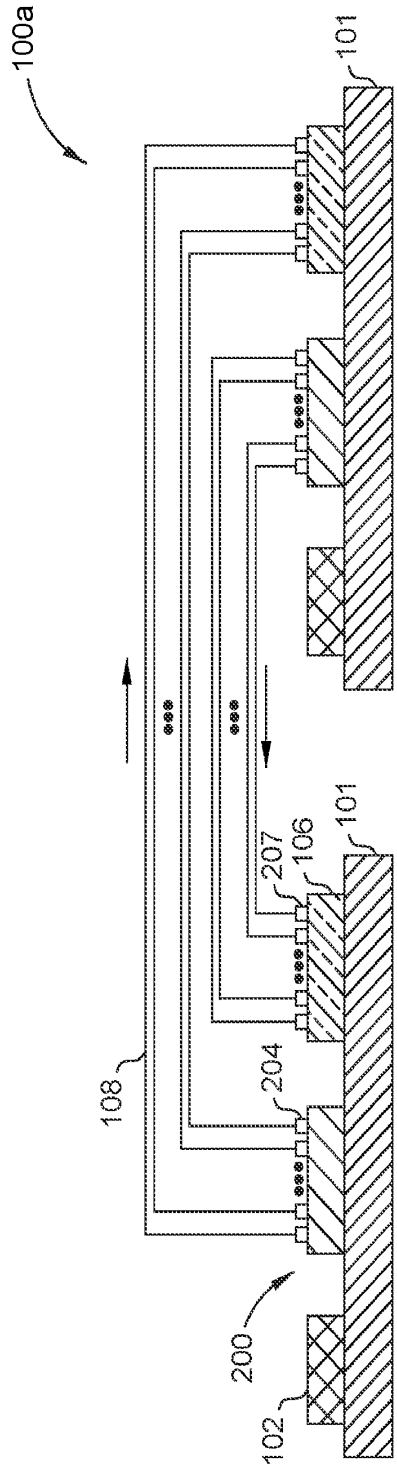


FIG. 1A

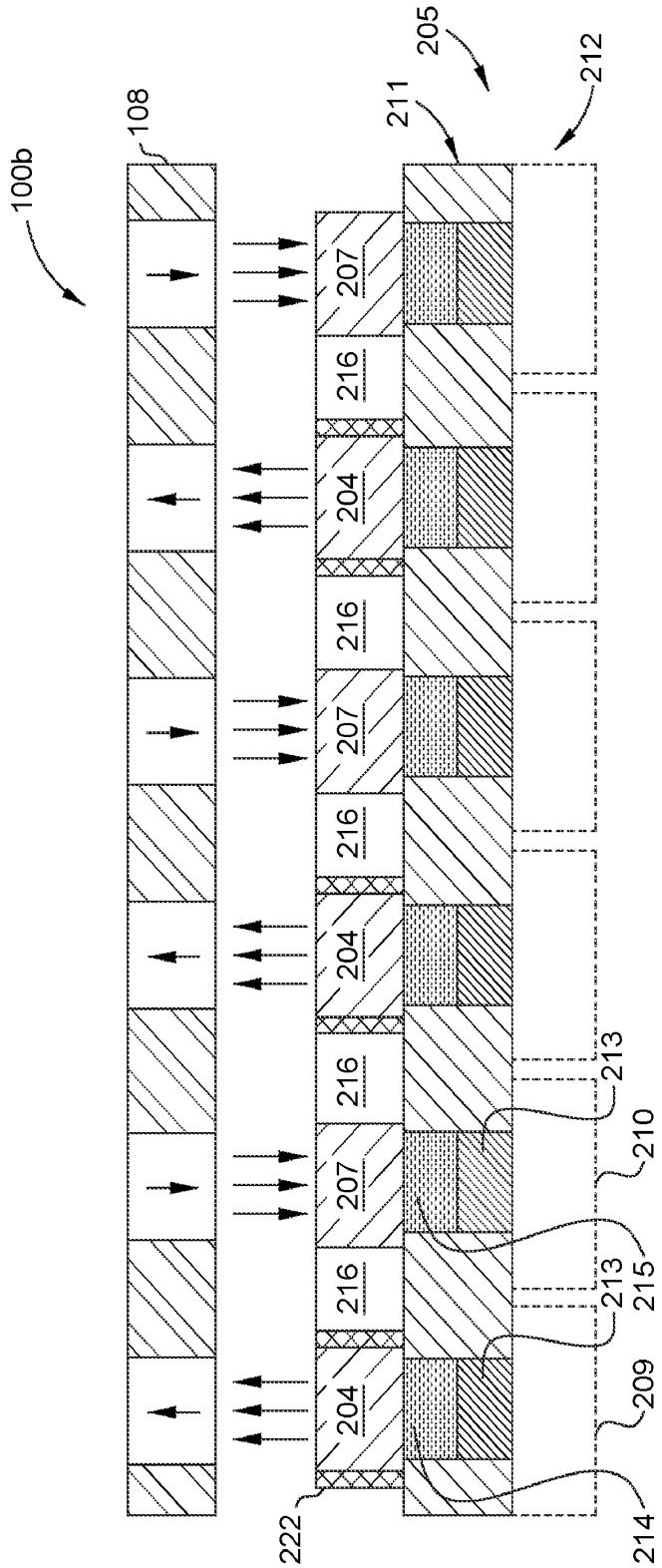

100b
108
205
211
212
207
216
204
216
207
216
204
216
207
216
204
213
210
213
215
209
214
222

