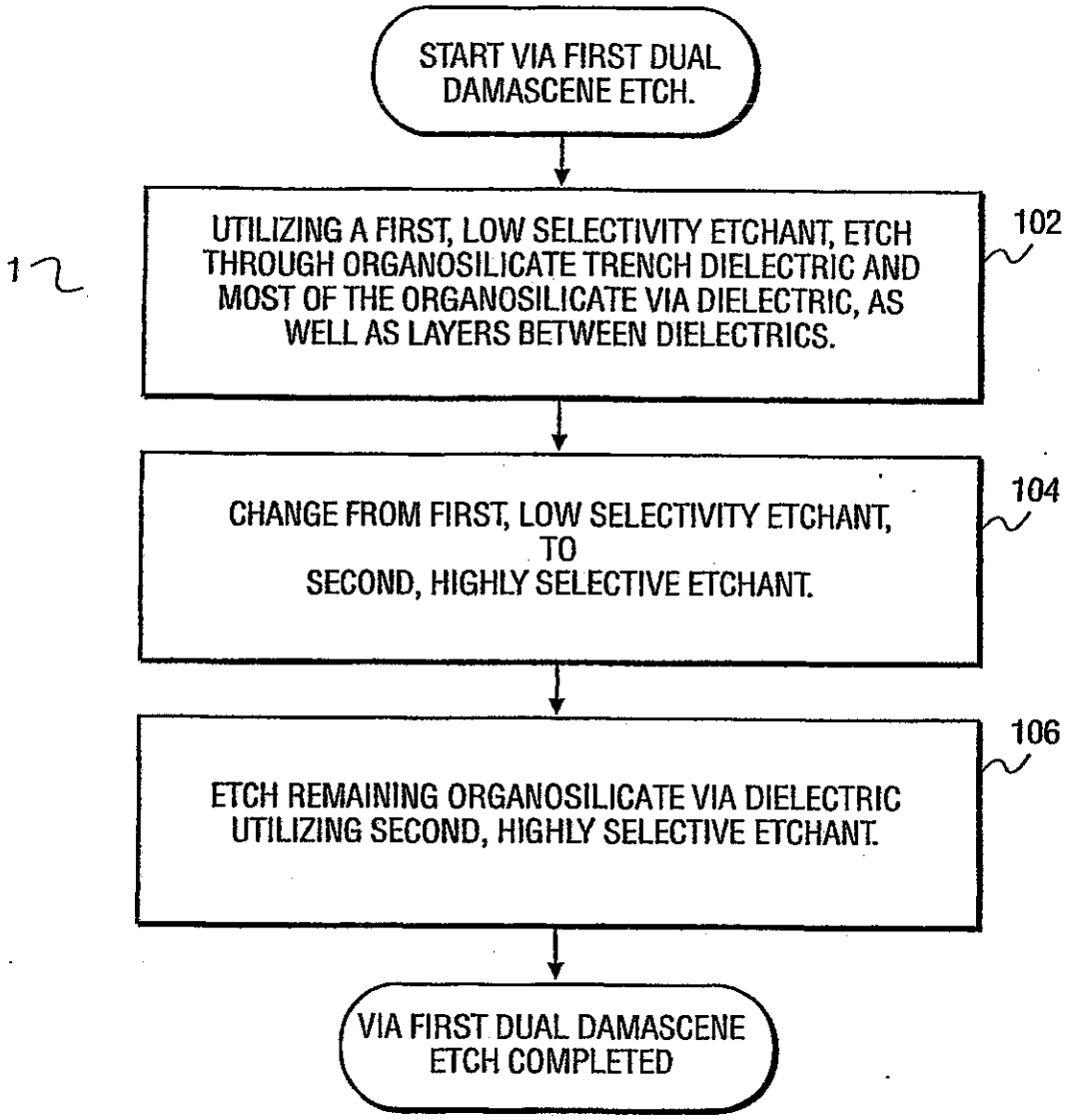

START VIA FIRST DUAL DAMASCENE ETCH.
UTILIZING A FIRST, LOW SELECTIVITY ETCHANT, ETCH THROUGH ORGANOSILICATE TRENCH DIELECTRIC AND MOST OF THE ORGANOSILICATE VIA DIELECTRIC, AS WELL AS LAYERS BETWEEN DIELECTRICS.
102
12
CHANGE FROM FIRST, LOW SELECTIVITY ETCHANT, TO SECOND, HIGHLY SELECTIVE ETCHANT.
104
ETCH REMAINING ORGANOSILICATE VIA DIELECTRIC UTILIZING SECOND, HIGHLY SELECTIVE ETCHANT.
106
VIA FIRST DUAL DAMASCENE ETCH COMPLETED

