Fig. 1

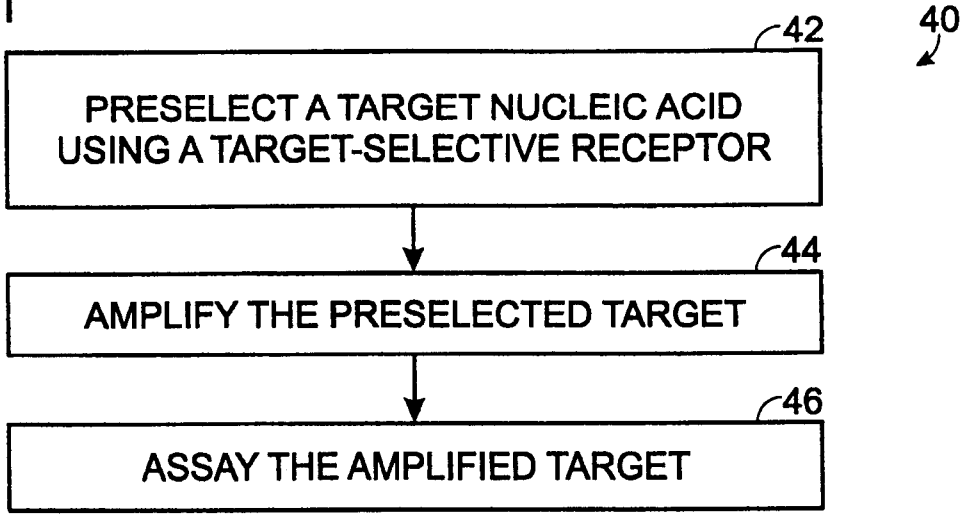

42
40
PRESELECT A TARGET NUCLEIC ACID USING A TARGET-SELECTIVE RECEPTOR
44
AMPLIFY THE PRESELECTED TARGET
46
ASSAY THE AMPLIFIED TARGET

Fig. 2

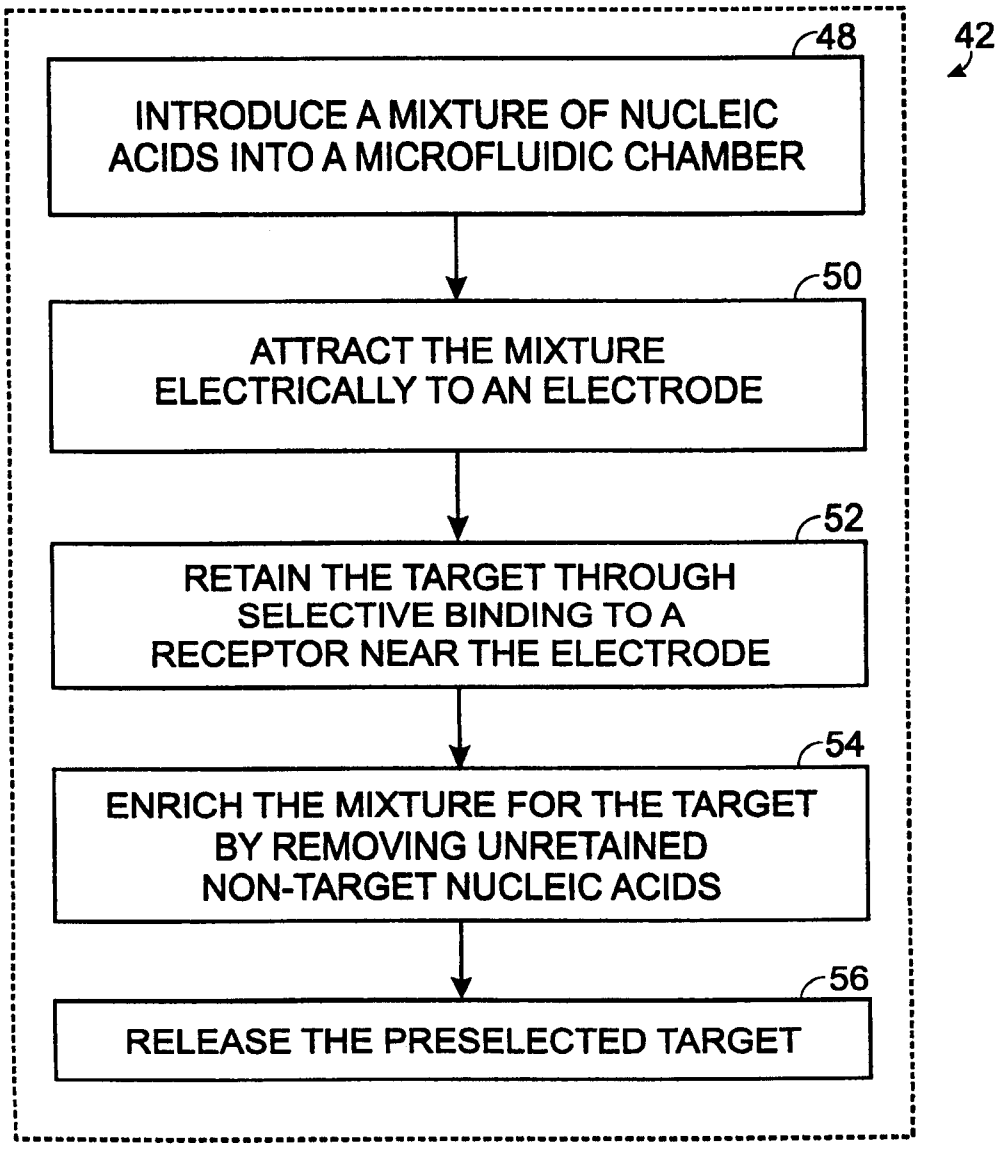

48
42
INTRODUCE A MIXTURE OF NUCLEIC ACIDS INTO A MICROFLUIDIC CHAMBER
50
ATTRACT THE MIXTURE ELECTRICALLY TO AN ELECTRODE
52
RETAIN THE TARGET THROUGH SELECTIVE BINDING TO A RECEPTOR NEAR THE ELECTRODE
54
ENRICH THE MIXTURE FOR THE TARGET BY REMOVING UNRETAINED NON-TARGET NUCLEIC ACIDS
56
RELEASE THE PRESELECTED TARGET

