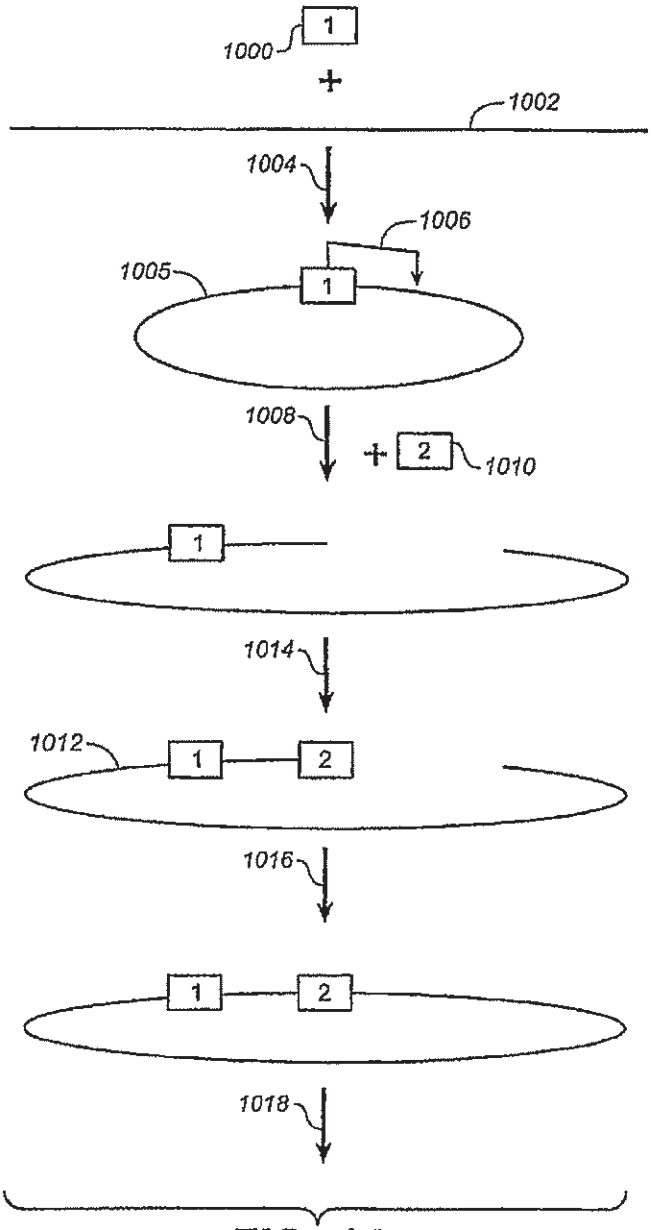

1000
1
+
1002
1004
1006
1005
1
1008
+
2
1010
1
1014
1012
1
2
1016
1
2
1018

FIG. 1A

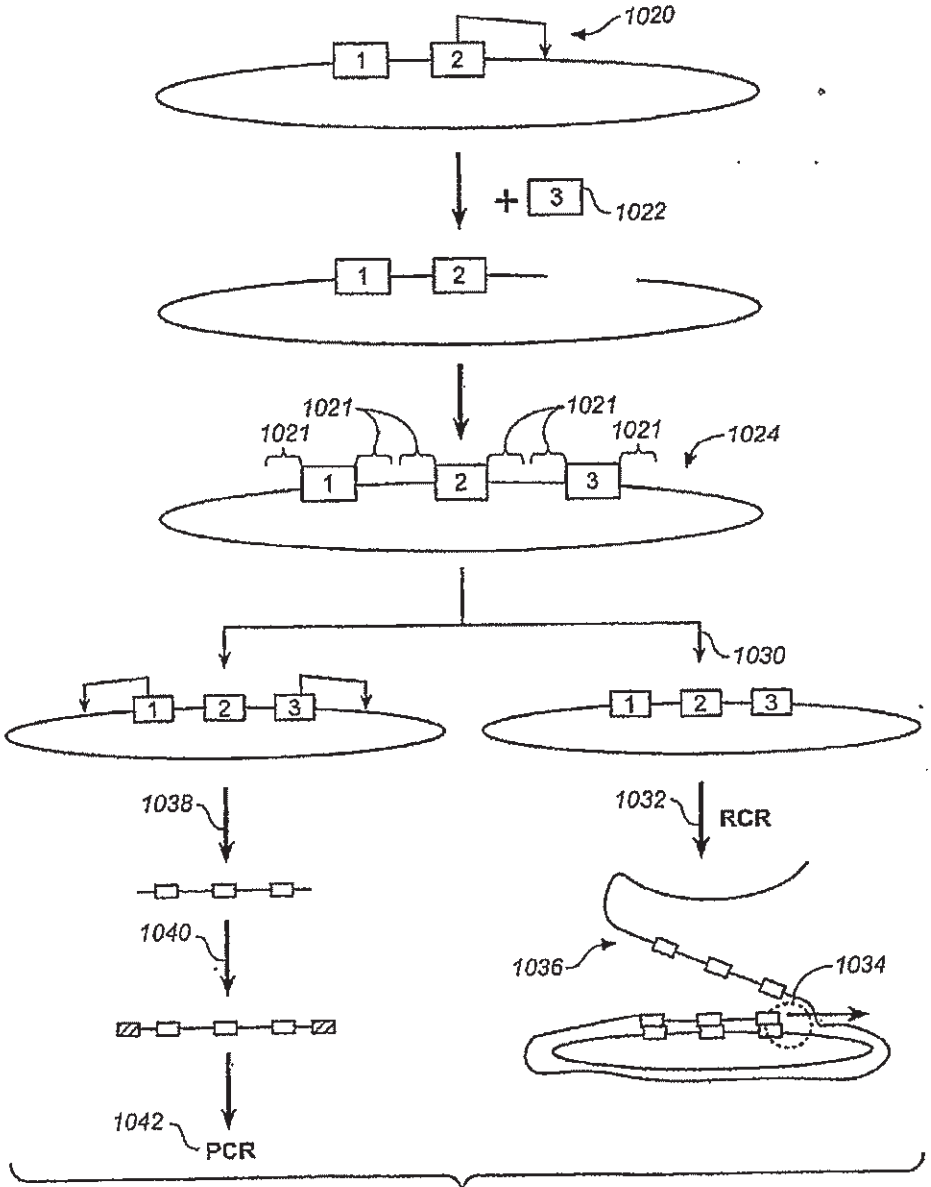

1020
1
2
+
3
1022
1021
1021
1021
1021
1024
1030
1038
1040
1042
PCR
1032
RCR
1036
1034

FIG. 1B

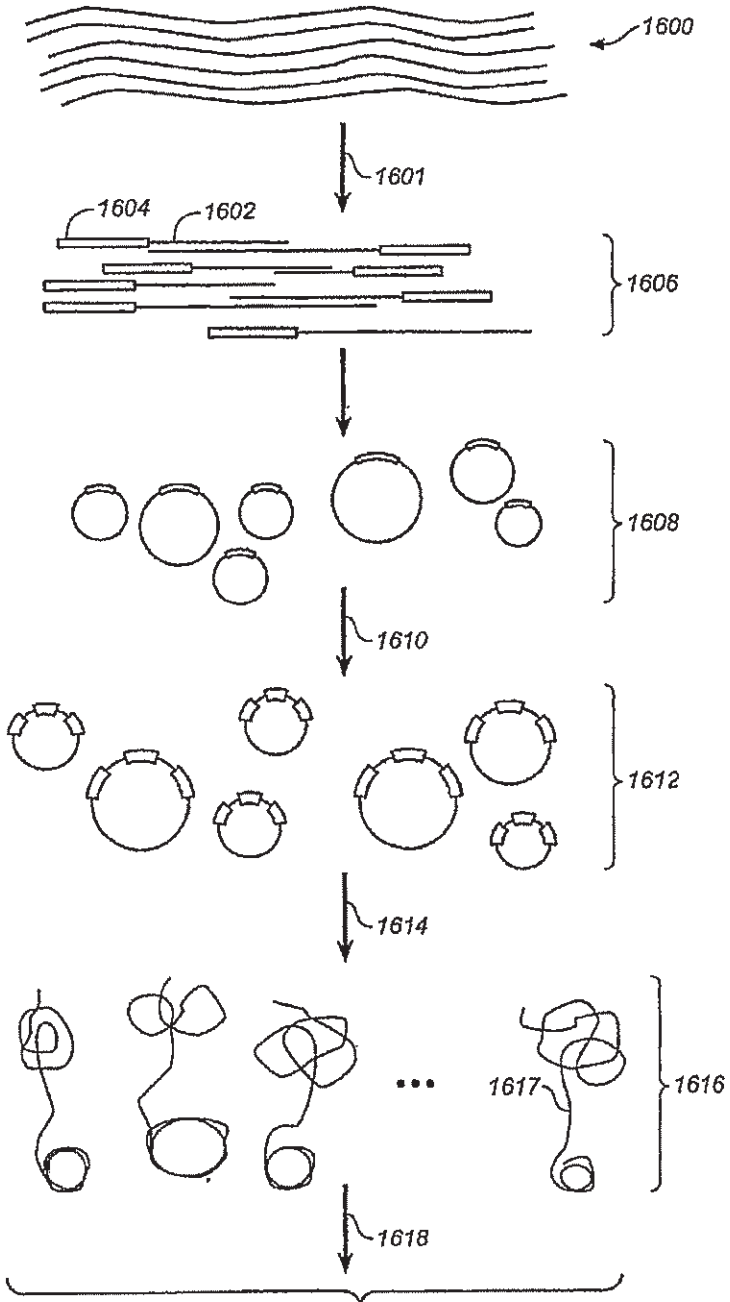