FIG. 1B

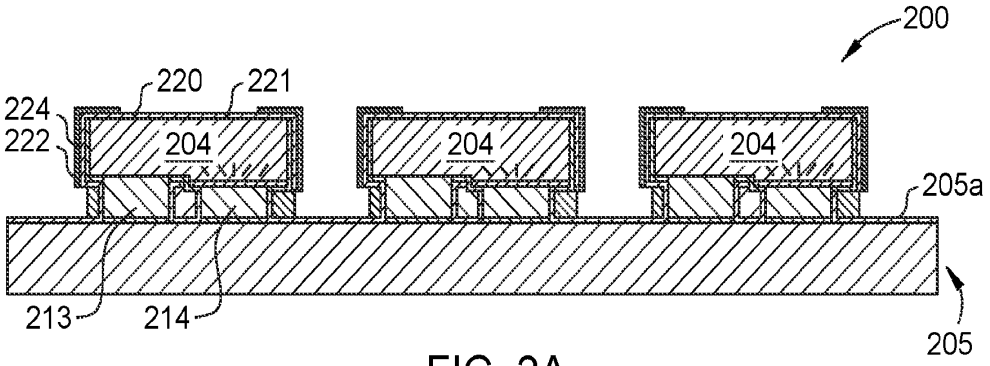


FIG. 2A

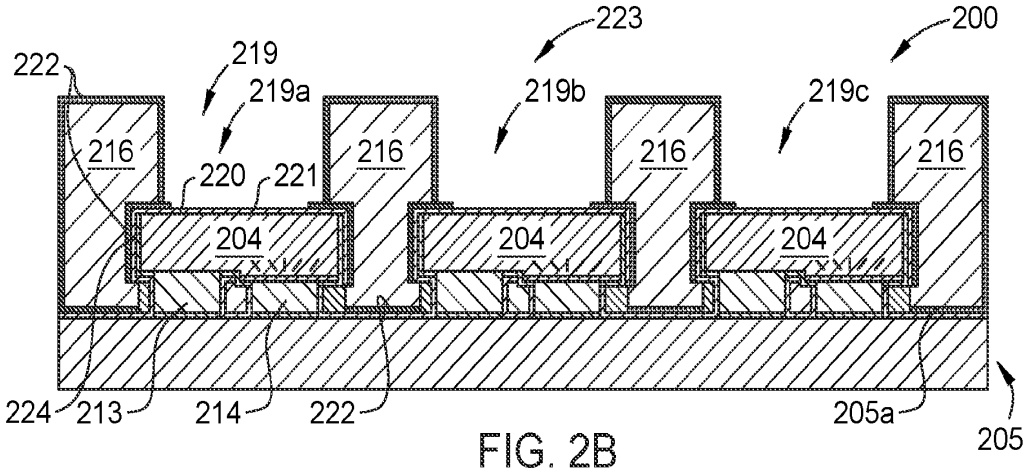


FIG. 2B

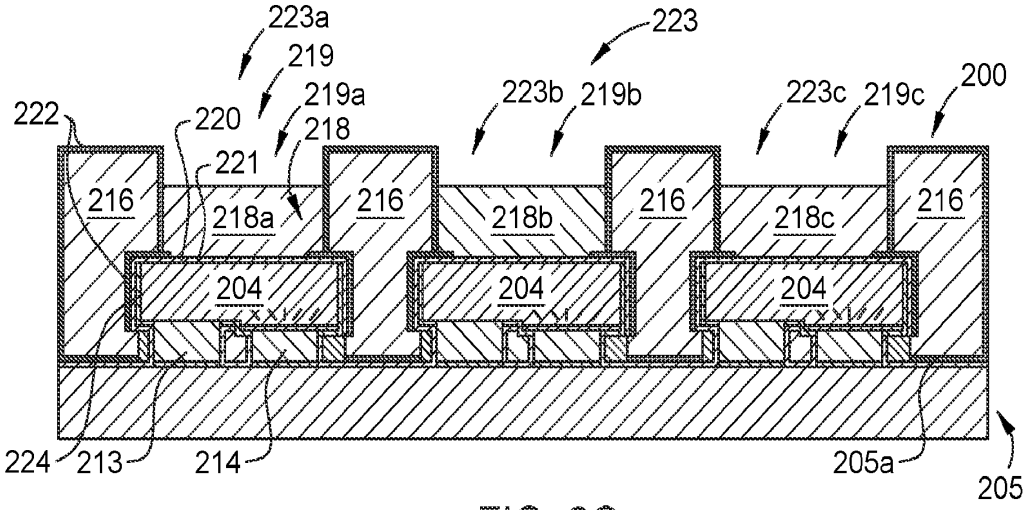


FIG. 2C

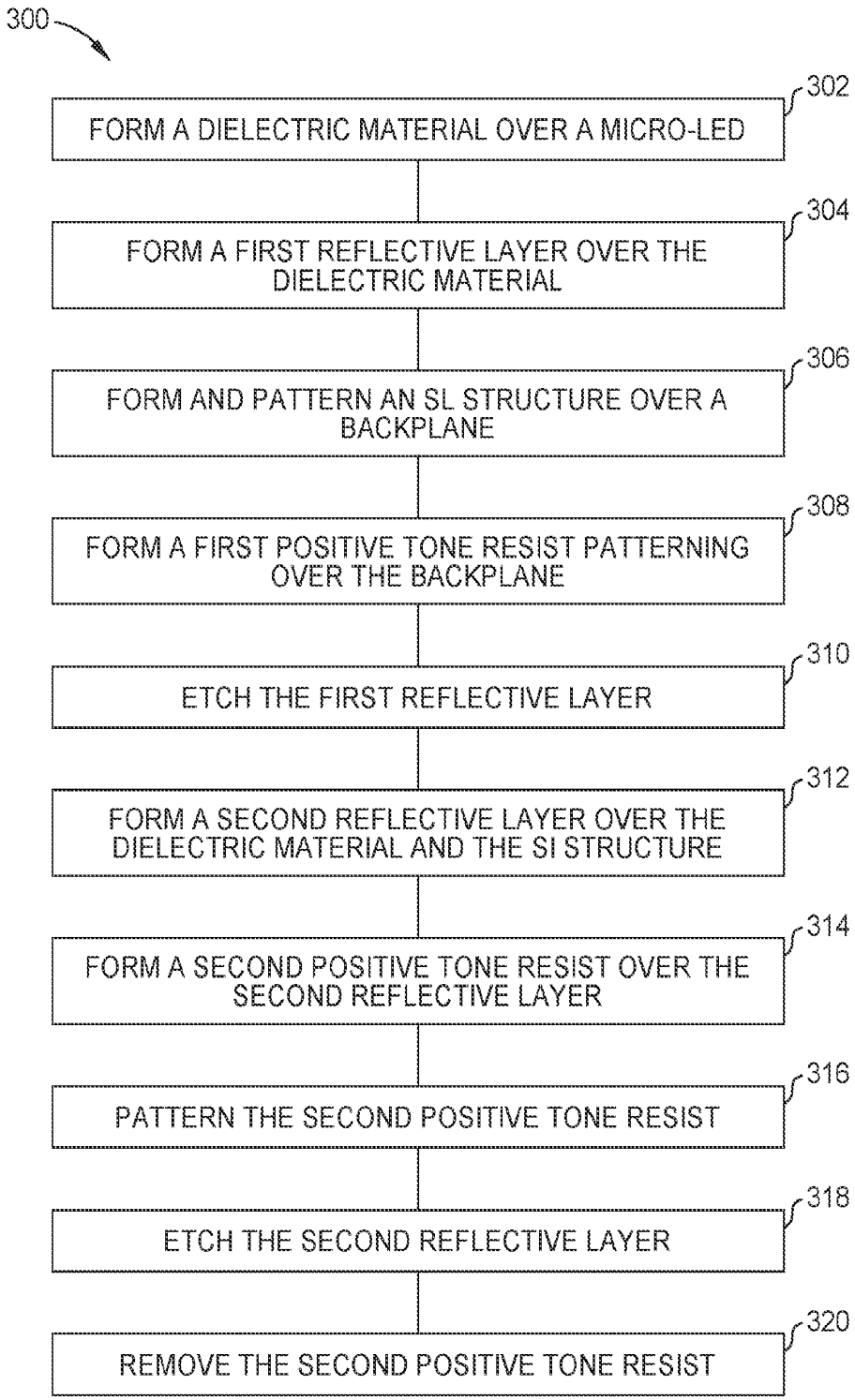

300
302
FORM A DIELECTRIC MATERIAL OVER A MICRO-LED
304
FORM A FIRST REFLECTIVE LAYER OVER THE DIELECTRIC MATERIAL
306
FORM AND PATTERN AN SL STRUCTURE OVER A BACKPLANE
308
FORM A FIRST POSITIVE TONE RESIST PATTERNING OVER THE BACKPLANE
310
ETCH THE FIRST REFLECTIVE LAYER
312
FORM A SECOND REFLECTIVE LAYER OVER THE DIELECTRIC MATERIAL AND THE SI STRUCTURE
314
FORM A SECOND POSITIVE TONE RESIST OVER THE SECOND REFLECTIVE LAYER
316
PATTERN THE SECOND POSITIVE TONE RESIST
318
ETCH THE SECOND REFLECTIVE LAYER
320
REMOVE THE SECOND POSITIVE TONE RESIST