Fig. 3

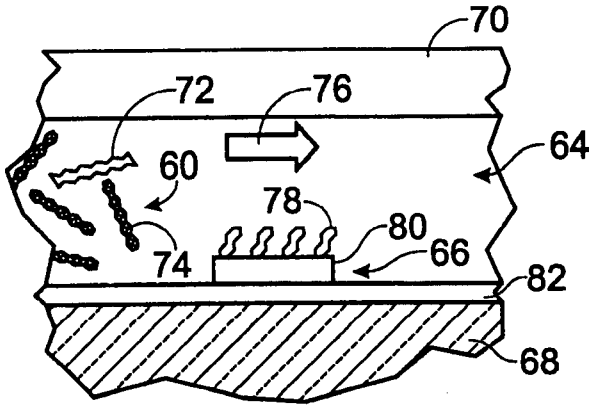


Fig. 4

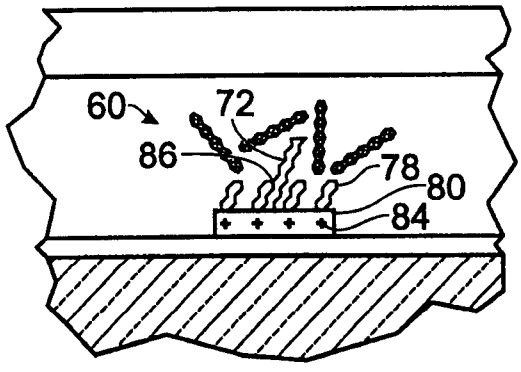


Fig. 5

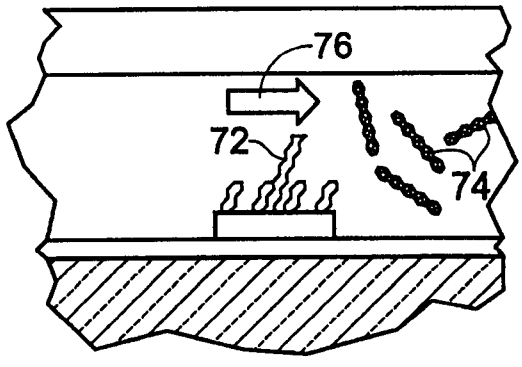


Fig. 6

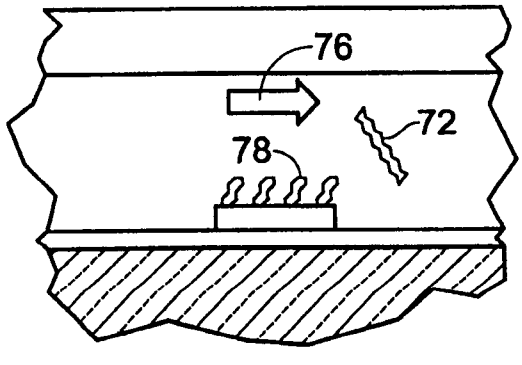


Fig. 7

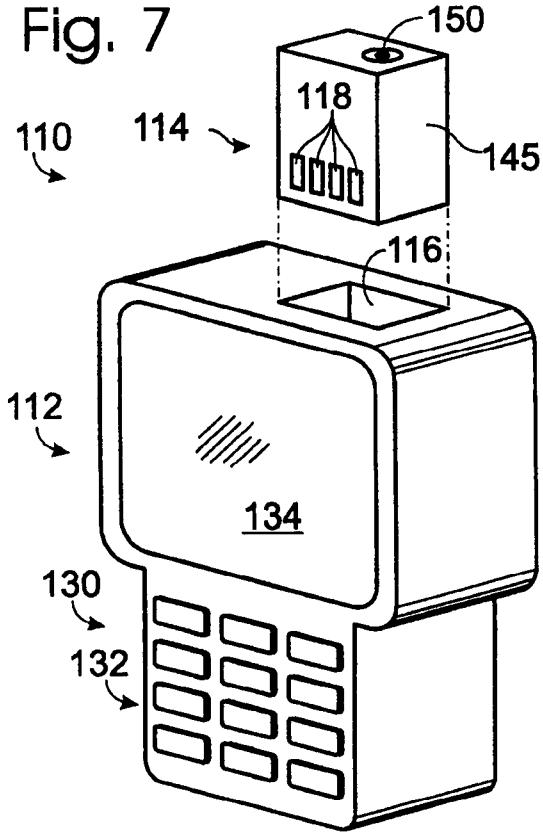


Fig. 8

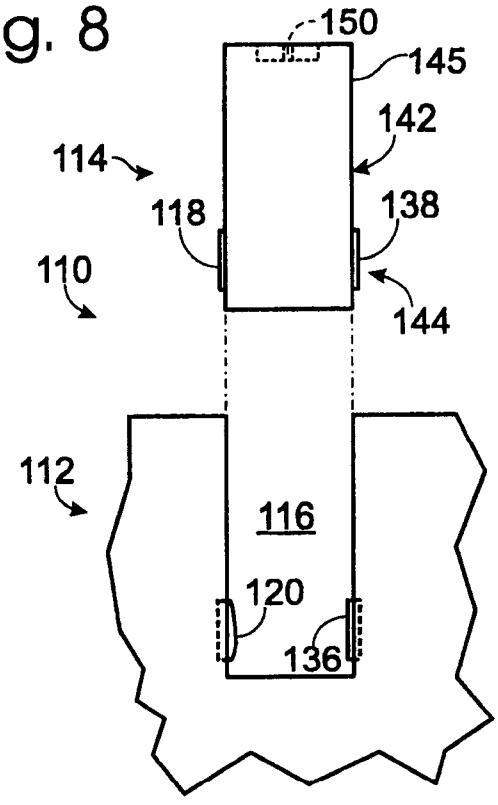


Fig. 9