FIG. 1

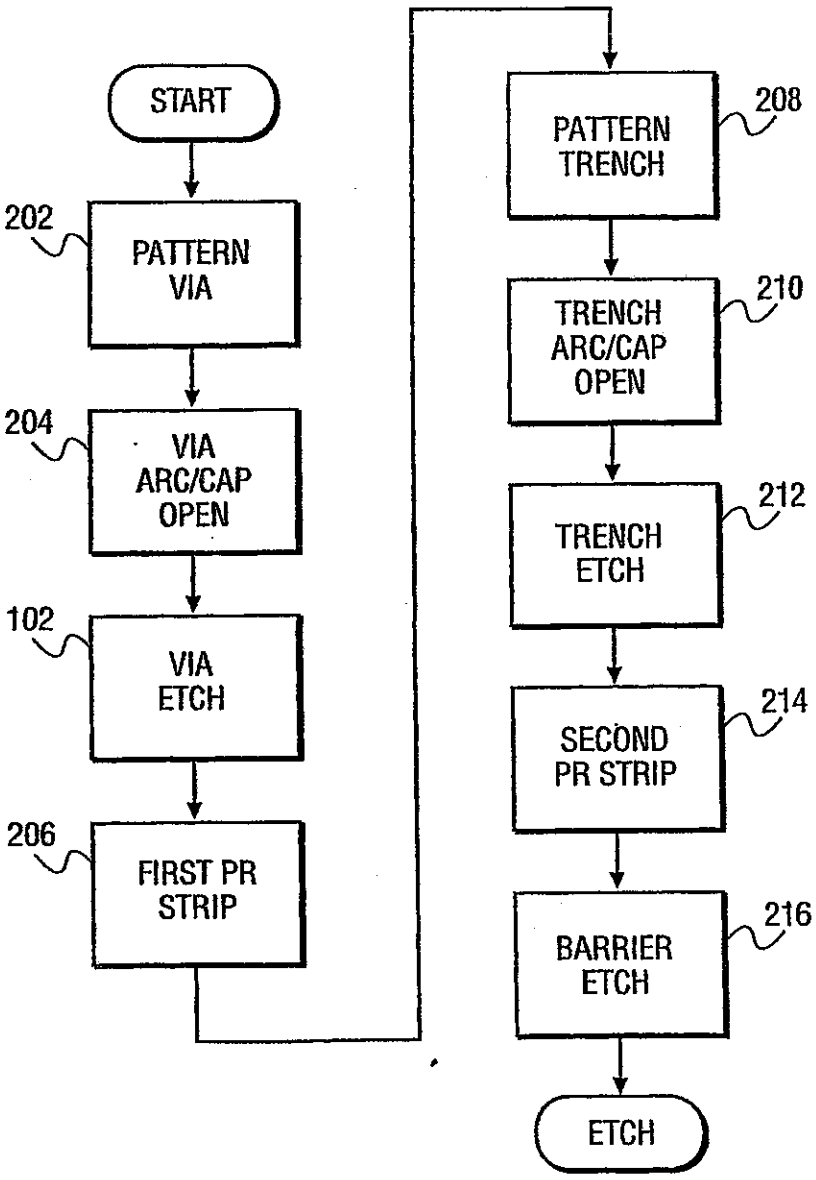

START
202
PATTERN VIA
204
VIA ARC/CAP OPEN
102
VIA ETCH
206
FIRST PR STRIP
208
PATTERN TRENCH
210
TRENCH ARC/CAP OPEN
212
TRENCH ETCH
214
SECOND PR STRIP
216
BARRIER ETCH
ETCH