FIG. 1C

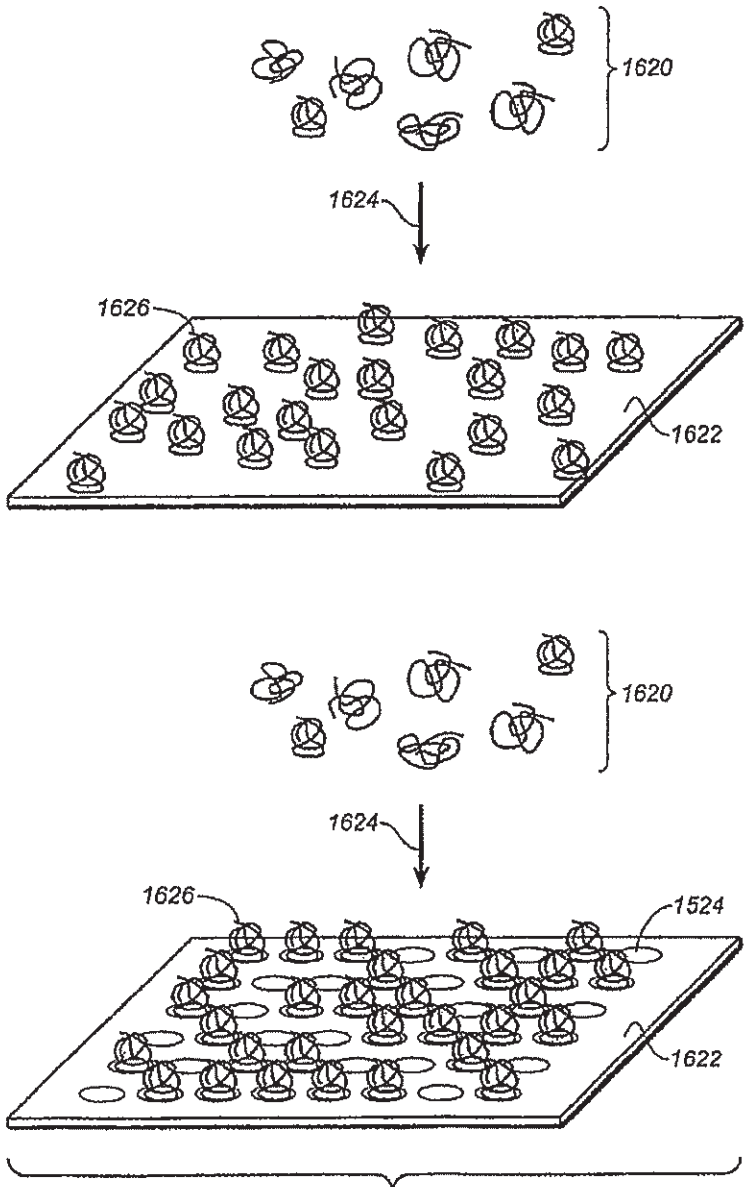


FIG. 1D

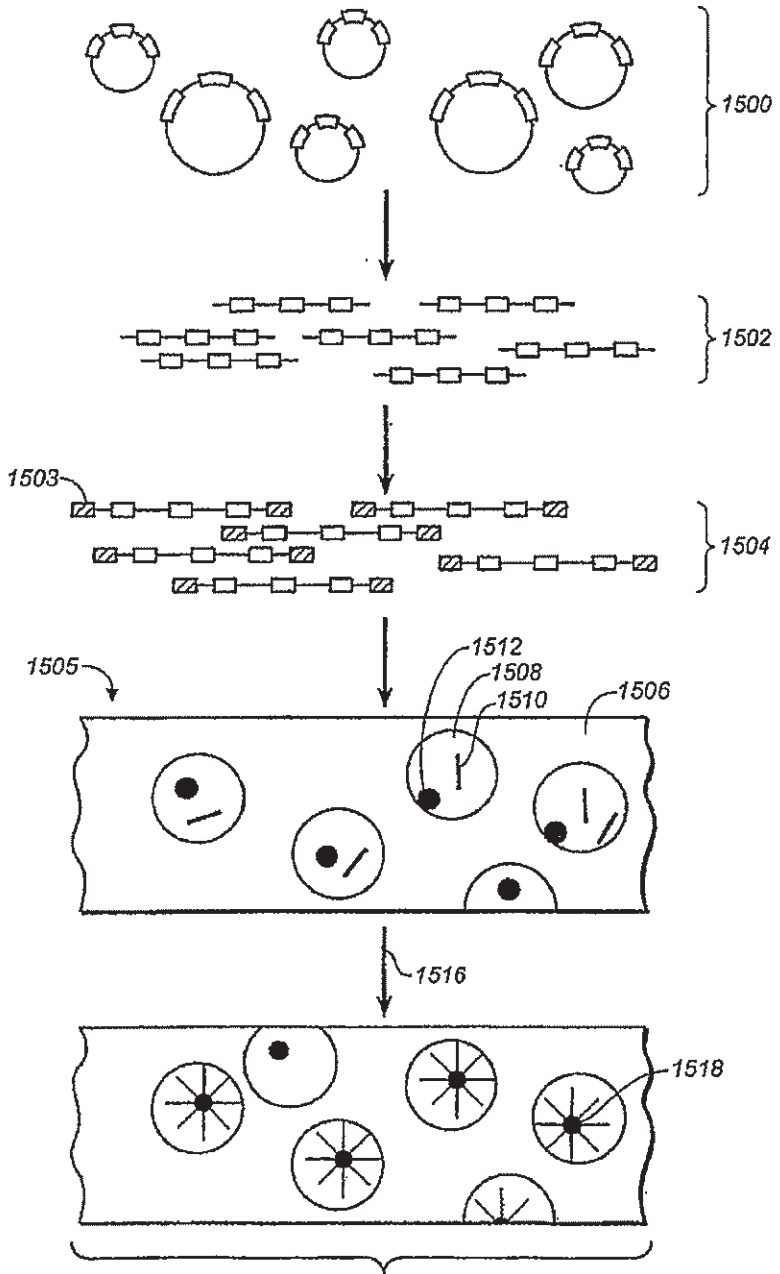


FIG. 1E

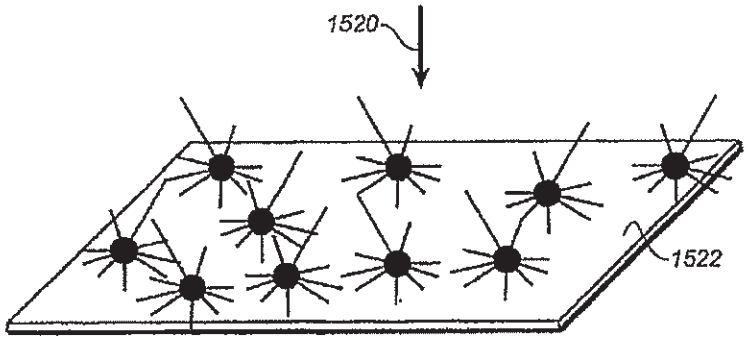


FIG. 1F

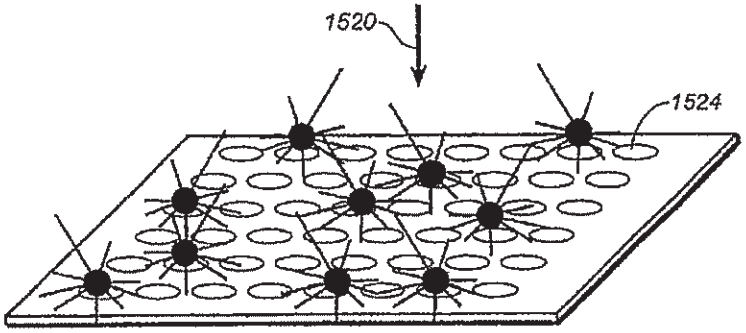


FIG. 1G

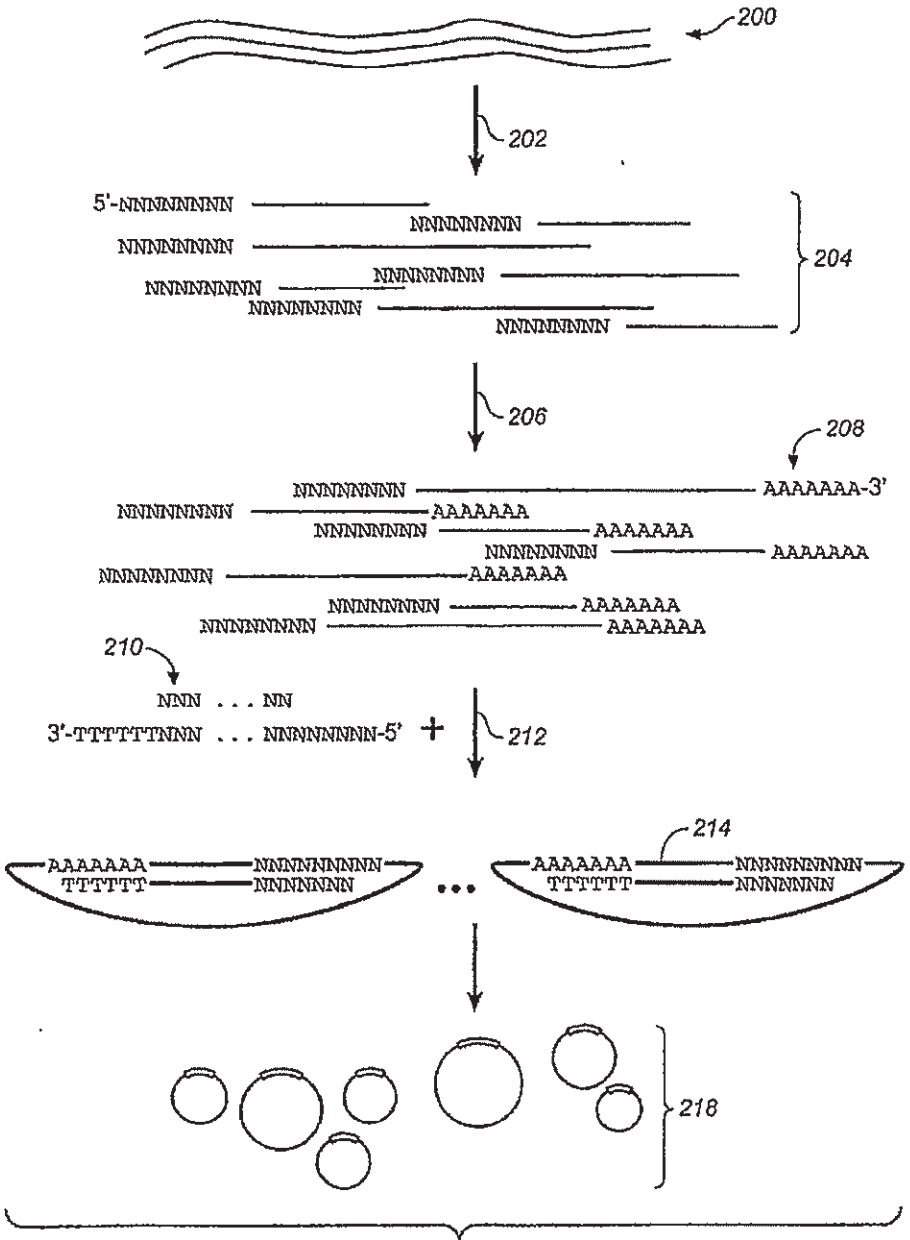

200
202
5'-NNNNNNNNN
NNNNNNNNN
NNNNNNNNN
NNNNNNNNN
NNNNNNNNN
NNNNNNNNN
NNNNNNNNN
204
206
208
NNNNNNNNN
AAAAAAA-3'
NNNNNNNNN
AAAAAAA
NNNNNNNNN
AAAAAAA
NNNNNNNNN
AAAAAAA
NNNNNNNNN
AAAAAAA
NNNNNNNNN
AAAAAAA
NNNNNNNNN
AAAAAAA
210
NNN . . . NN
3'-TTTTTTNNN . . . NNNNNNNNN-5'
+
212
214
AAAAAAA
NNNNNNNNN
TTTTTT
NNNNNNN
AAAAAAA
NNNNNNNNN
TTTTTT
NNNNNNN
218