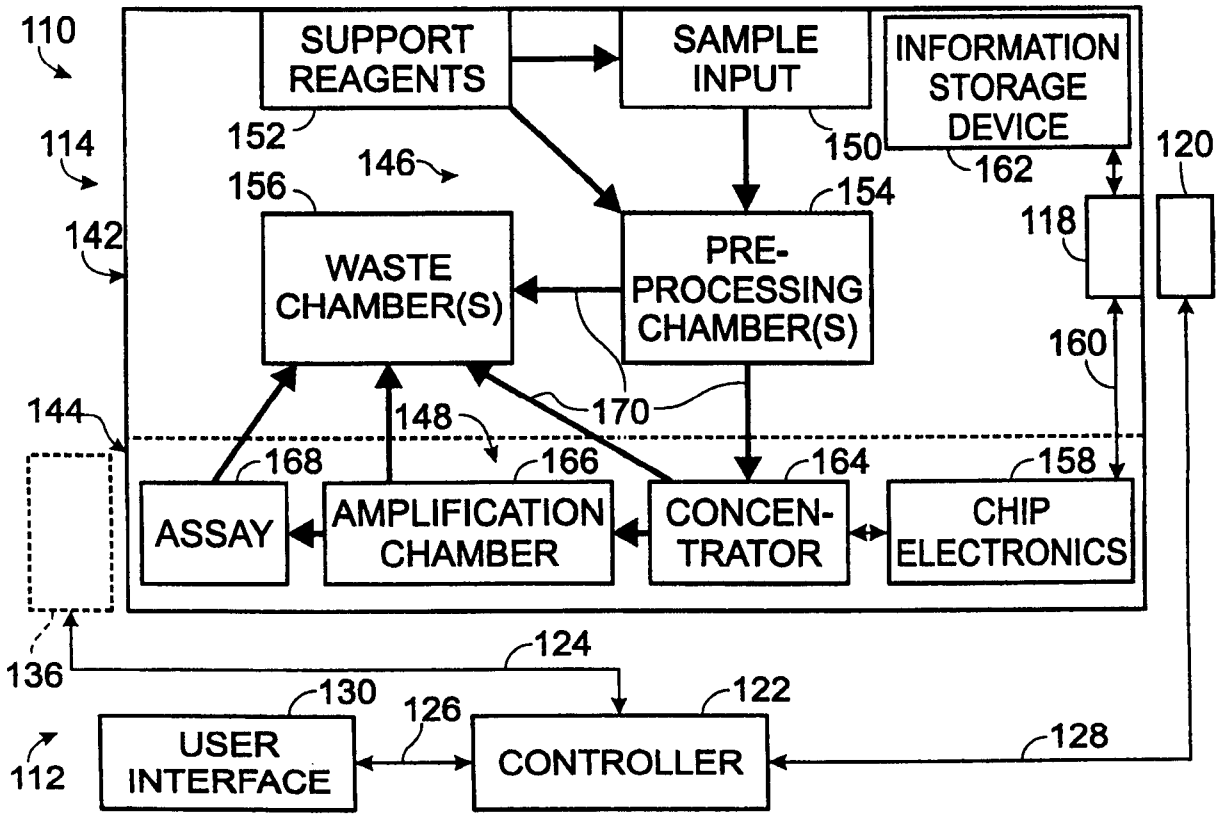


Fig. 10

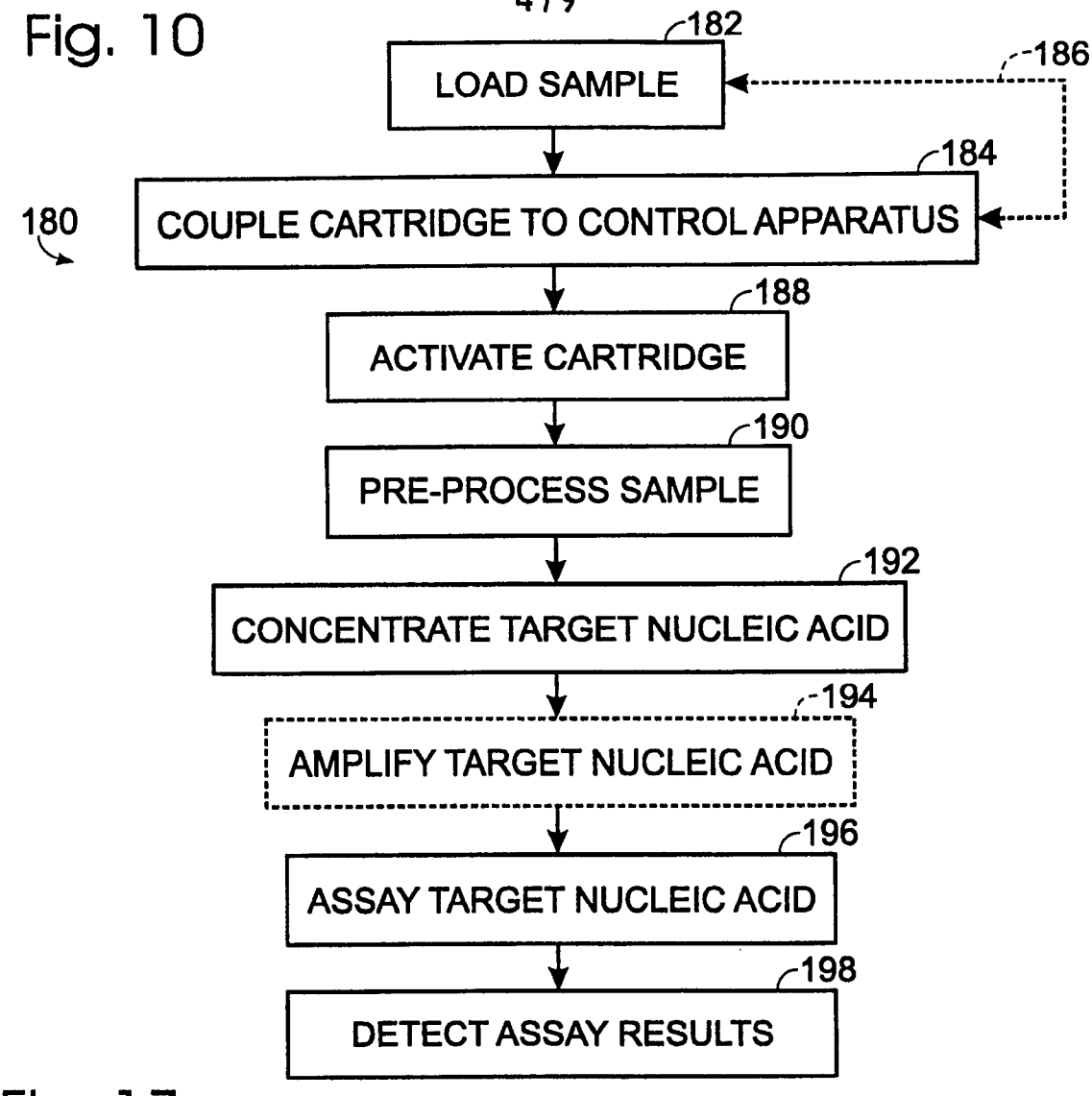

LOAD SAMPLE
182
186
184
180
COUPLE CARTRIDGE TO CONTROL APPARATUS
188
ACTIVATE CARTRIDGE
190
PRE-PROCESS SAMPLE
192
CONCENTRATE TARGET NUCLEIC ACID
194
AMPLIFY TARGET NUCLEIC ACID
196
ASSAY TARGET NUCLEIC ACID
198
DETECT ASSAY RESULTS