FIG. 3

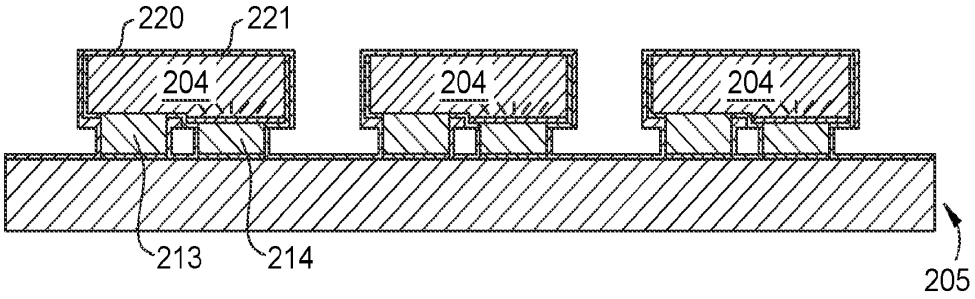

220
221
204
204
204
213
214
205

FIG. 4A

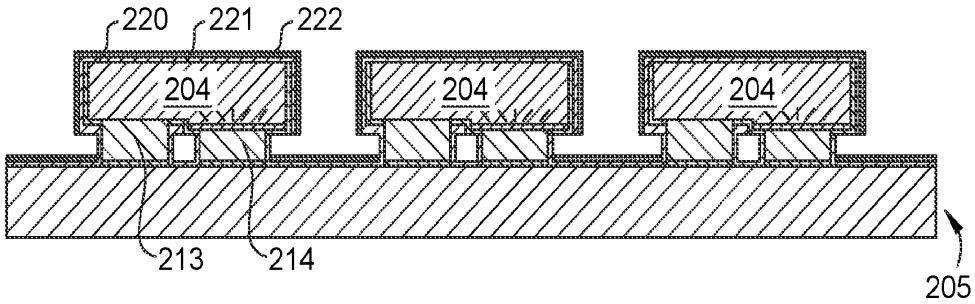

220
221
222
204
204
204
213
214
205

FIG. 4B

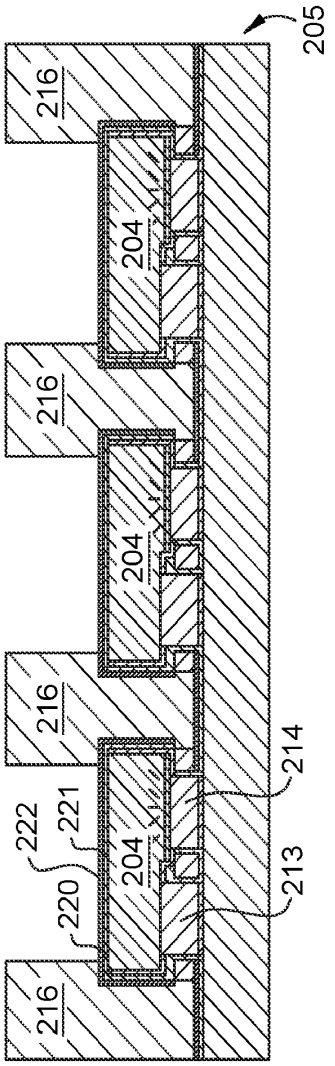

205
216
204
216
204
216
214
222
221
220
204
213
216

FIG. 4C

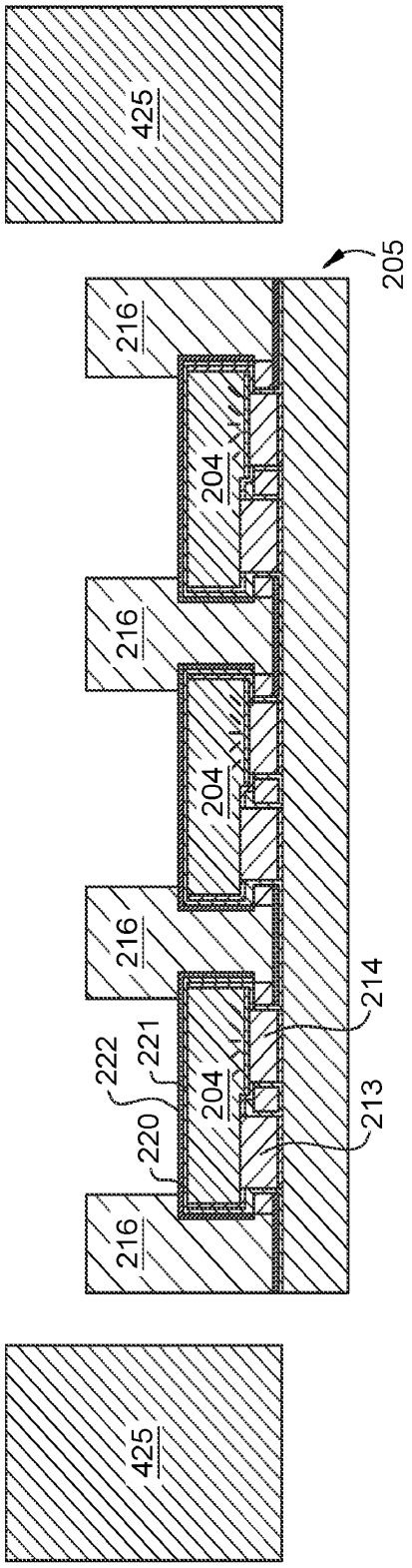

425
205
216
204
216
204
216
214
222
221
220
204
213
216
425

FIG. 4D

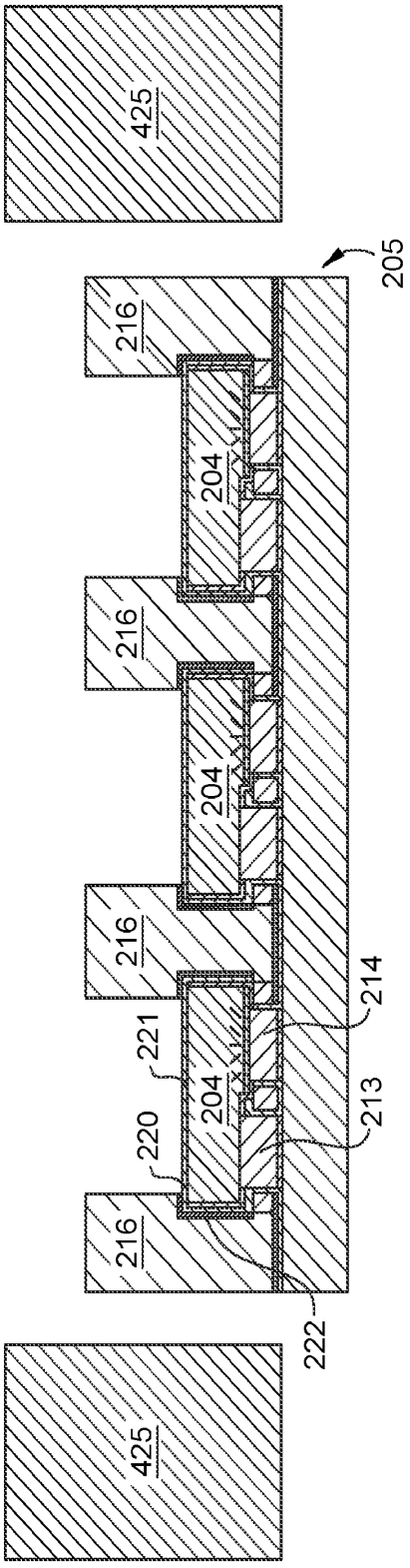

425
205
216
204
216
204
216
221
214
204
220
213
216
222
425

FIG. 4E