FIG. 2A

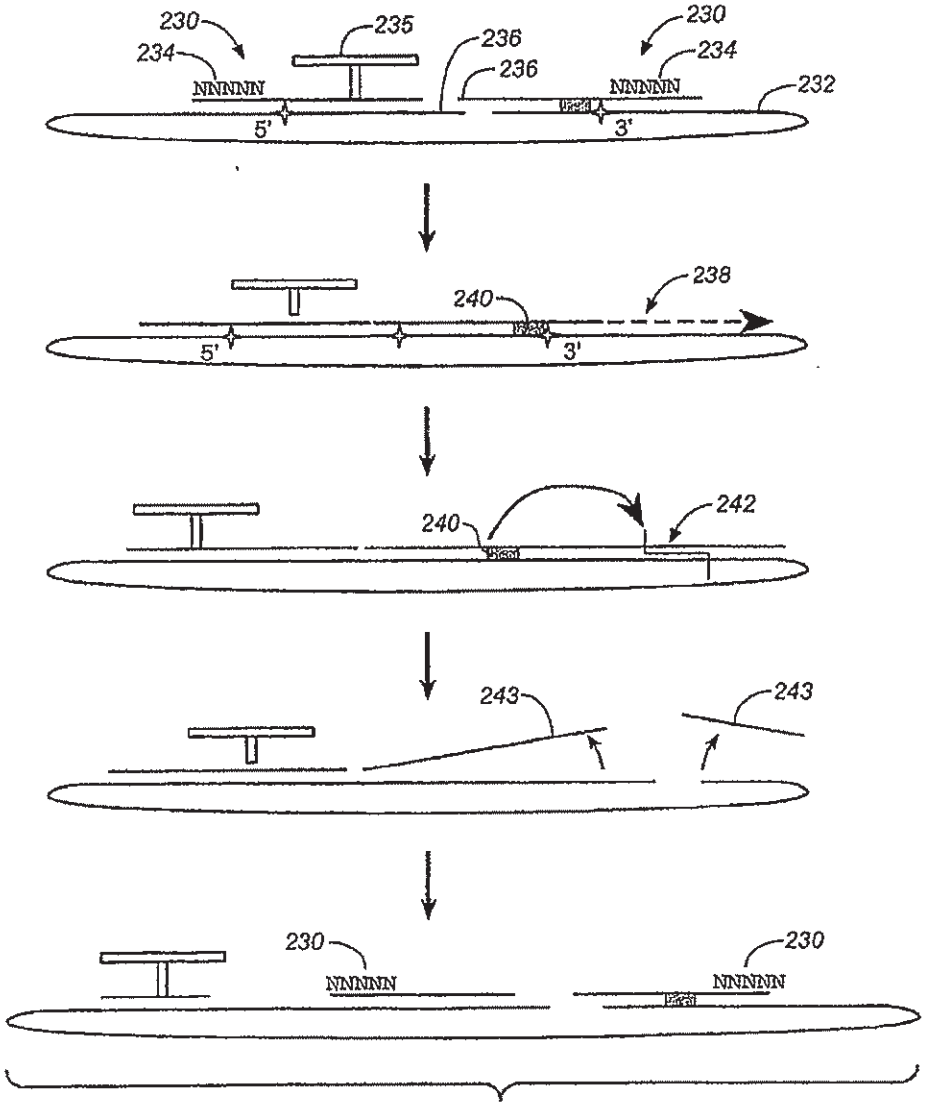

230
235
236
230
234
234
236
NNNNNN
NNNNNN
232
5'
3'
238
240
5'
3'
240
242
243
243
230
230
NNNNNN
NNNNNN

FIG. 2B

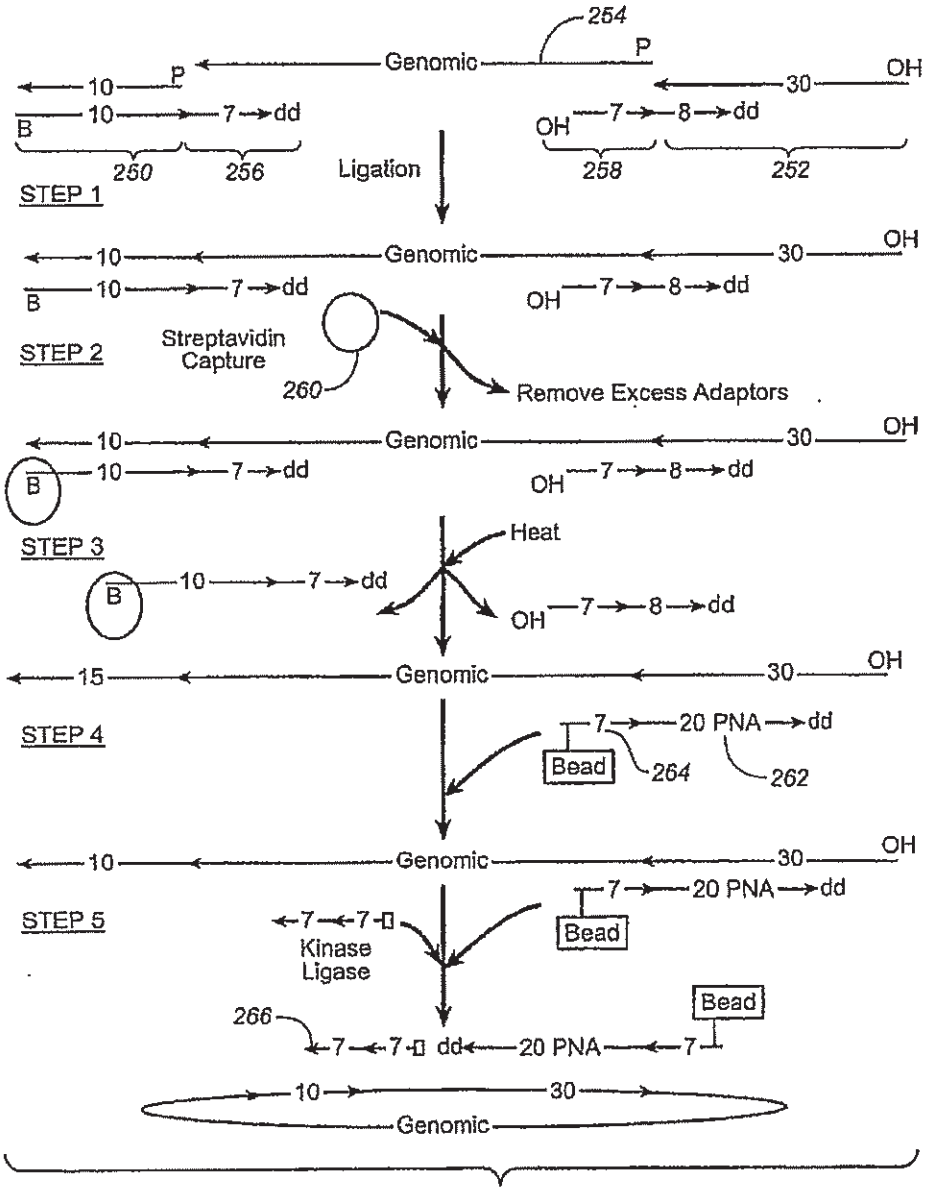

254
Genomic
P
OH
10
P
30
B
10
7
dd
OH
7
8
dd
250
256
Ligation
258
252
STEP 1
10
Genomic
30
OH
B
10
7
dd
OH
7
8
dd
STEP 2
Streptavidin
Capture
260
Remove Excess Adaptors
10
Genomic
30
OH
B
10
7
dd
OH
7
8
dd
STEP 3
Heat
B
10
7
dd
OH
7
8
dd
15
Genomic
30
OH
STEP 4
7
20 PNA
dd
Bead
264
262
10
Genomic
30
OH
STEP 5
7
7
Kinase
Ligase
7
20 PNA
dd
Bead
Bead
266
7
7
dd
20 PNA
7
10
30
Genomic

FIG. 2C

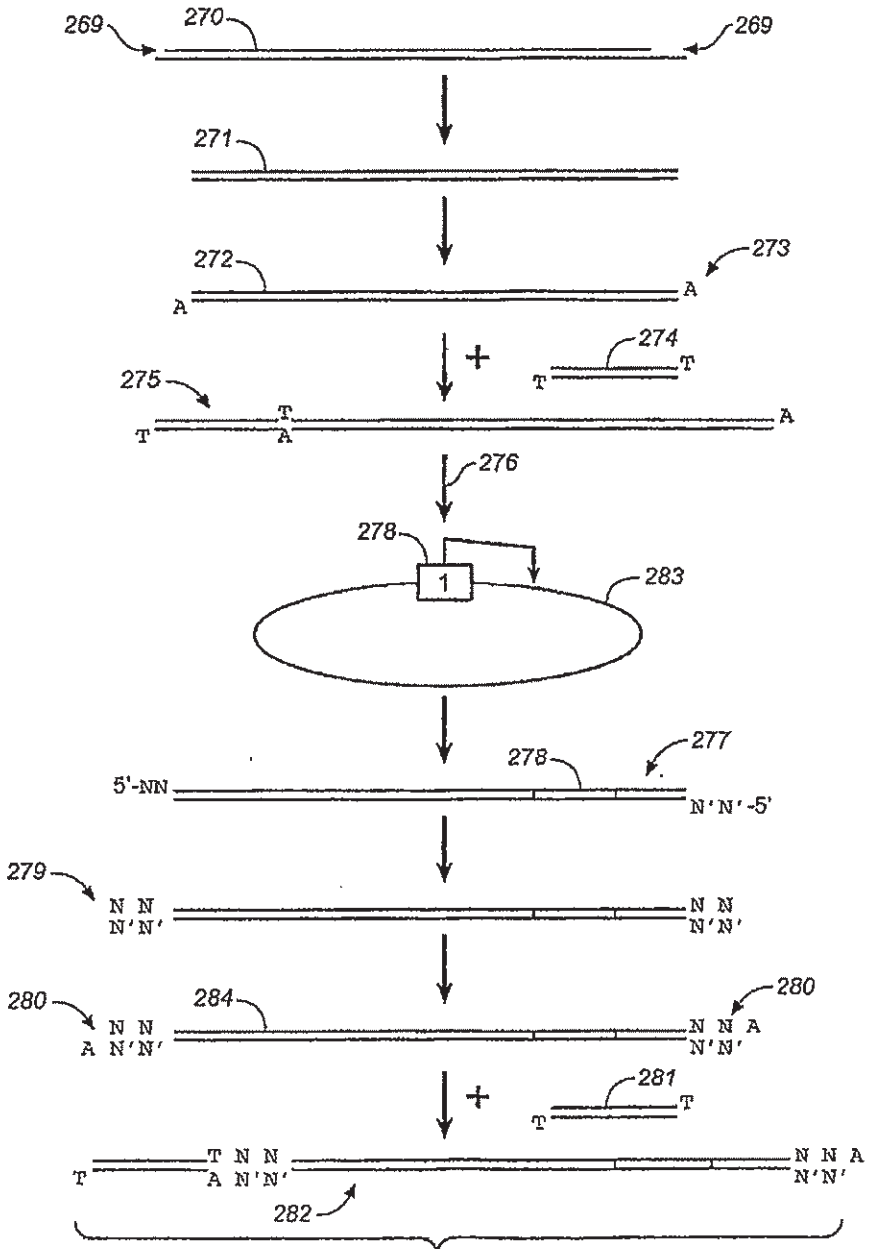

269
270
269
271
272
273
A
A
274
T
T
275
T
T
A
A
276
278
1
283
278
277
5'-NN
N'N'-5'
279
N N
N'N'
N N
N'N'
280
284
280
N N
A N'N'
N N A
N'N'
281
T
T
T N N
T
A N'N'
N N A
N'N'
282