FIG. 2

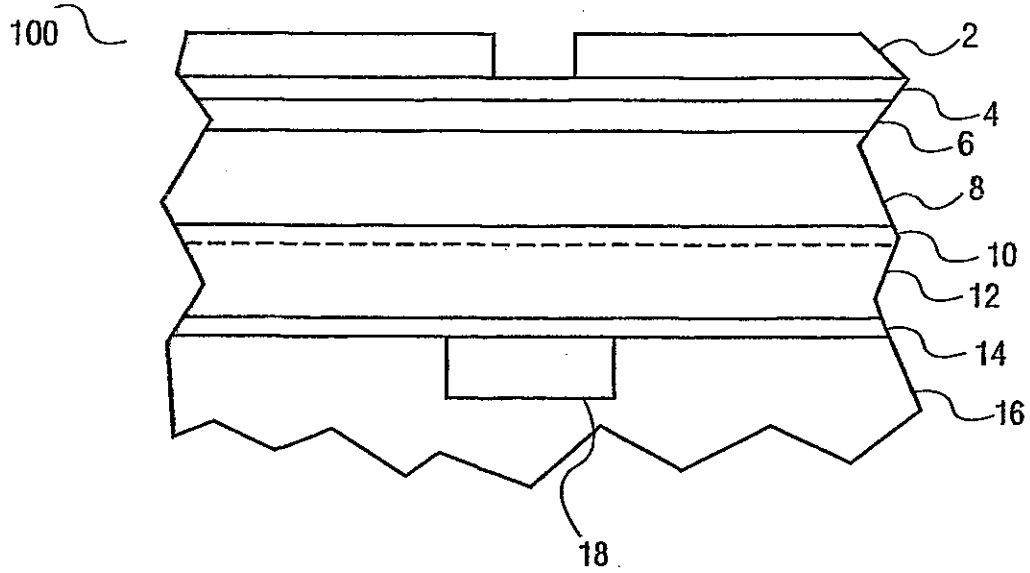


FIG. 3

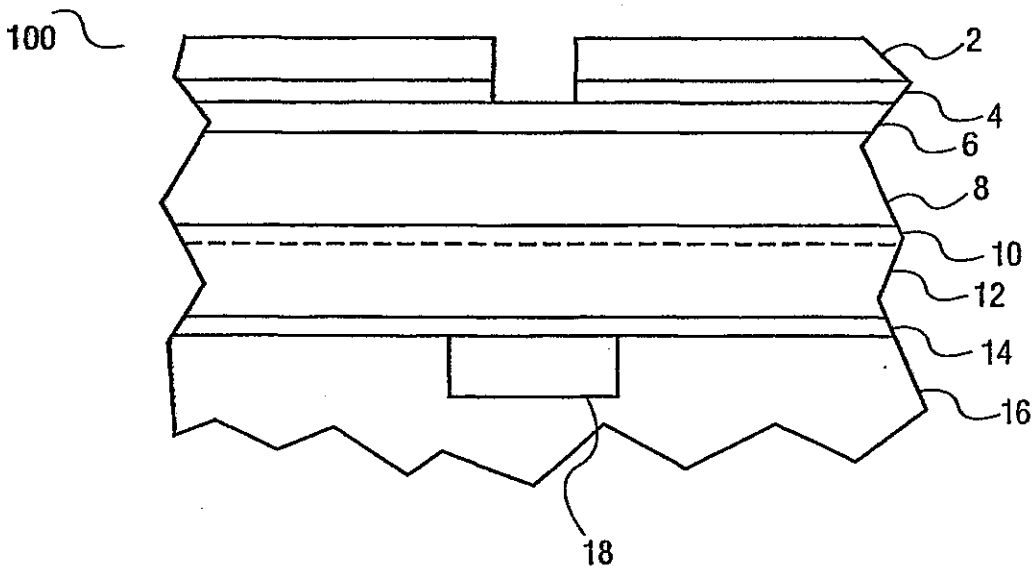


FIG. 4