Fig. 17

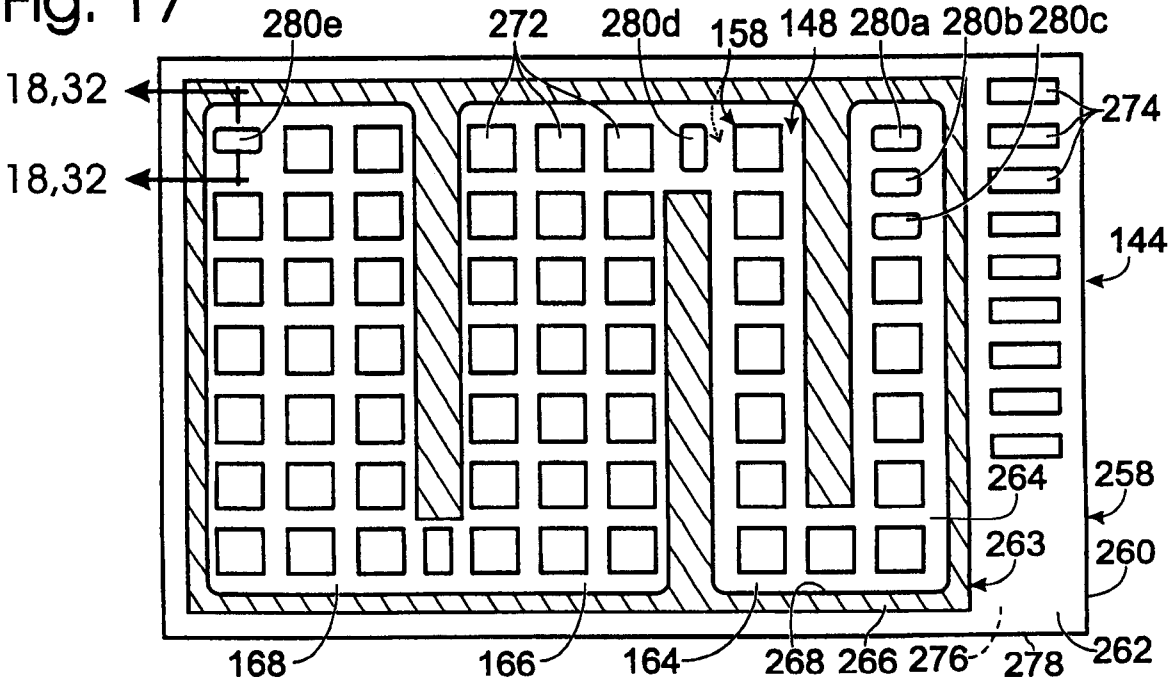

280e
272
280d
158
148
280a
280b
280c
18,32
18,32
274
144
264
258
263
260
168
166
164
268
266
276
278
262

Fig. 11

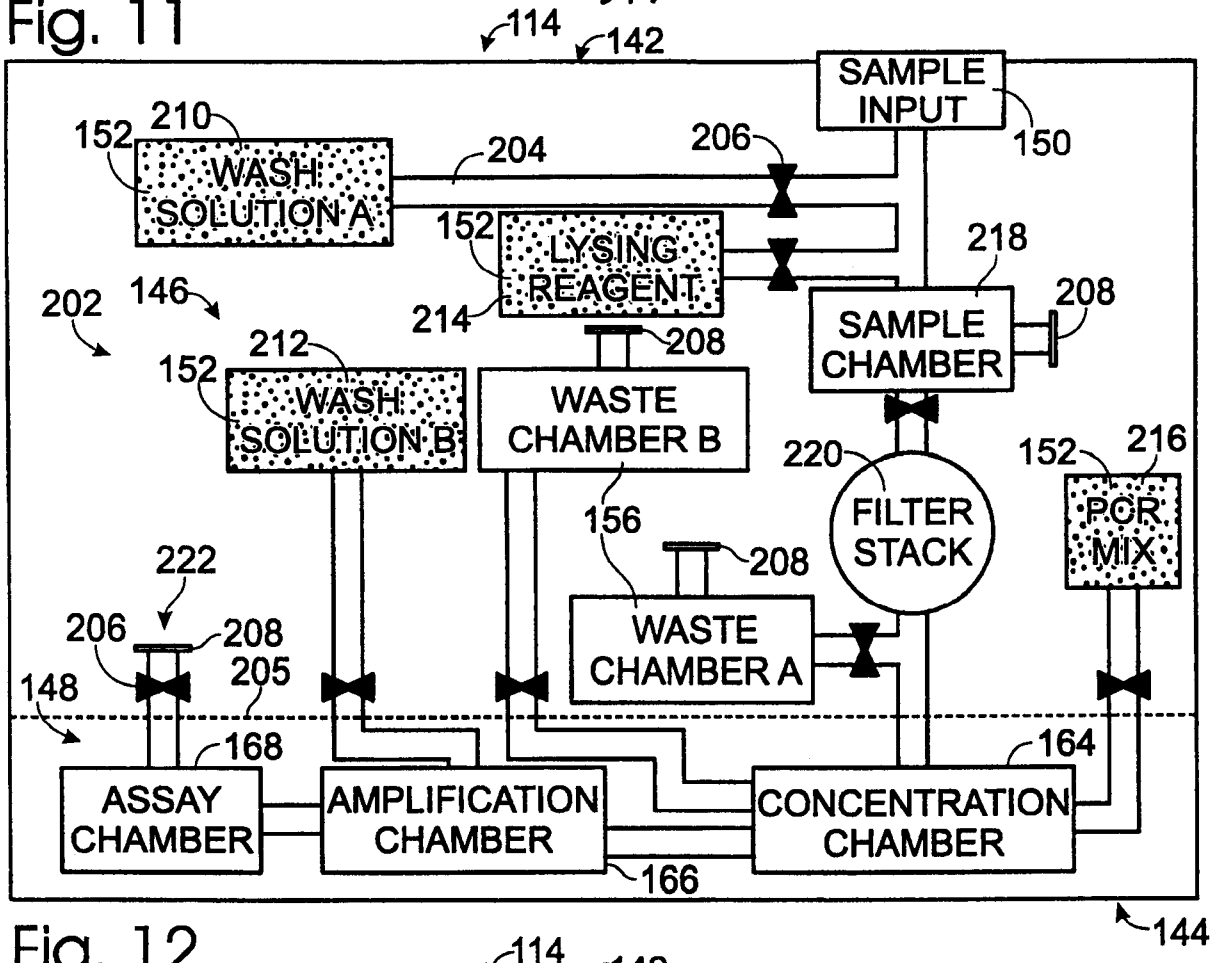

114
142
SAMPLE INPUT
150
152
210
WASH SOLUTION A
204
206
152
LYSING REAGENT
214
218
208
SAMPLE CHAMBER
202
146
212
152
WASH SOLUTION B
WASTE CHAMBER B
208
220
FILTER STACK
152
216
PCR MIX
156
208
WASTE CHAMBER A
222
206
208
205
148
168
164
ASSAY CHAMBER
AMPLIFICATION CHAMBER
CONCENTRATION CHAMBER
166
144