FIG. 2D

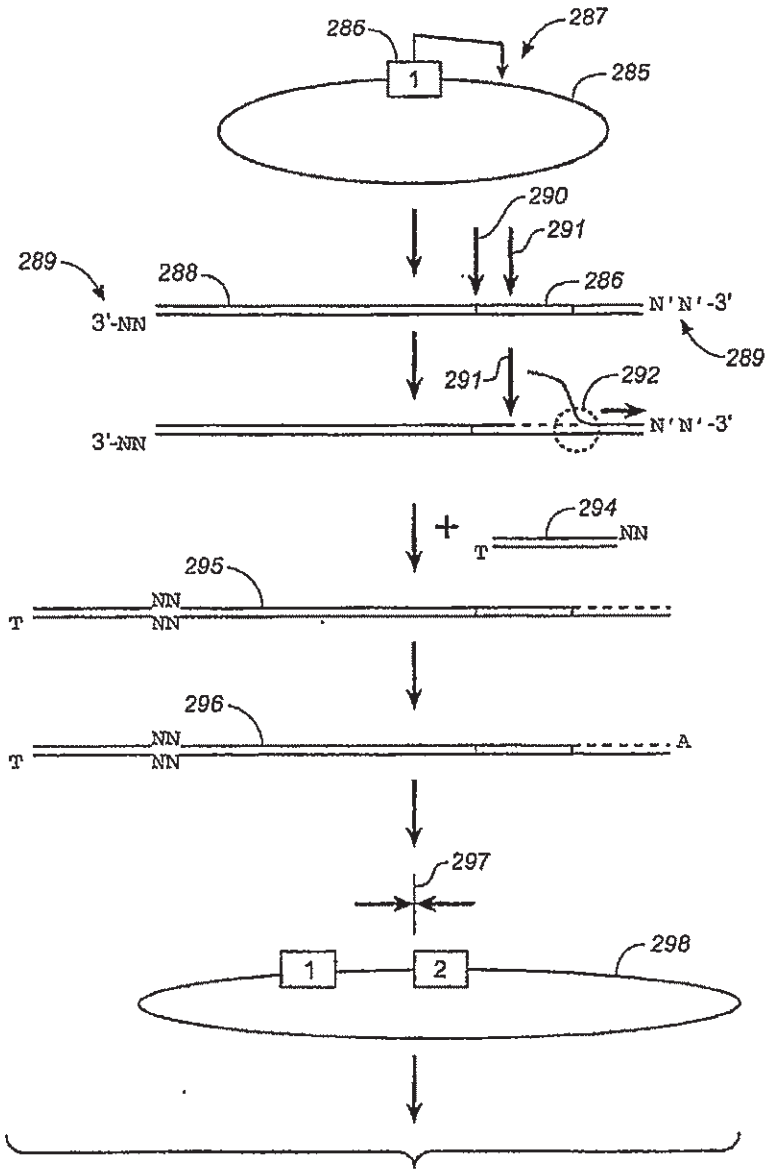

286
287
1
285
290
291
289
288
3'-NN
N'N'-3'
289
291
292
3'-NN
N'N'-3'
294
NN
T
295
NN
NN
T
296
NN
NN
T
A
297
1
2
298

FIG. 2E

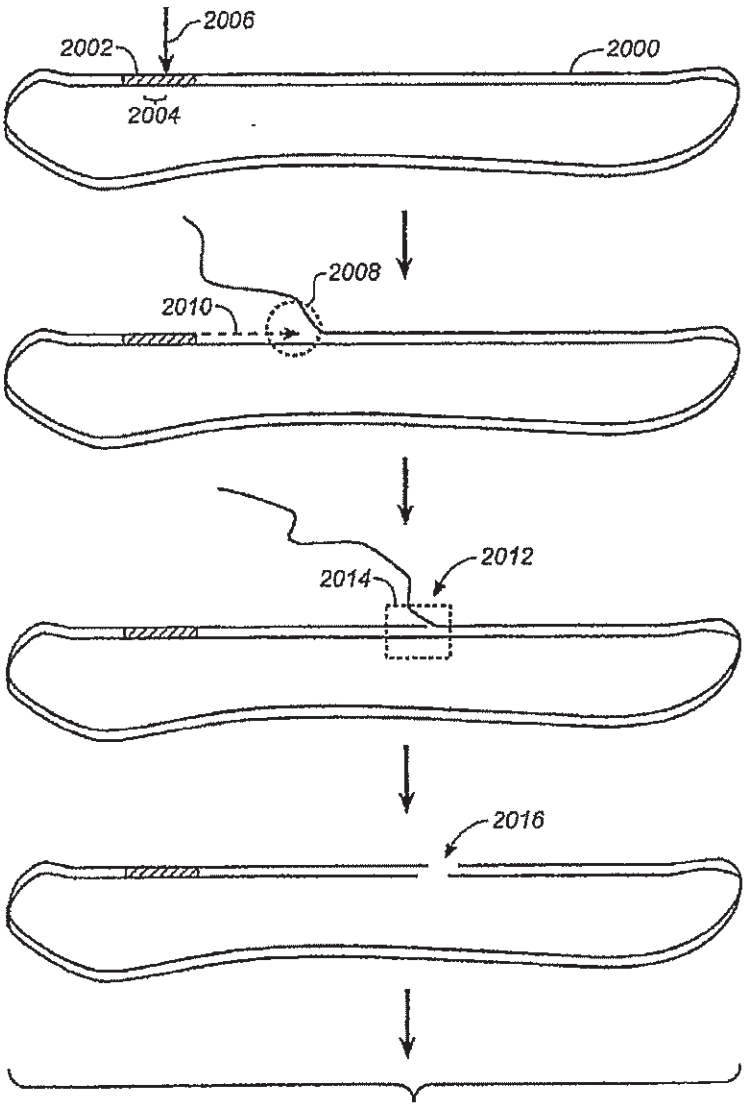


FIG. 2F

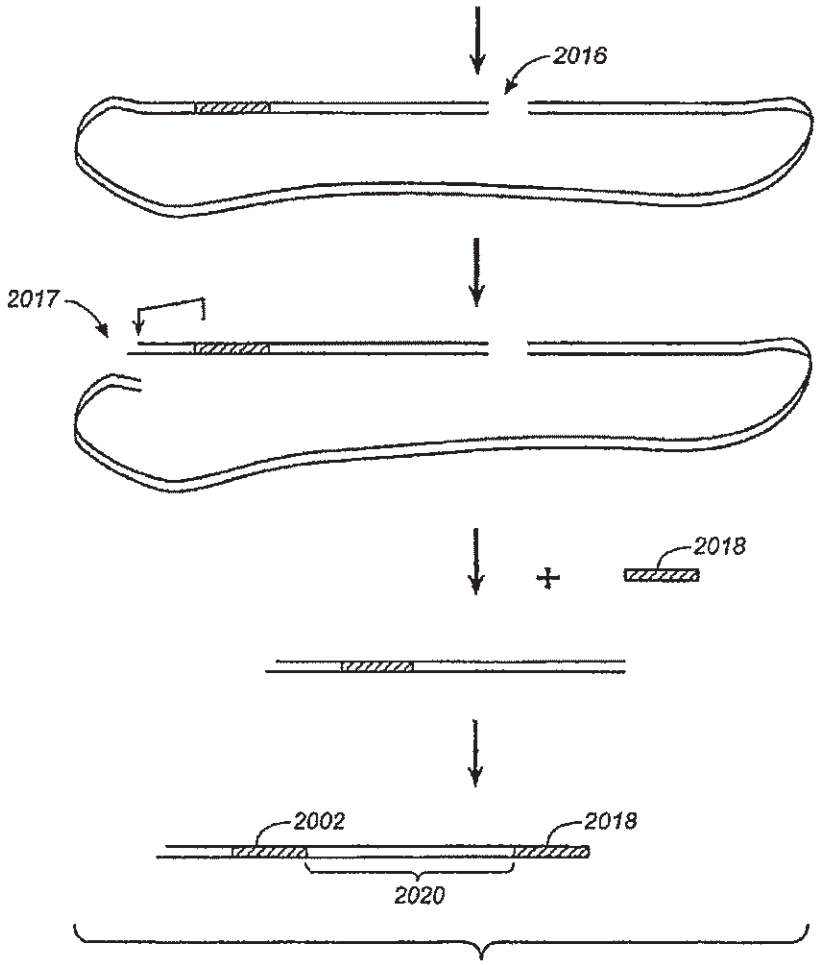


FIG. 2G

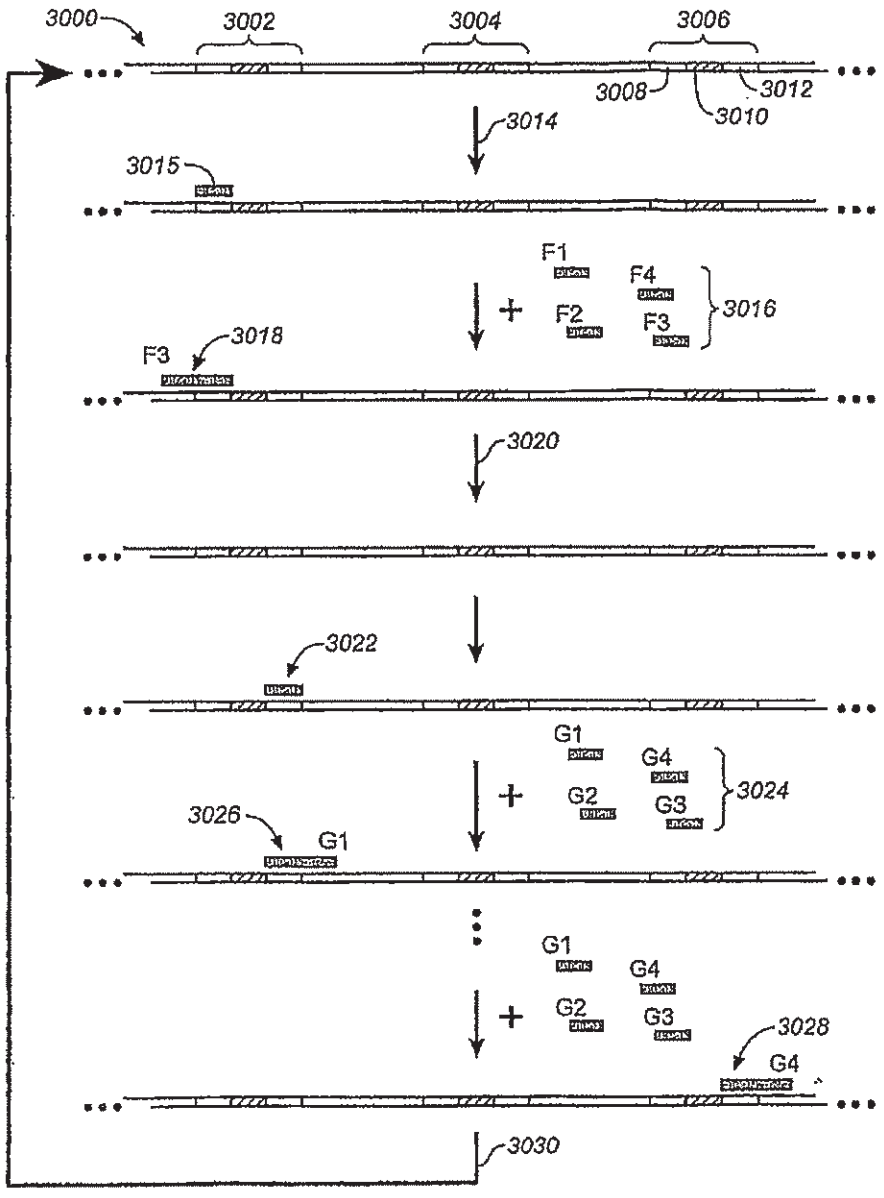