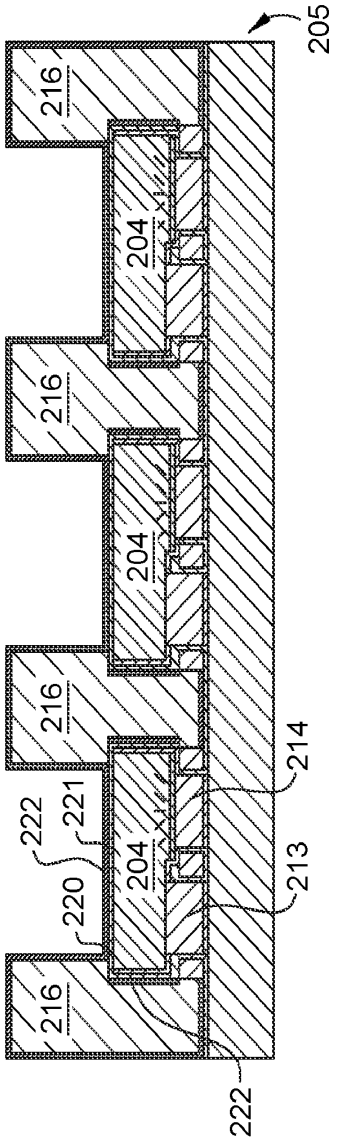

205
216
204
216
204
216
214
222
221
204
220
213
216
222

FIG. 4F

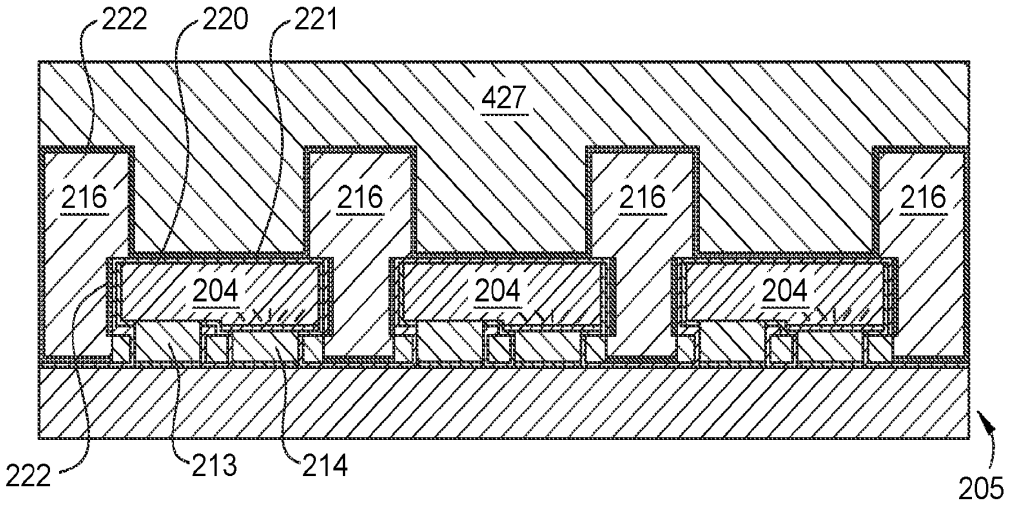

222
220
221
427
216
216
216
216
204
204
204
222
213
214
205

FIG. 4G

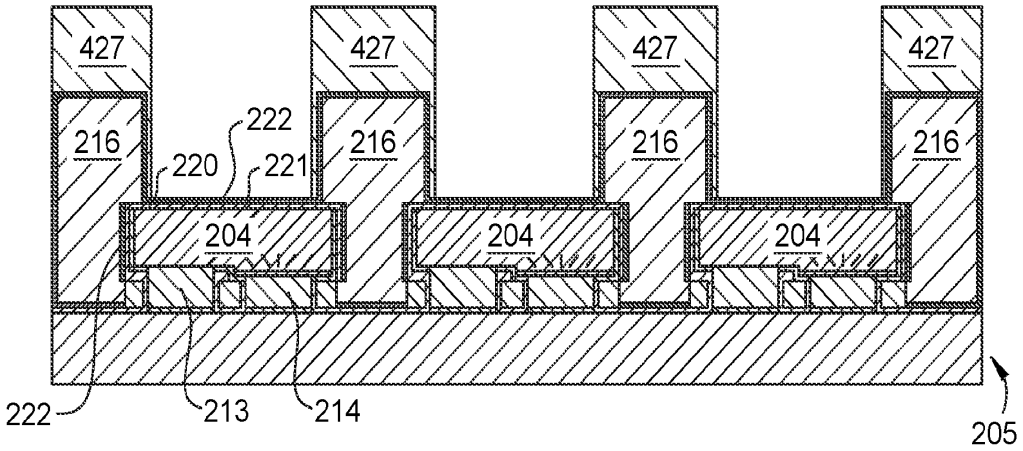

427
427
427
427
216
216
216
216
222
220
221
204
204
204
222
213
214
205

FIG. 4H

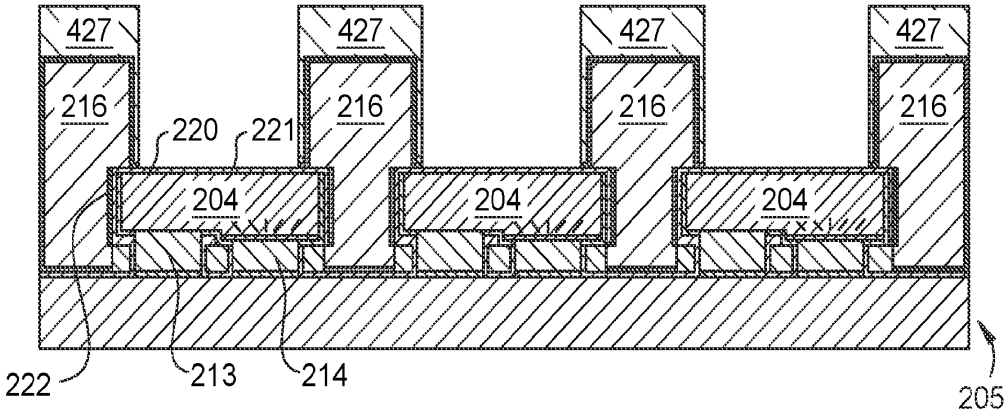

427
427
427
427
216
220
221
216
216
216
204
204
204
222
213
214
205

FIG. 4I

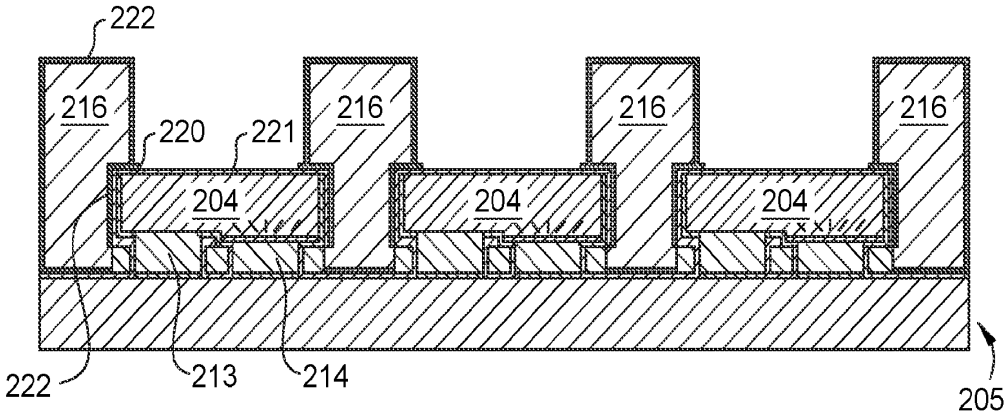

222
216
220
221
