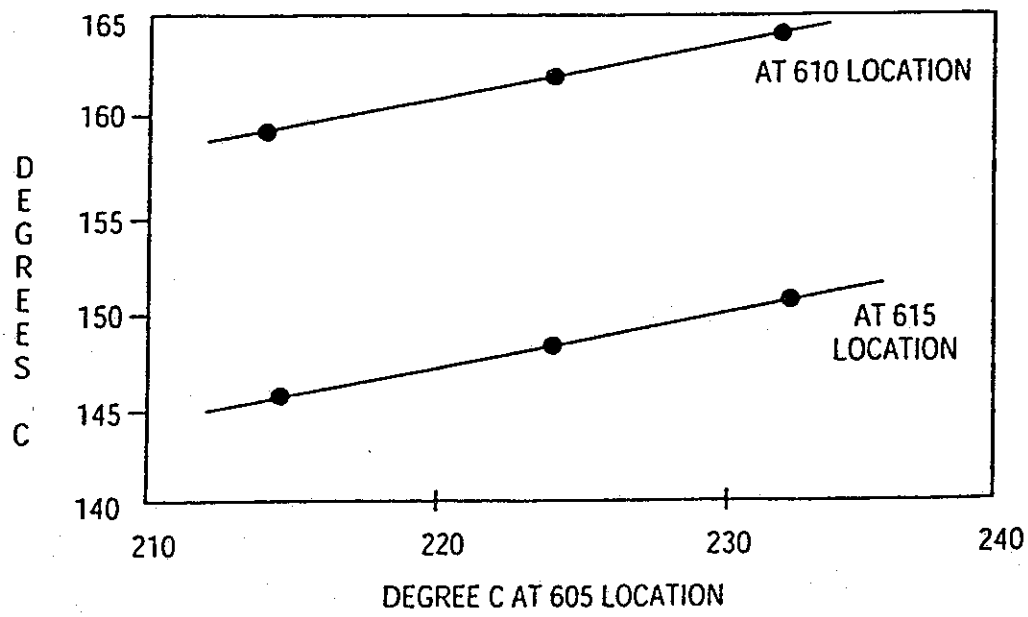

165
160
155
150
145
140
DEGREES C
AT 610 LOCATION
AT 615 LOCATION
210
220
230
240
DEGREE C AT 605 LOCATION

FIG. 6B