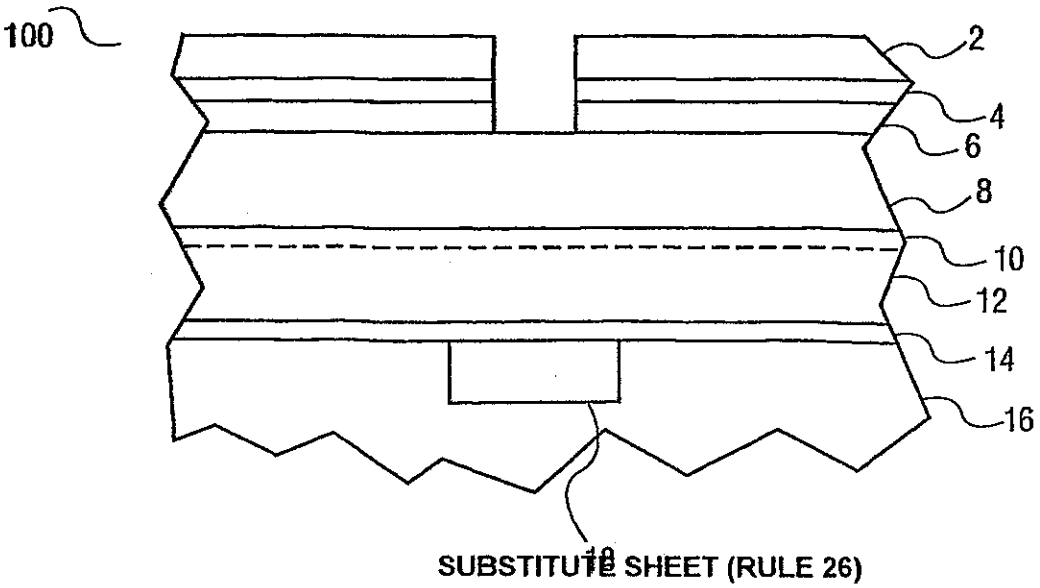


FIG. 5

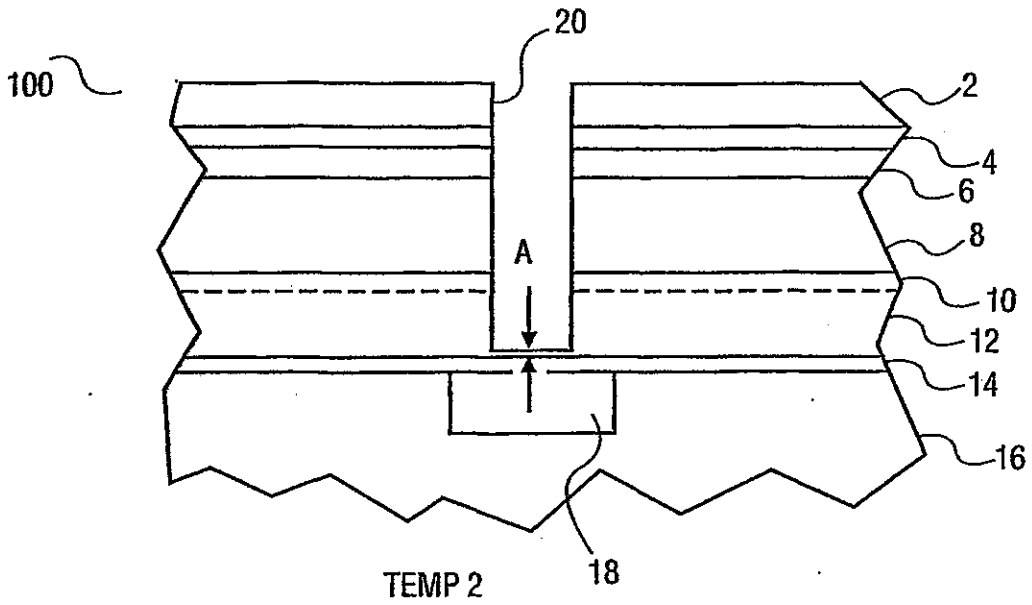


FIG. 6