216
216
216
204
204
204
222
213
214
205

FIG. 4J

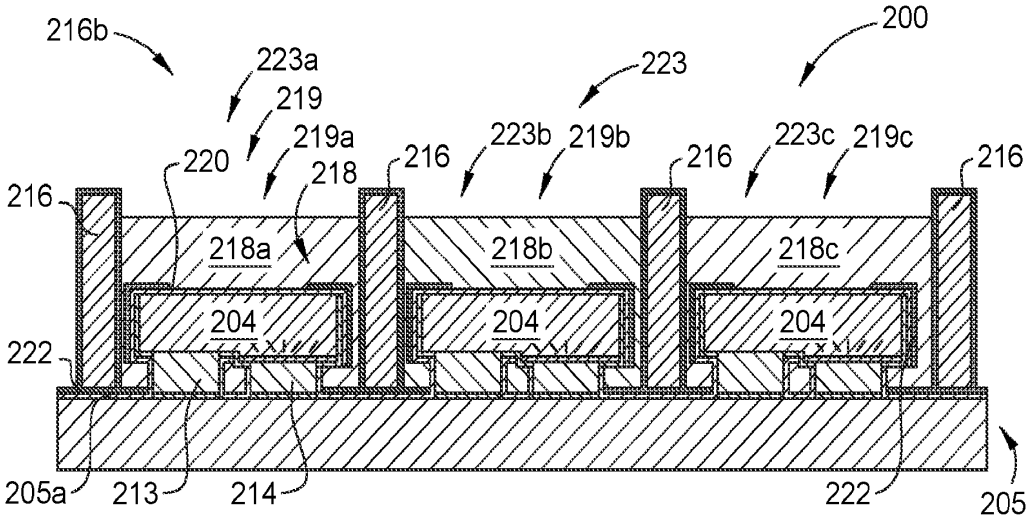

216b
223a
219
219a
220
218
216
223b
219b
223
216
223c
219c
200
216
216
218a
218b
218c
204
204
204
222
205a
213
214
222
205

FIG. 5

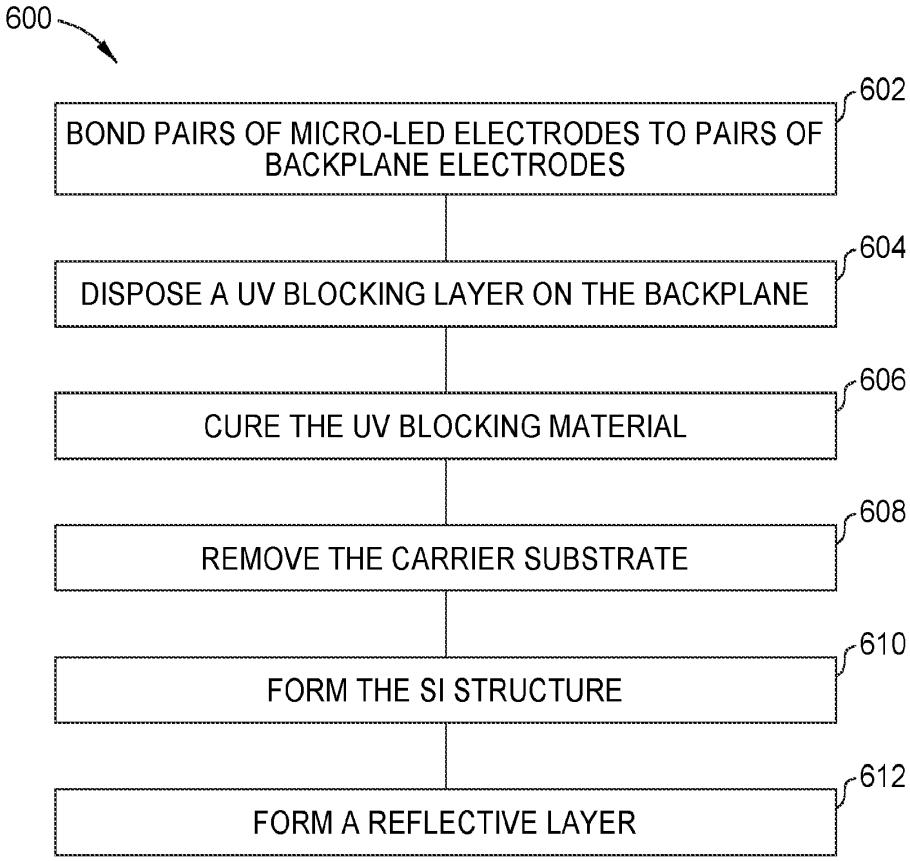

600
BOND PAIRS OF MICRO-LED ELECTRODES TO PAIRS OF BACKPLANE ELECTRODES
602
DISPOSE A UV BLOCKING LAYER ON THE BACKPLANE
604
CURE THE UV BLOCKING MATERIAL
606
REMOVE THE CARRIER SUBSTRATE
608
FORM THE SI STRUCTURE
610
FORM A REFLECTIVE LAYER
612