3000
3002
3004
3006
3008
3010
3012
3014
3015
F1
F4
F2
F3
3016
3018
F3
3020
3022
G1
G4
G2
G3
3024
3026
G1
G1
G4
G2
G3
3028
G4
3030

FIG. 3A

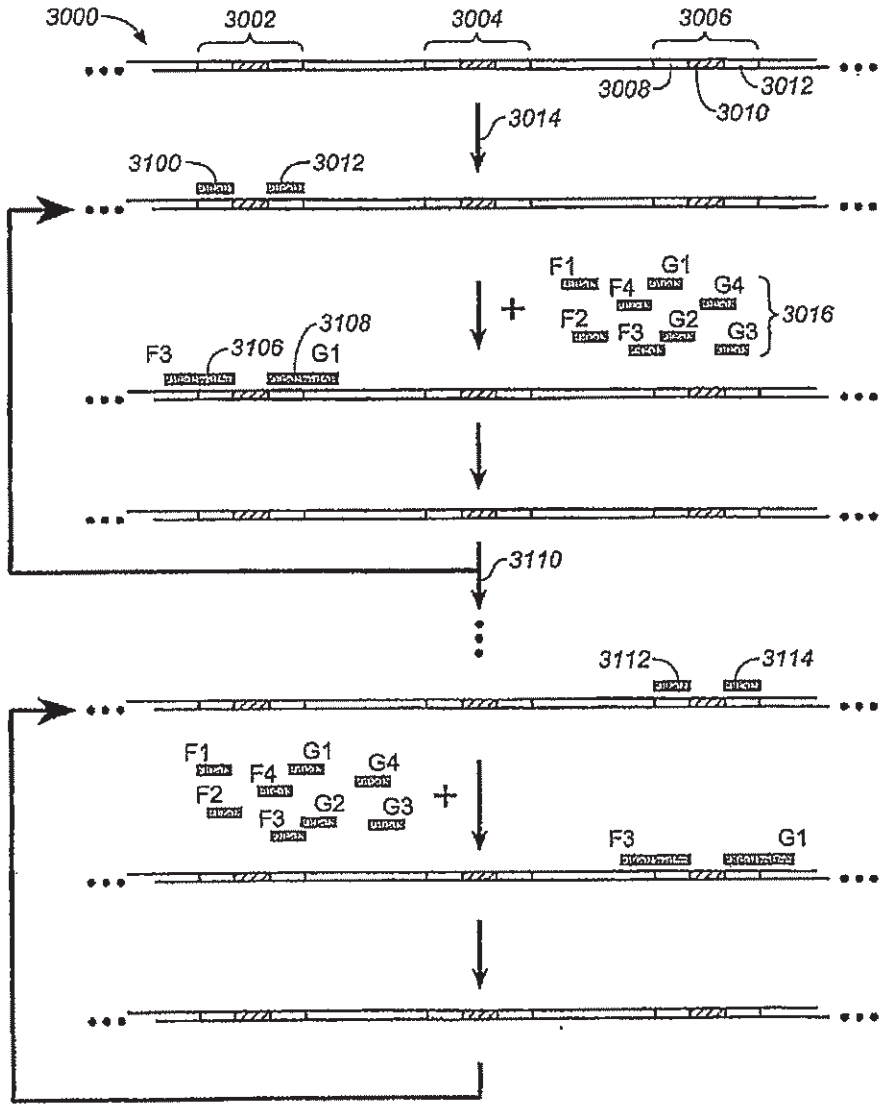

3000
3002
3004
3006
3008
3010
3012
3014
3100
3012
F1
G1
F4
G4
F2
F3
G2
G3
3016
F3
3106
3108
G1
3110
3112
3114
F1
G1
F4
G4
F2
G2
G3
F3
F3
G1