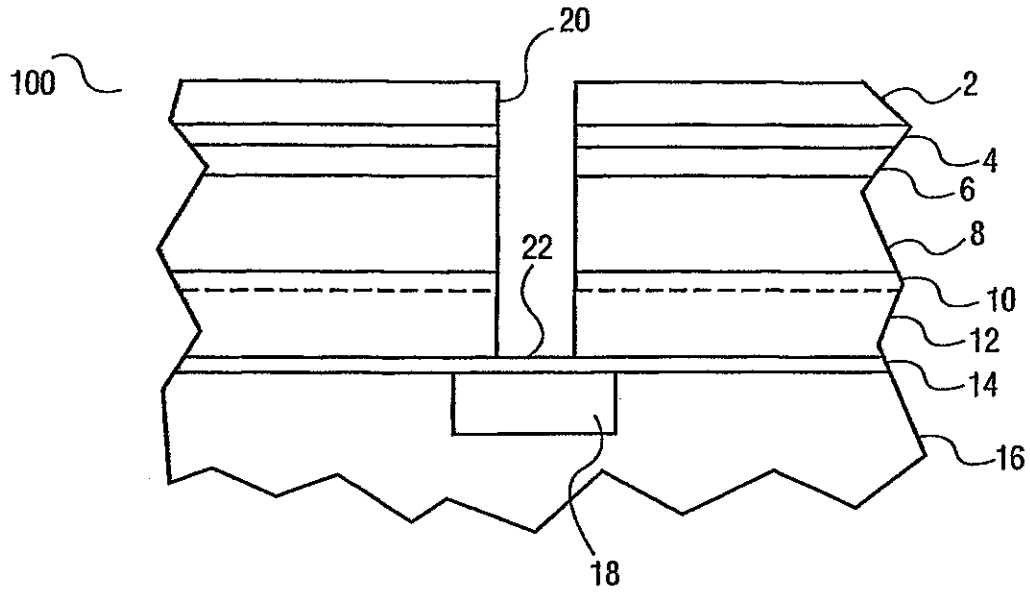


FIG. 7

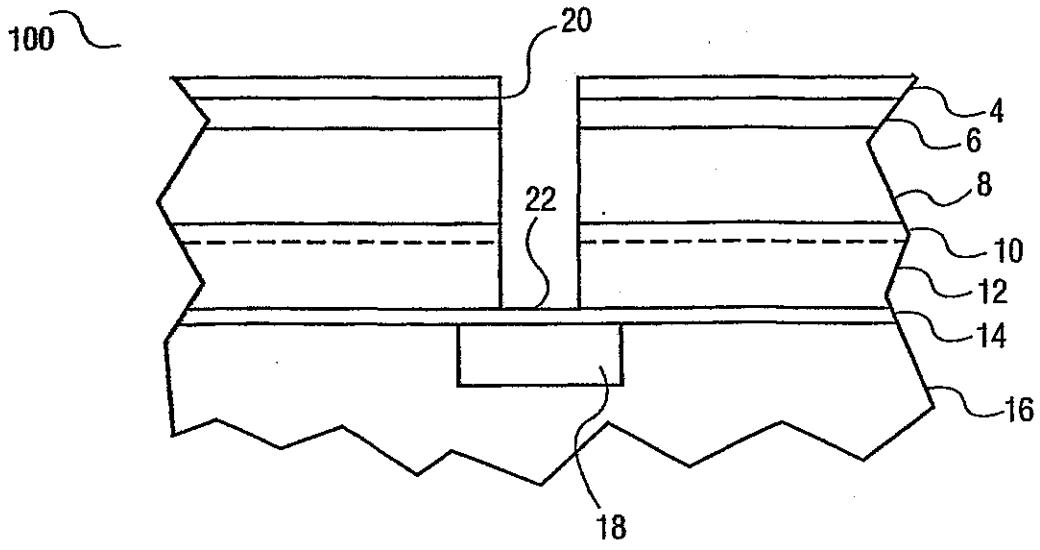


FIG. 8

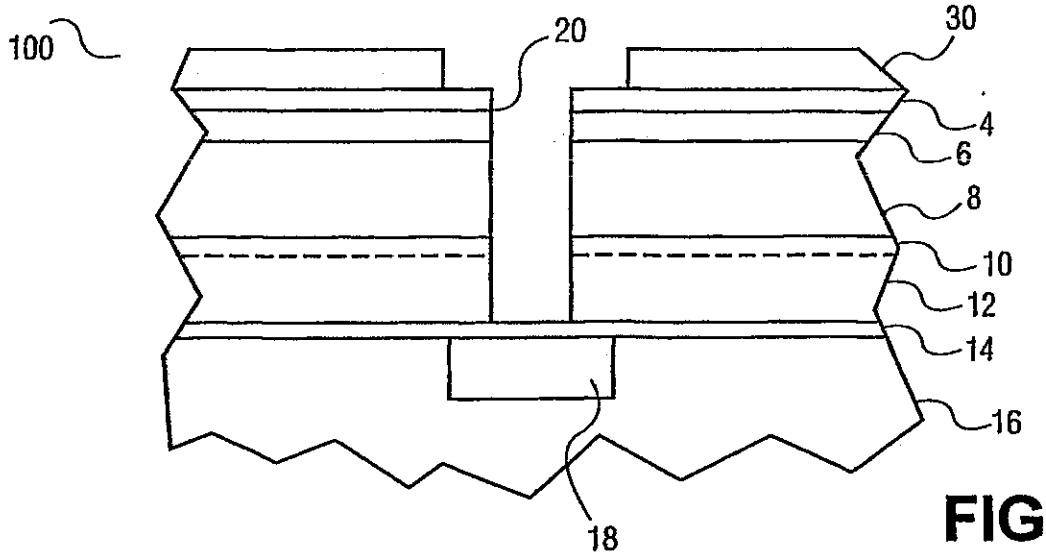