FIG. 6

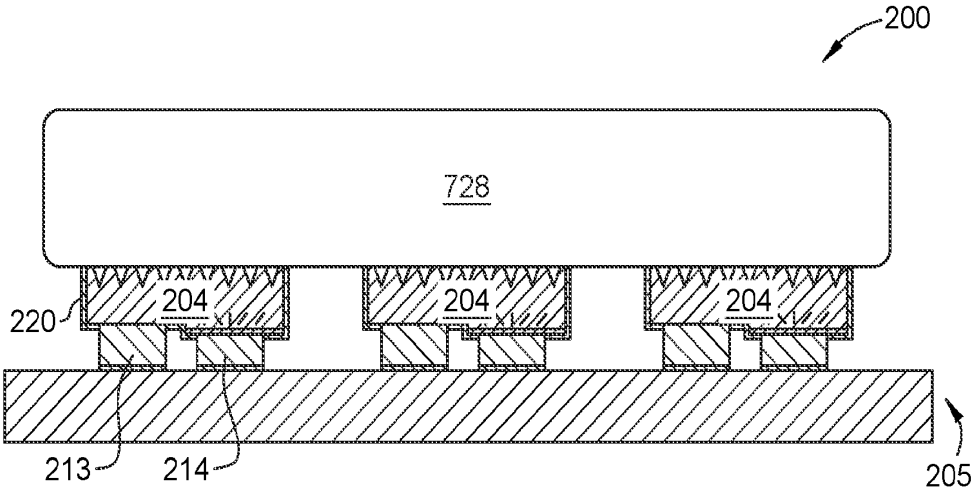

200
728
204
204
204
220
213
214
205

FIG. 7A

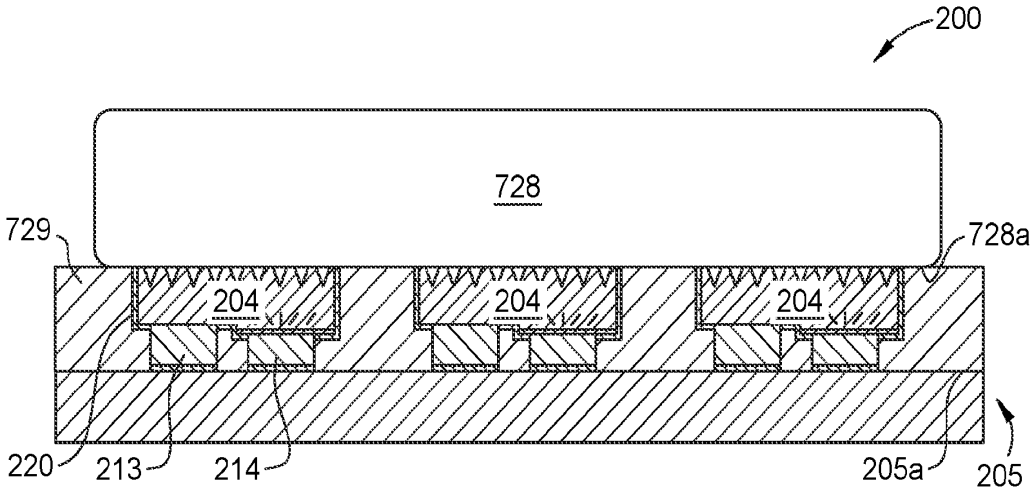

200
728
729
728a
204
204
204
220
213
214
205a
205

FIG. 7B

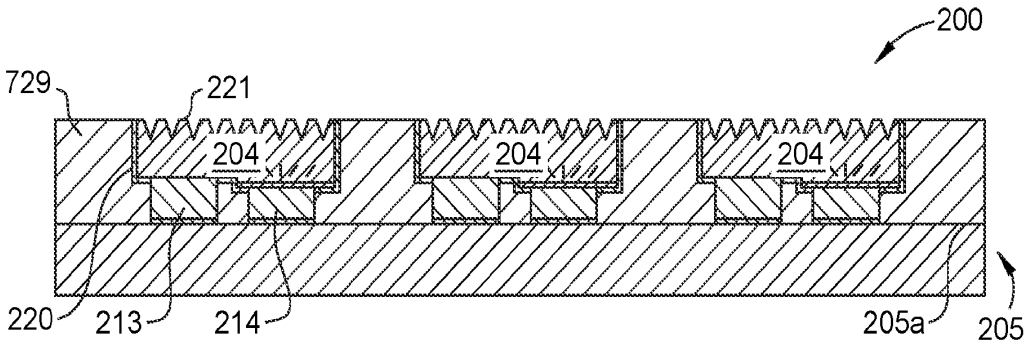

200
729
221
204
204
204
220
213
214
205a
205

FIG. 7C

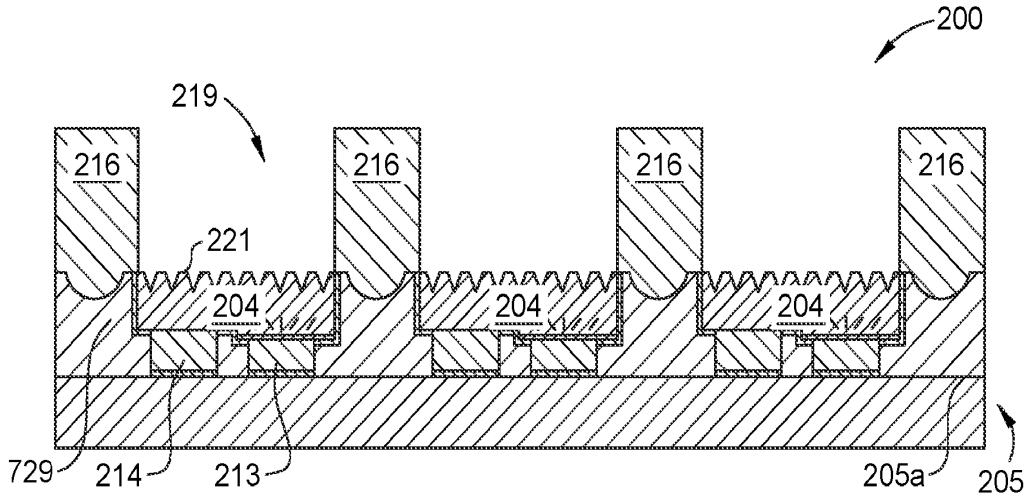

200
219
216
216
216
216
221
204
204
204
729
214
213
205a
205

FIG. 7D

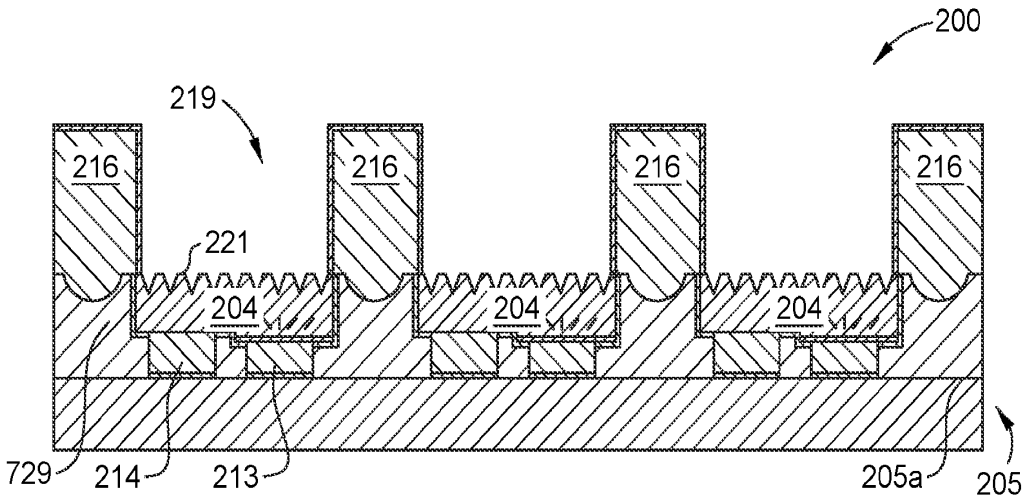