Fig. 12

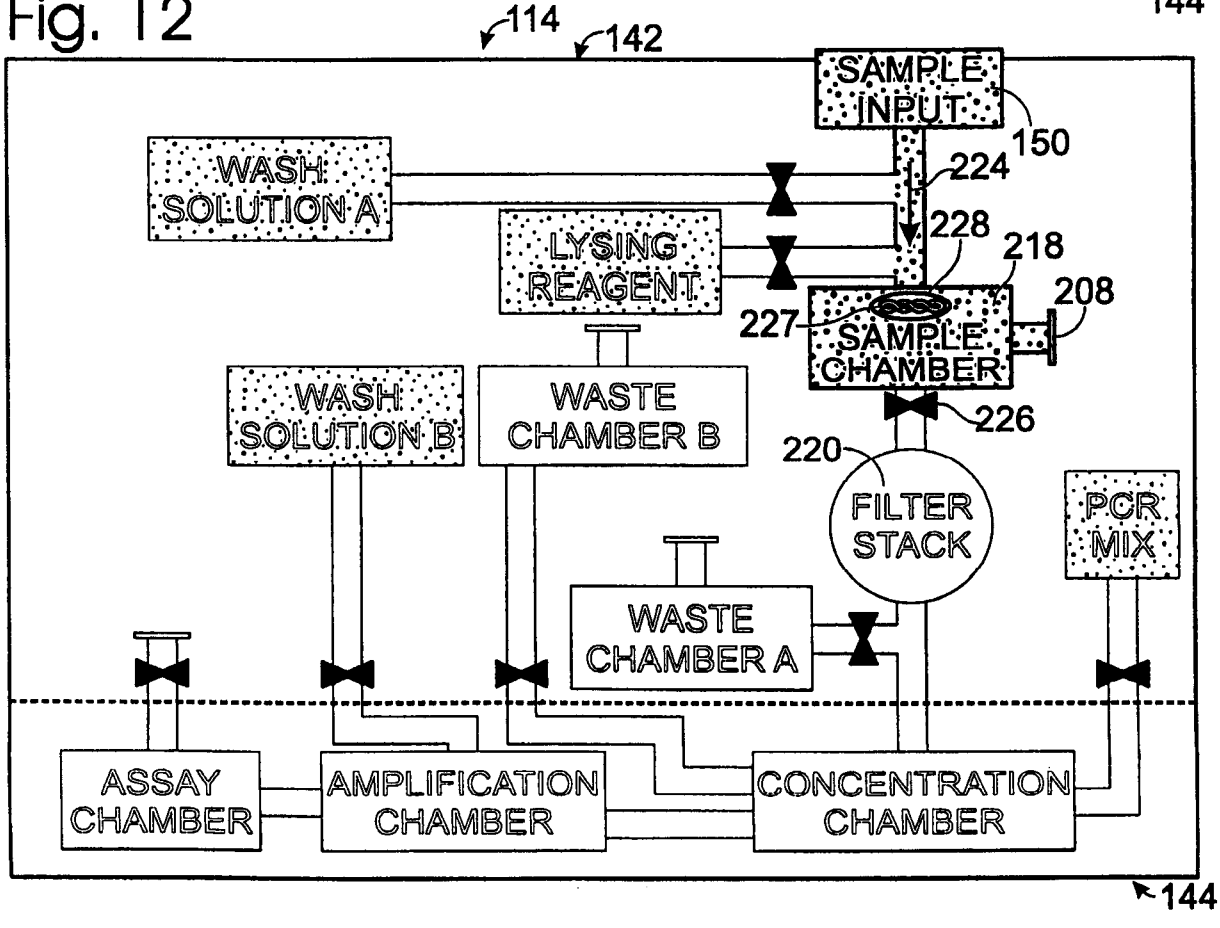

114
142
SAMPLE INPUT
150
WASH SOLUTION A
224
228
LYSING REAGENT
218
227
208
SAMPLE CHAMBER
WASH SOLUTION B
WASTE CHAMBER B
226
220
FILTER STACK
PCR MIX
WASTE CHAMBER A
ASSAY CHAMBER
AMPLIFICATION CHAMBER
CONCENTRATION CHAMBER
144

Fig. 13

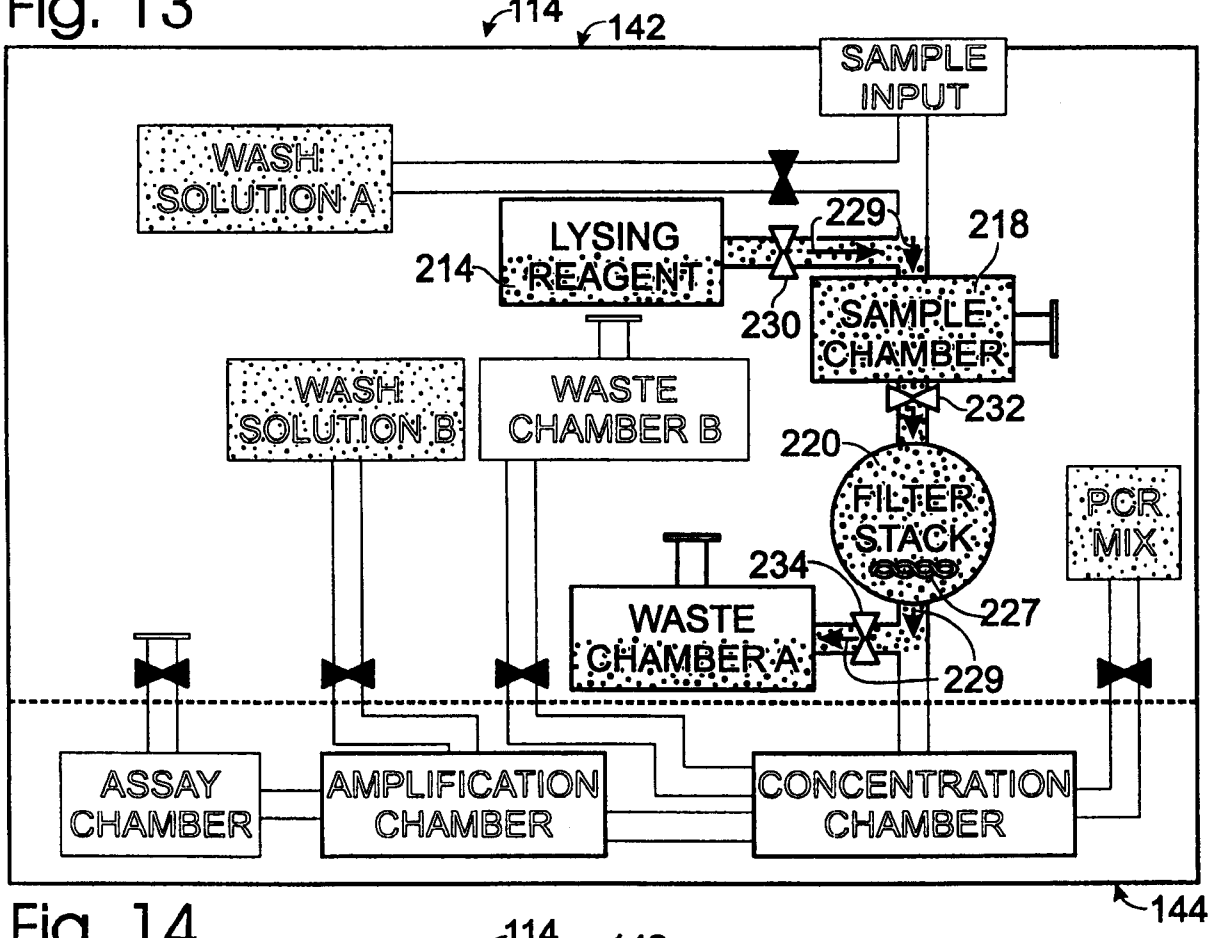

114
142
SAMPLE INPUT
WASH SOLUTION A
LYSING REAGENT
214
229
218
230
SAMPLE CHAMBER
WASH SOLUTION B
WASTE CHAMBER B
232
220
FILTER STACK
PCR MIX
234
WASTE CHAMBER A
227
229
ASSAY CHAMBER
AMPLIFICATION CHAMBER
CONCENTRATION CHAMBER
144