FIG. 9

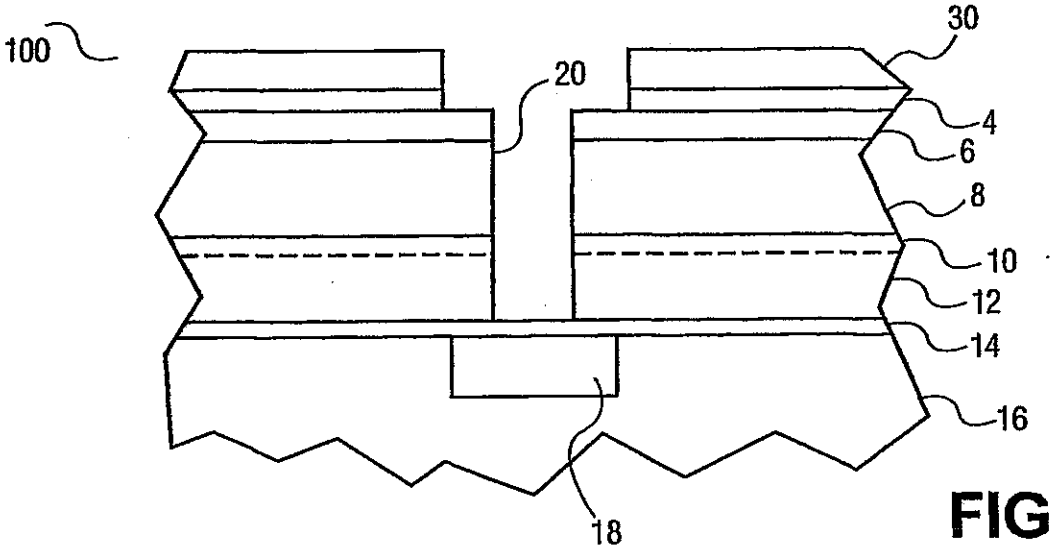


FIG. 10

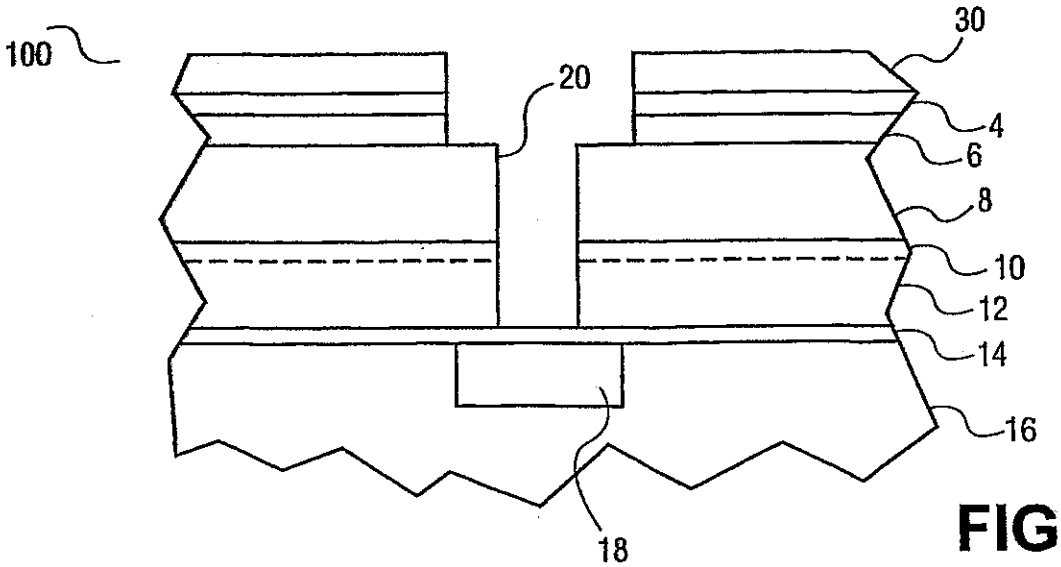