FIG. 3B

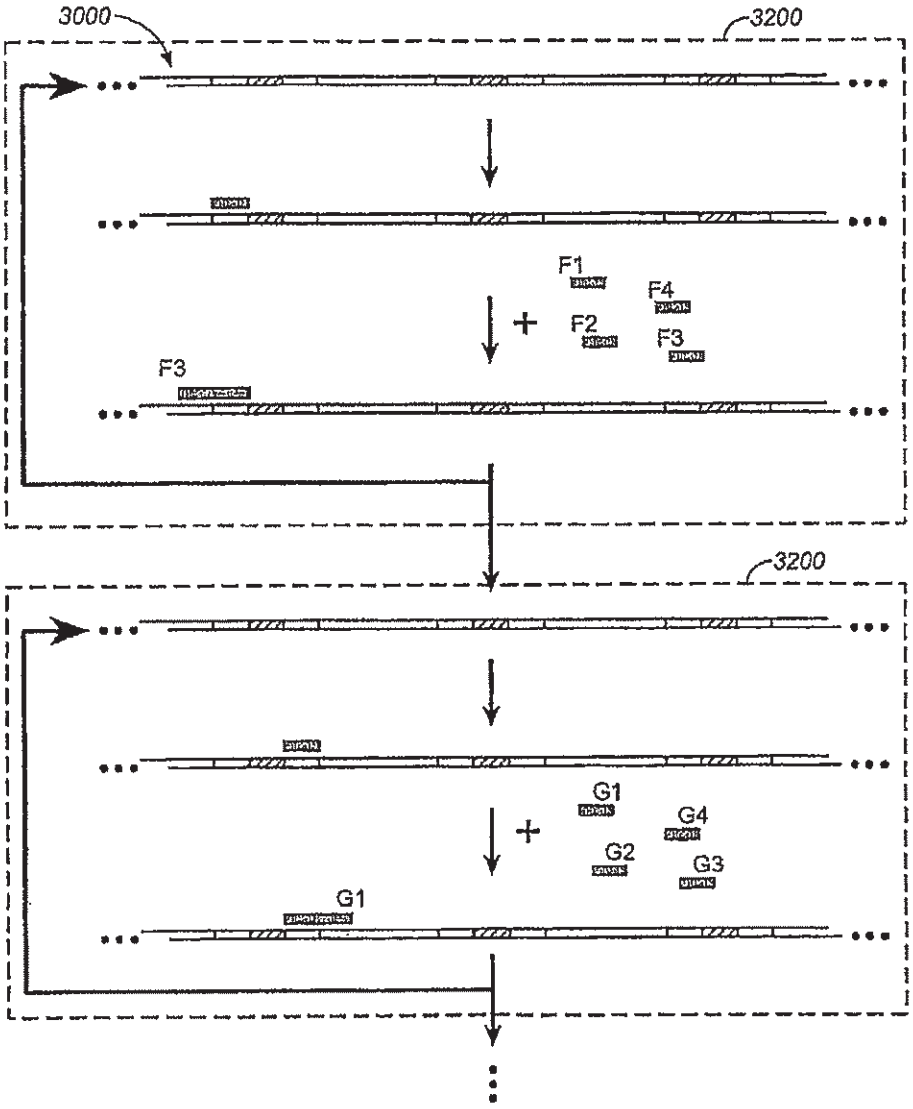


FIG. 3C

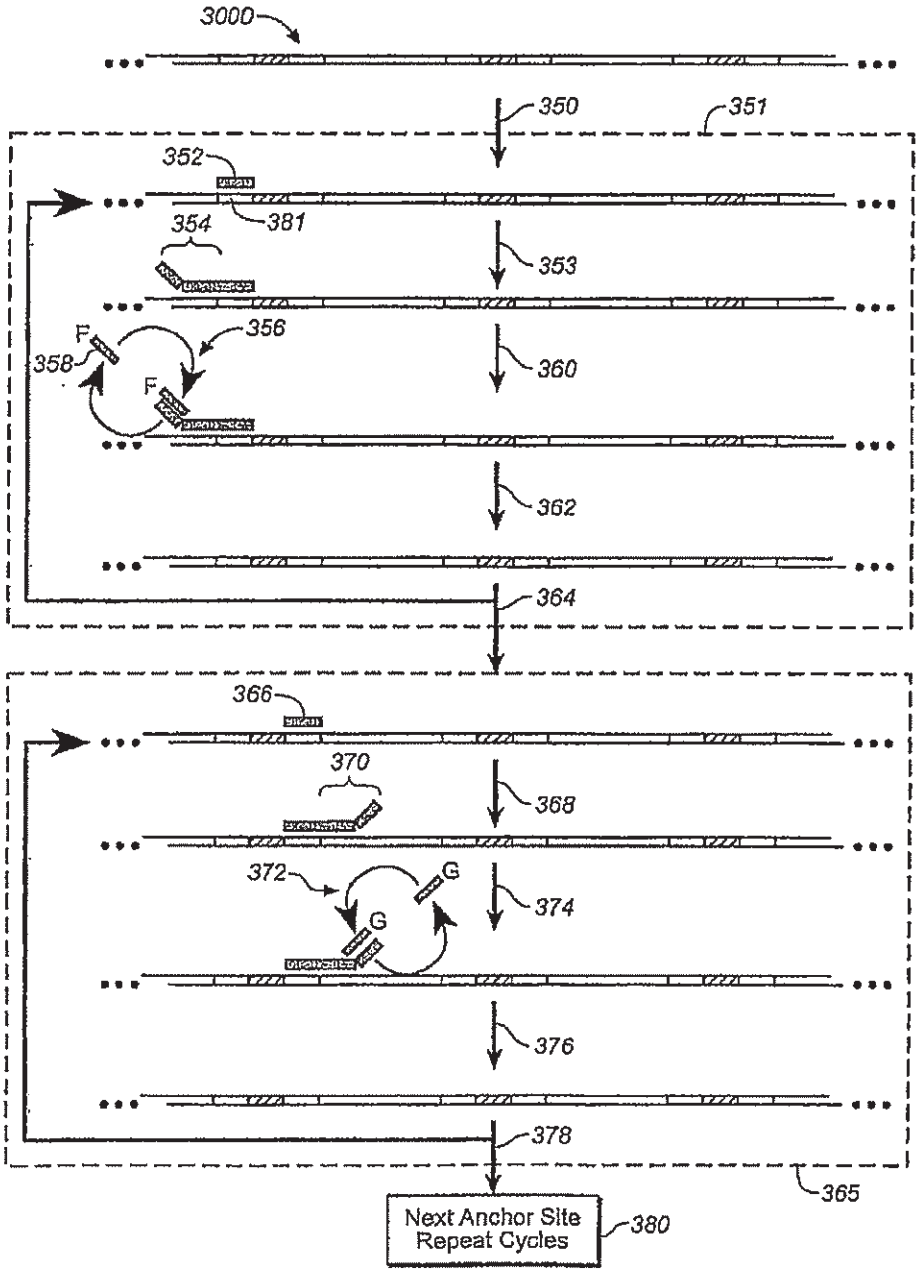

3000
350
351
352
354
381
353
356
F
358
F
360
362
364
366
370
368
372
G
G
374
376
378
365
Next Anchor Site
Repeat Cycles
380