Fig. 14

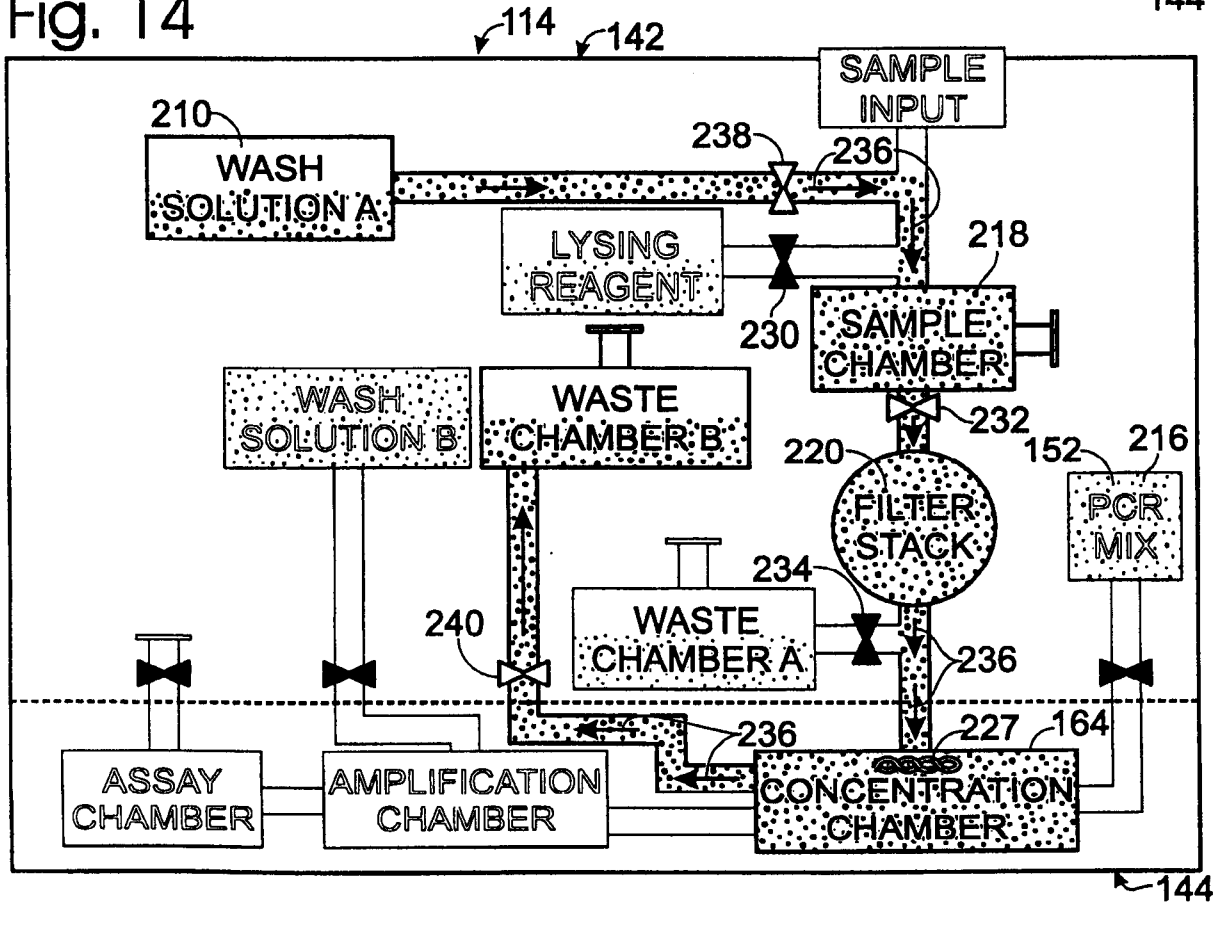

114
142
SAMPLE INPUT
210
WASH SOLUTION A
238
236
LYSING REAGENT
218
230
SAMPLE CHAMBER
WASH SOLUTION B
WASTE CHAMBER B
232
220
152
216
FILTER STACK
PCR MIX
234
240
WASTE CHAMBER A
236
236
227
164
ASSAY CHAMBER
AMPLIFICATION CHAMBER
CONCENTRATION CHAMBER
144

Fig. 15

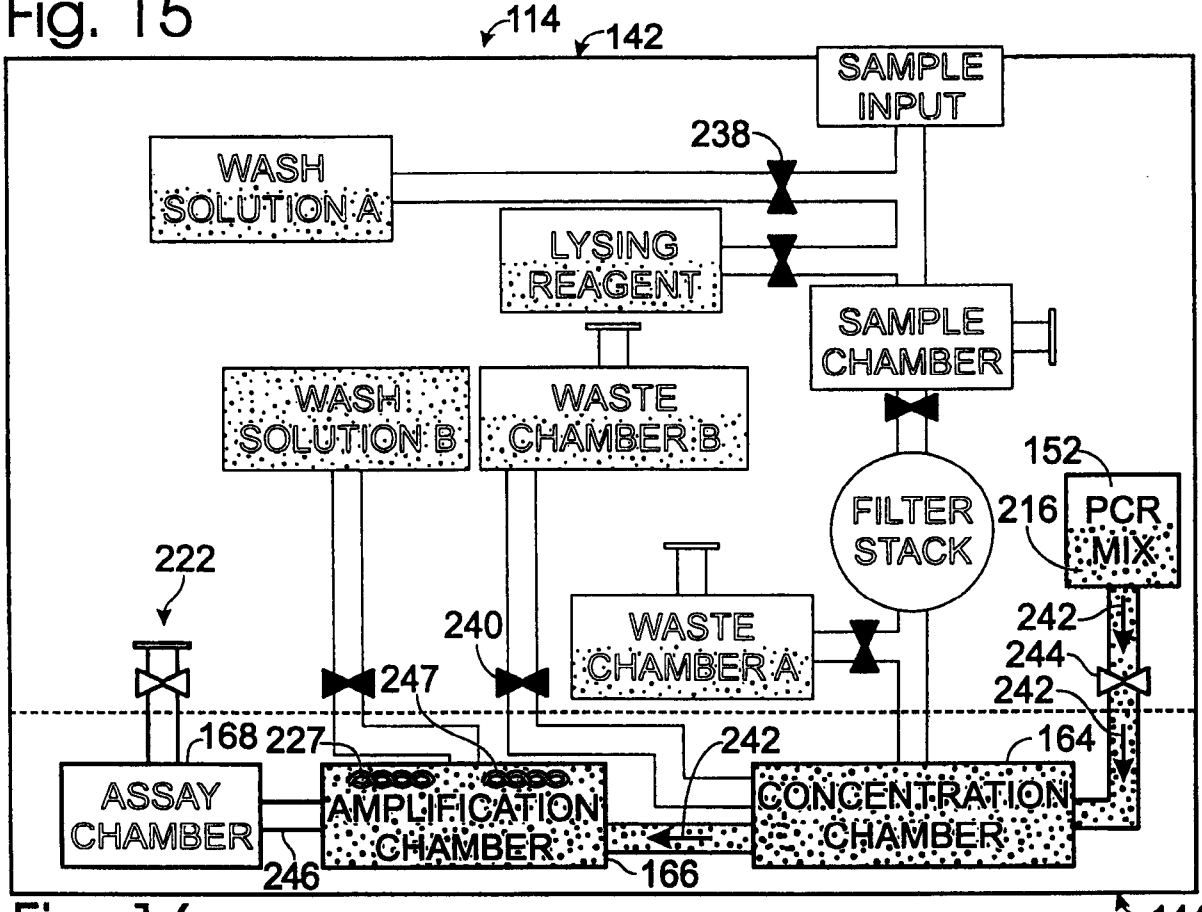

114
142
SAMPLE INPUT
238
WASH SOLUTION A
LYSING REAGENT
SAMPLE CHAMBER
WASH SOLUTION B
WASTE CHAMBER B
152
FILTER STACK
216
PCR MIX
222
240
WASTE CHAMBER A
242
244
247
242
168
227
242
164
ASSAY CHAMBER
AMPLIFICATION CHAMBER
CONCENTRATION CHAMBER
246
166
144