FIG. 11

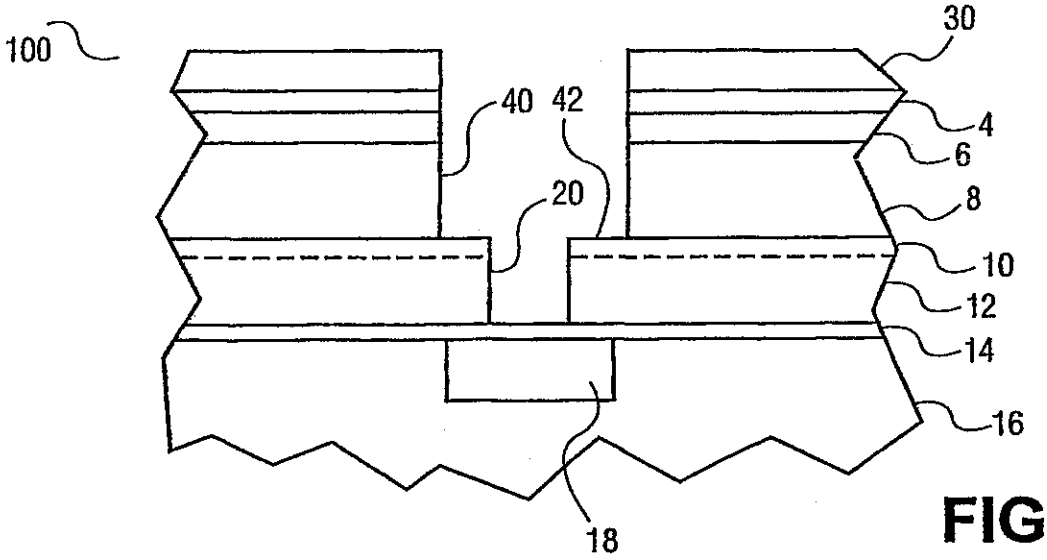


FIG. 12

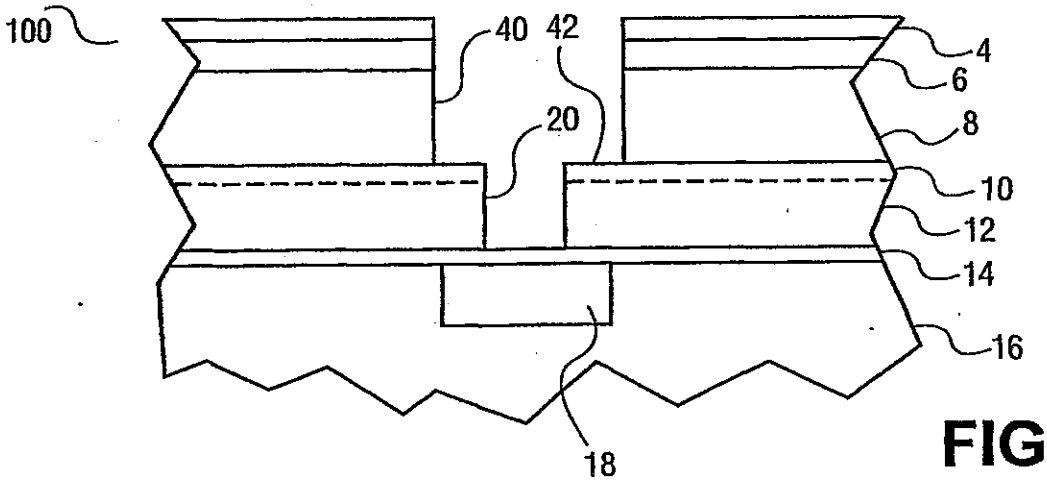