200
219
216
216
216
216
221
204
204
204
729
214
213
205a
205

FIG. 7E

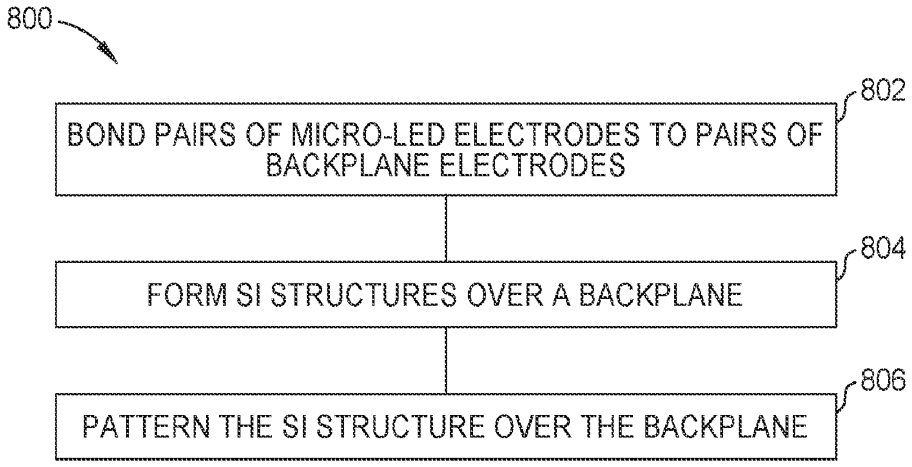

800
802
BOND PAIRS OF MICRO-LED ELECTRODES TO PAIRS OF BACKPLANE ELECTRODES
804
FORM SI STRUCTURES OVER A BACKPLANE
806
PATTERN THE SI STRUCTURE OVER THE BACKPLANE

FIG. 8

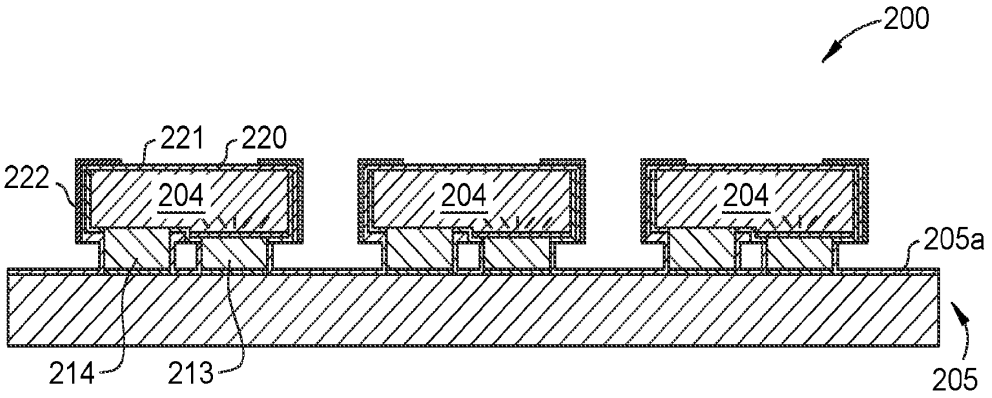


FIG. 9A

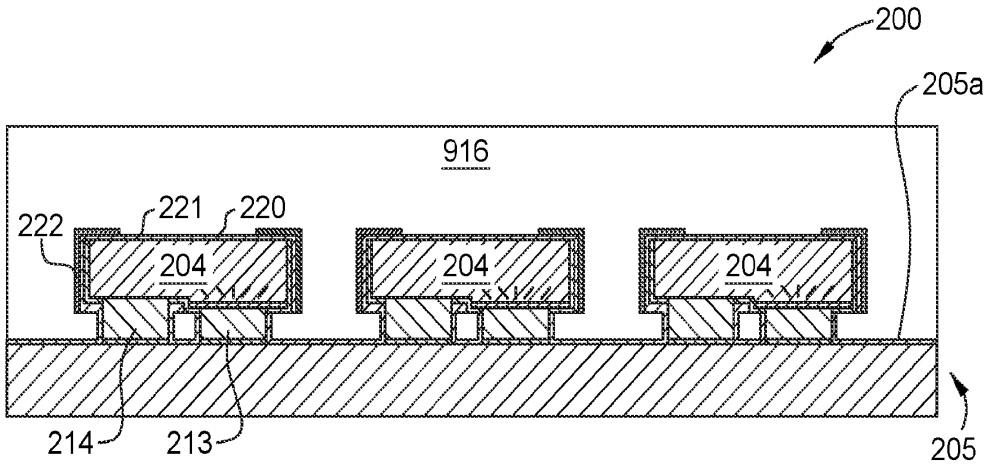


FIG. 9B

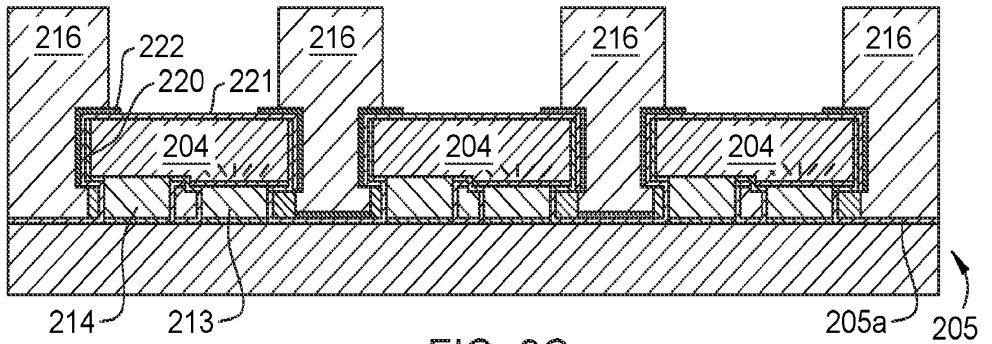


FIG. 9C