Fig. 16

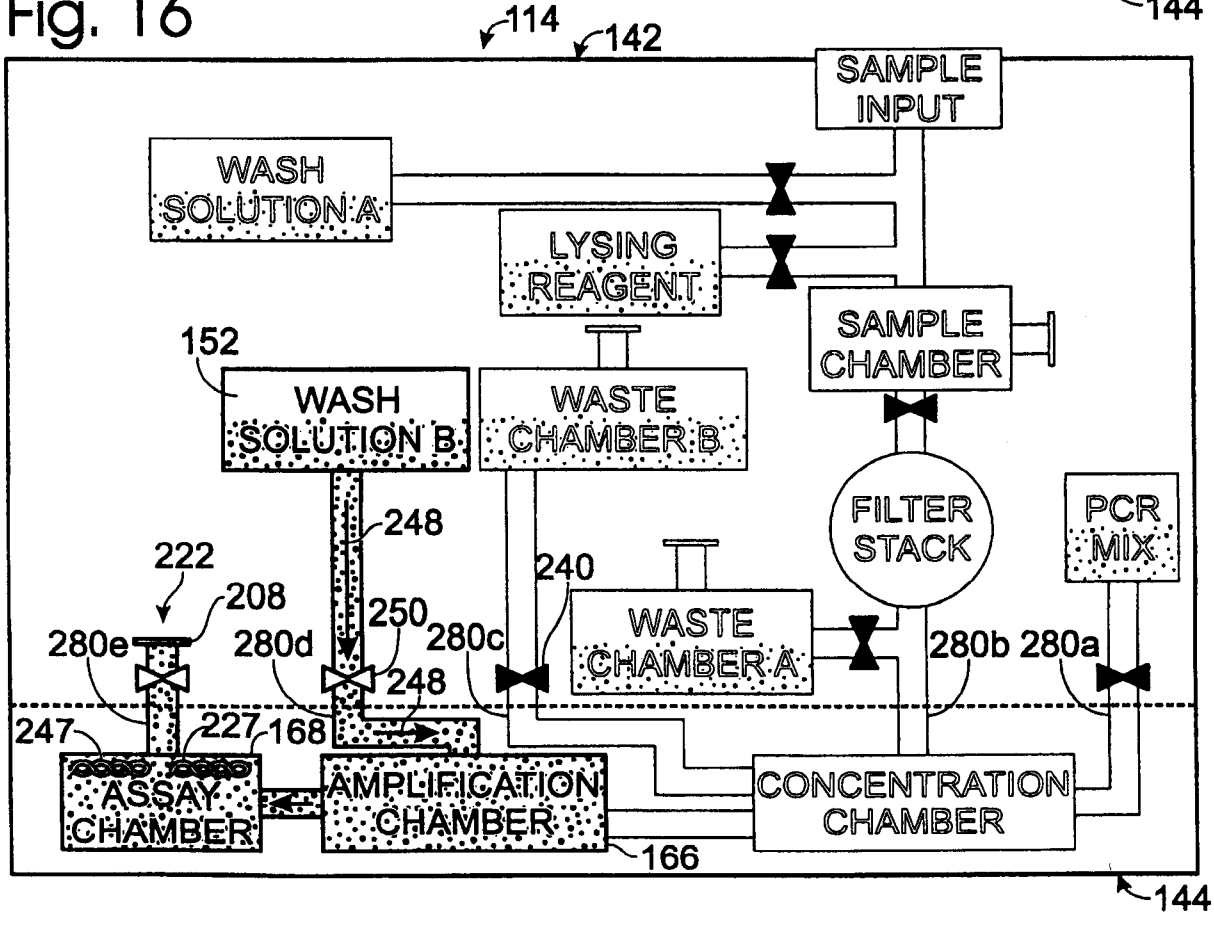

114
142
SAMPLE INPUT
WASH SOLUTION A
LYSING REAGENT
SAMPLE CHAMBER
152
WASH SOLUTION B
WASTE CHAMBER B
FILTER STACK
PCR MIX
248
222
240
208
250
280e
280d
280c
WASTE CHAMBER A
280b
280a
248
247
227
168
ASSAY CHAMBER
AMPLIFICATION CHAMBER
CONCENTRATION CHAMBER
166
144