FIG. 3D

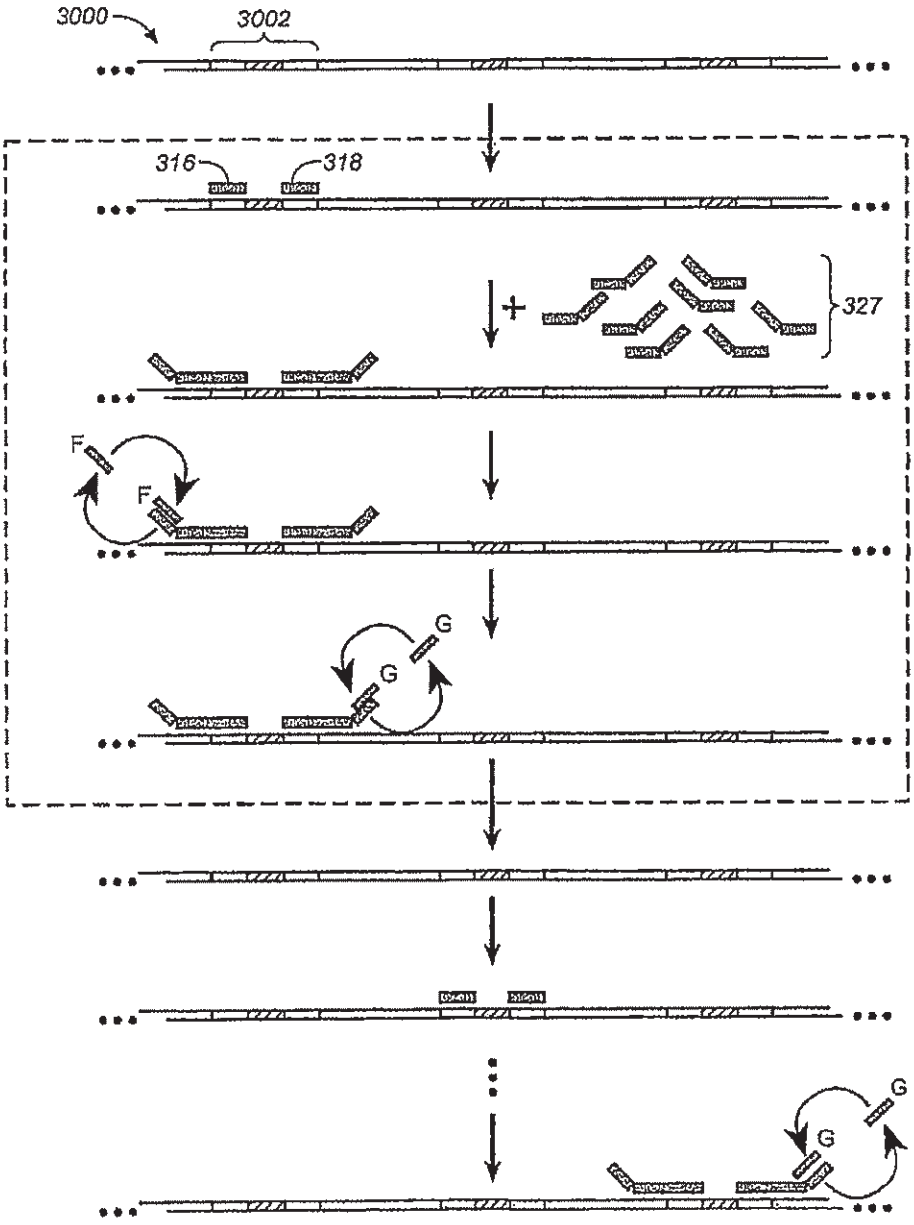


FIG. 3E

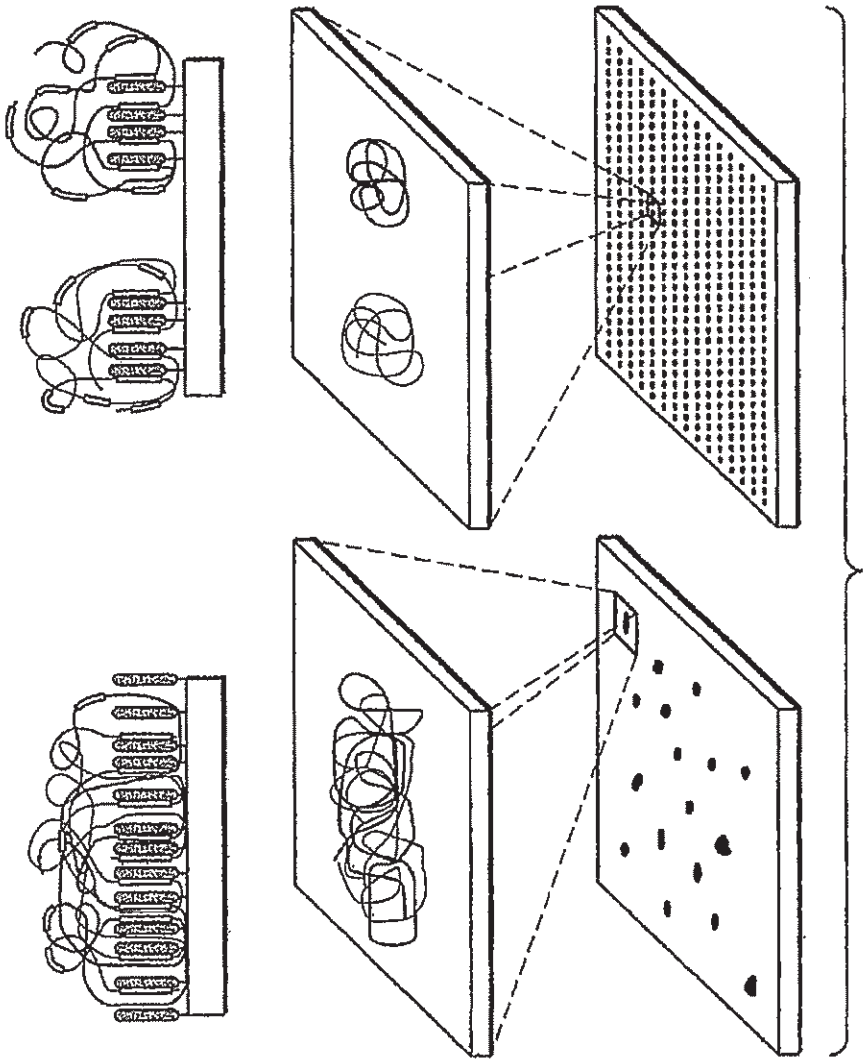


FIG. 4

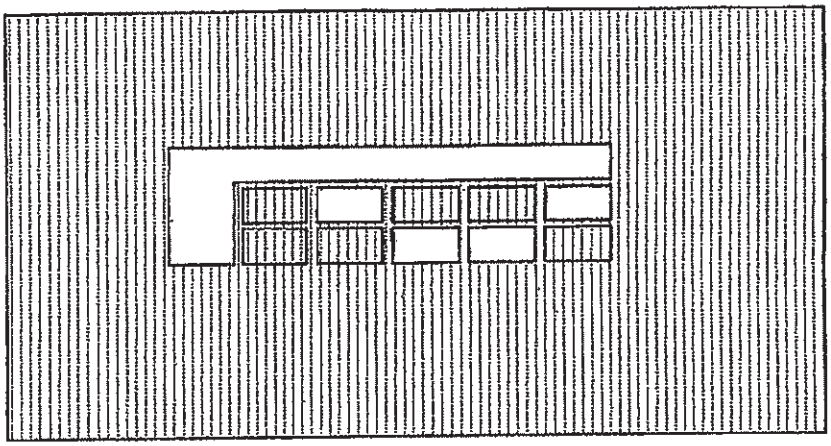


FIG. 5

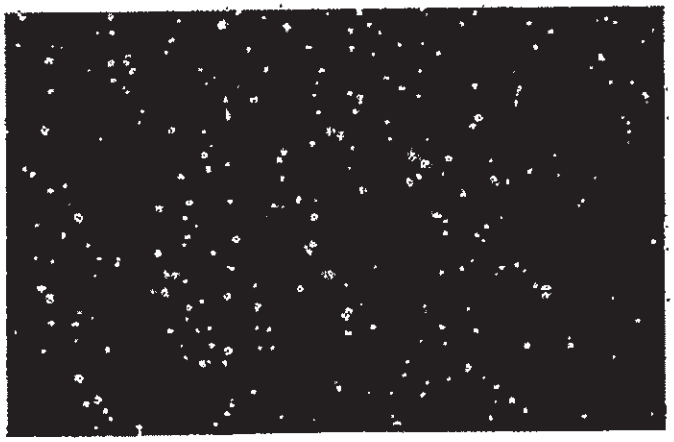


FIG. 6

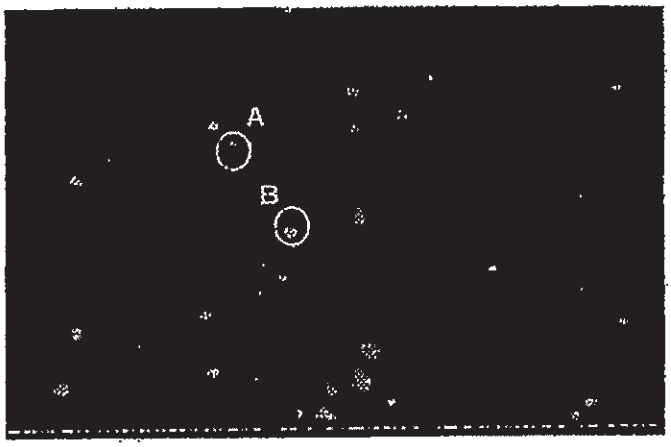


FIG. 7

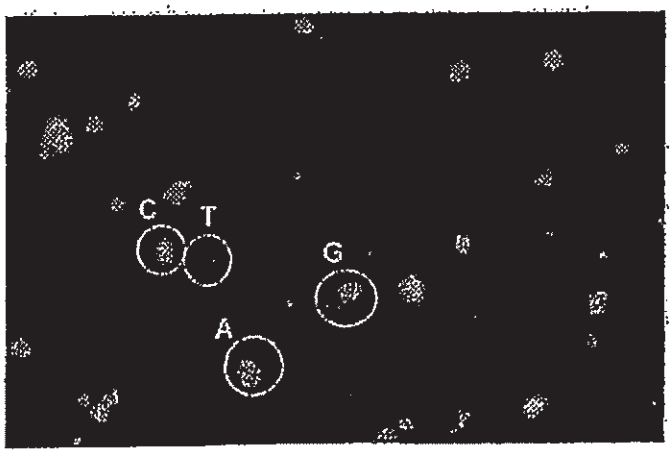


FIG. 8

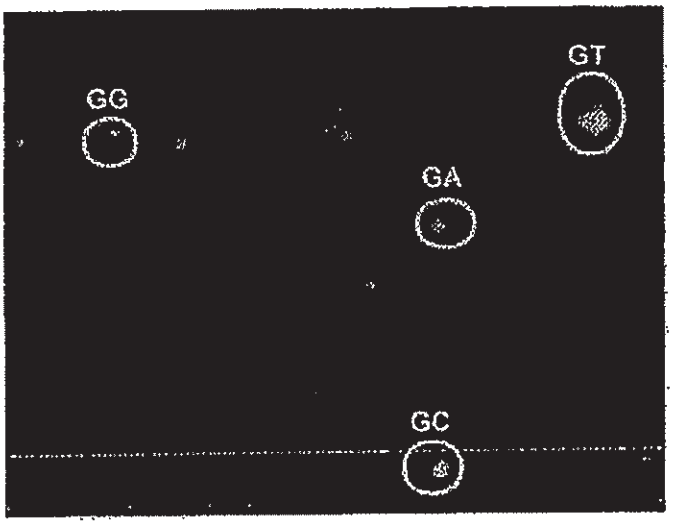


FIG. 9

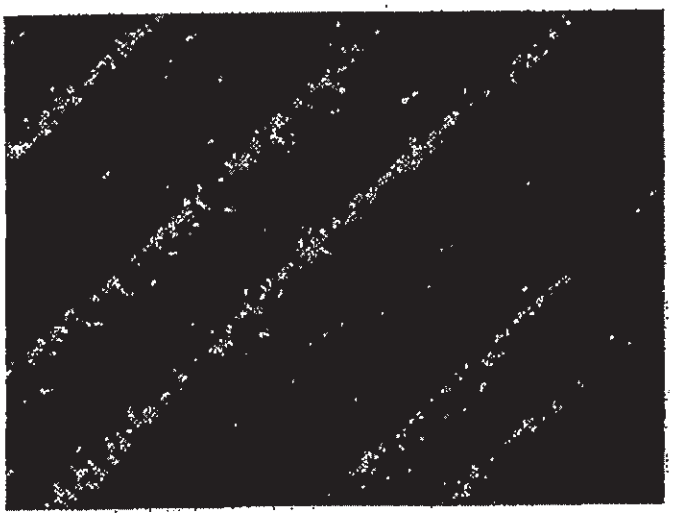


FIG. 10