Fig. 18

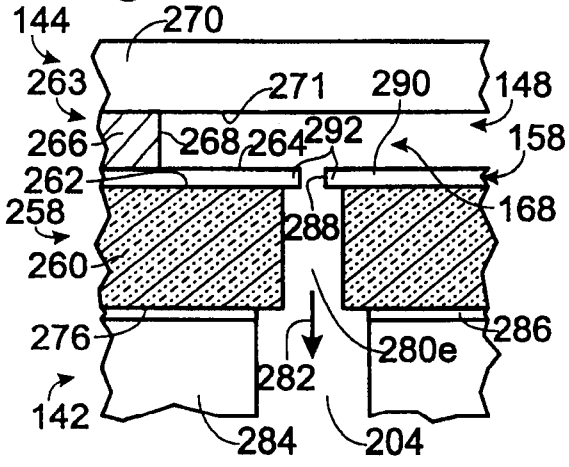


Fig. 19

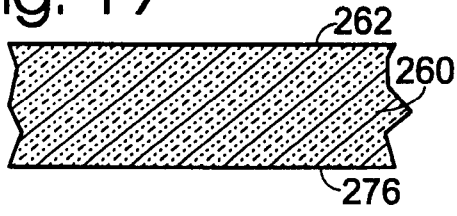


Fig. 20

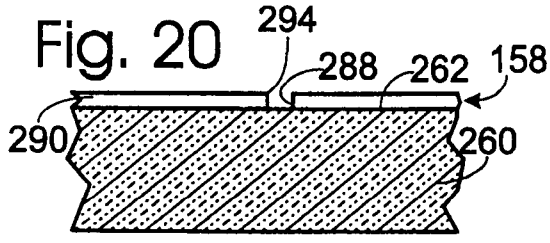


Fig. 21

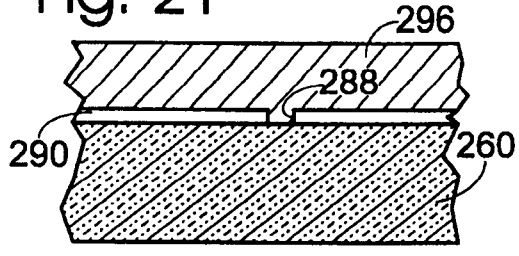


Fig. 22

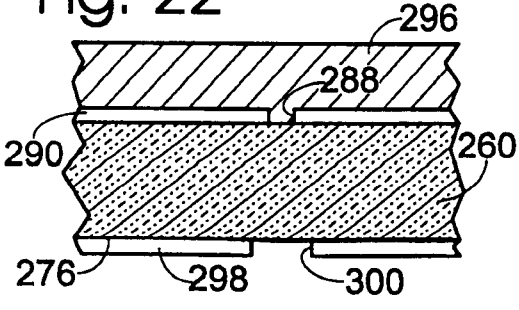


Fig. 23

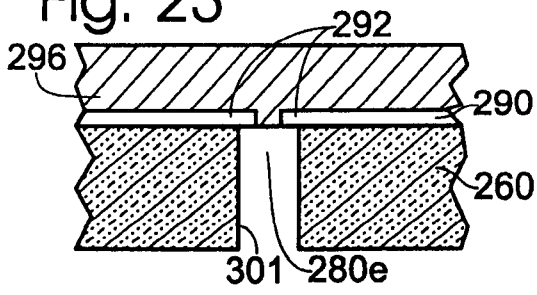


Fig. 24

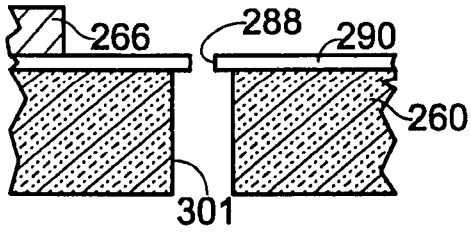


Fig. 25

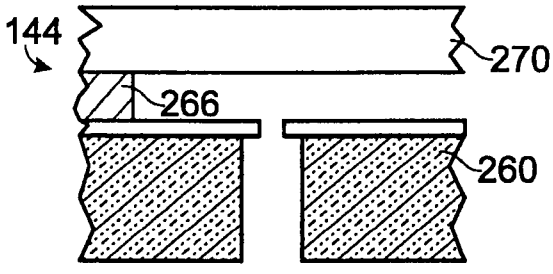


Fig. 26

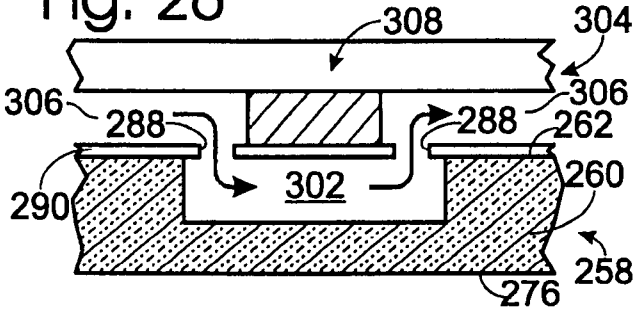


Fig. 27

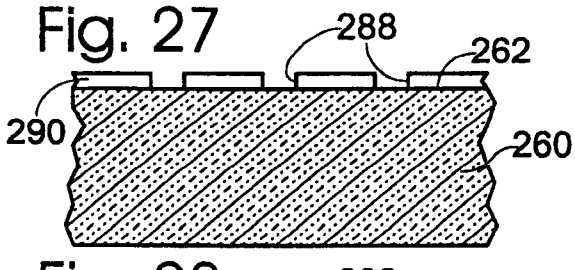


Fig. 28

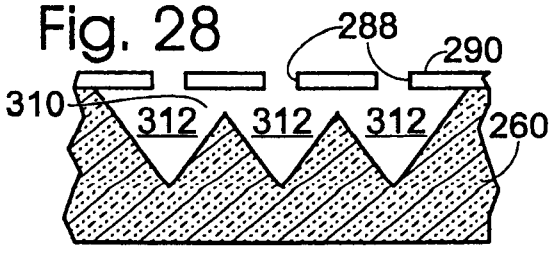


Fig. 29

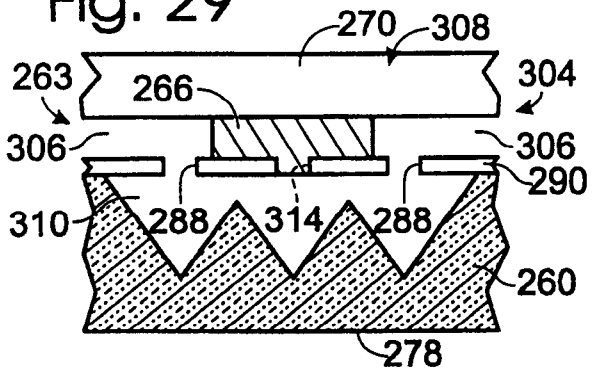


Fig. 30

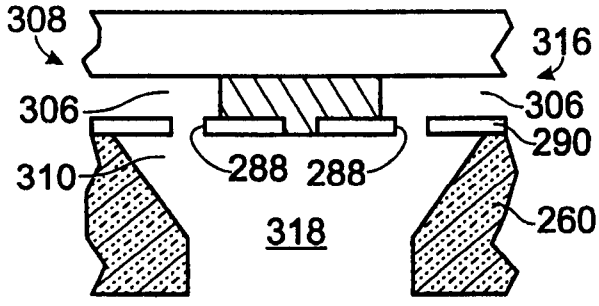


Fig. 31

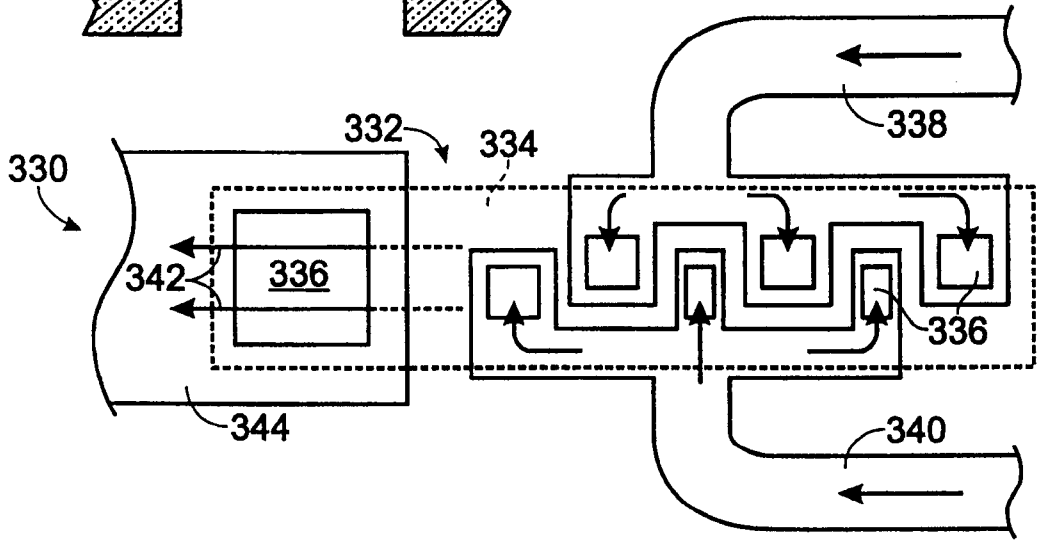


Fig. 32