FIG. 13

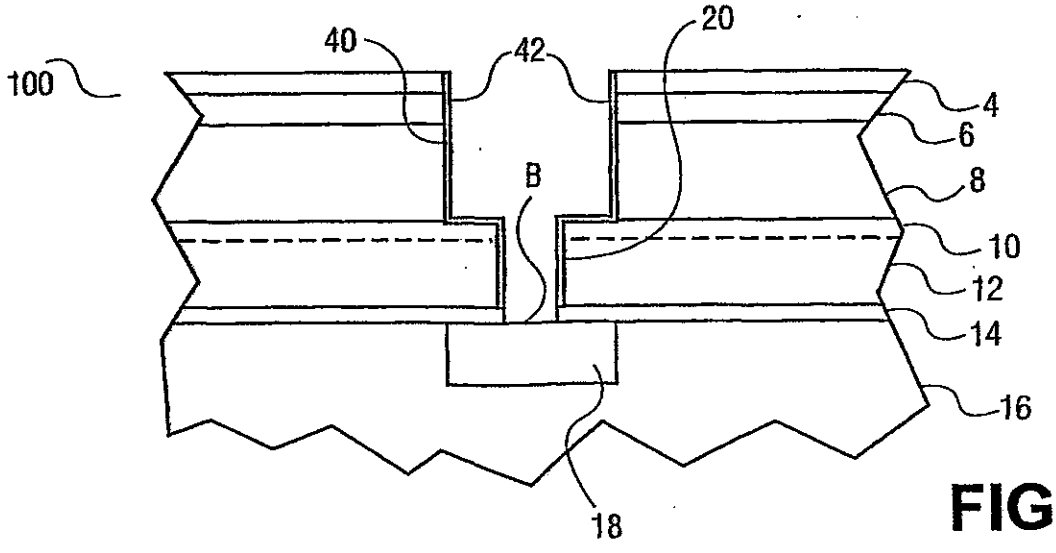


FIG. 14

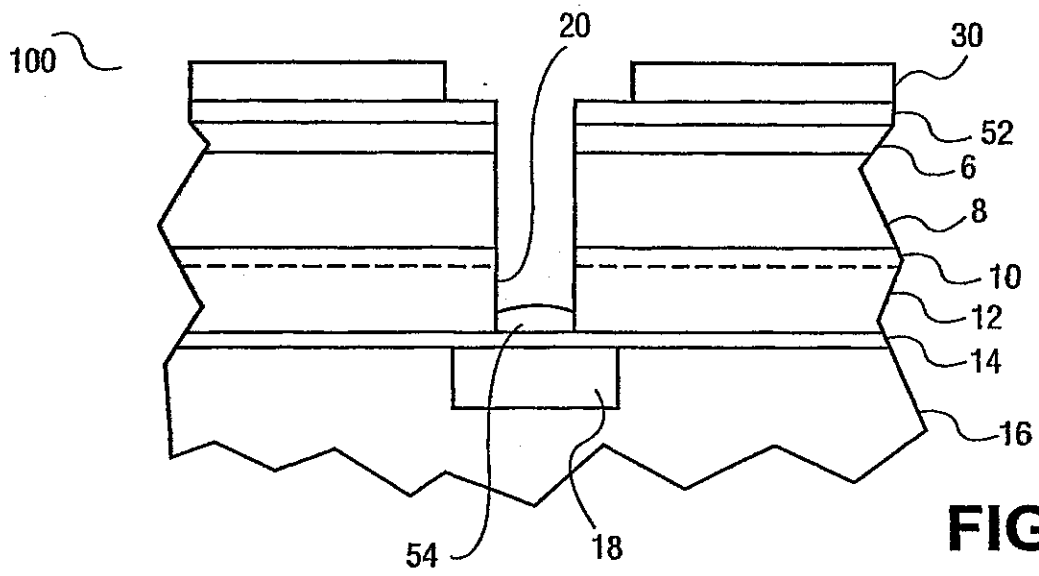


FIG. 15

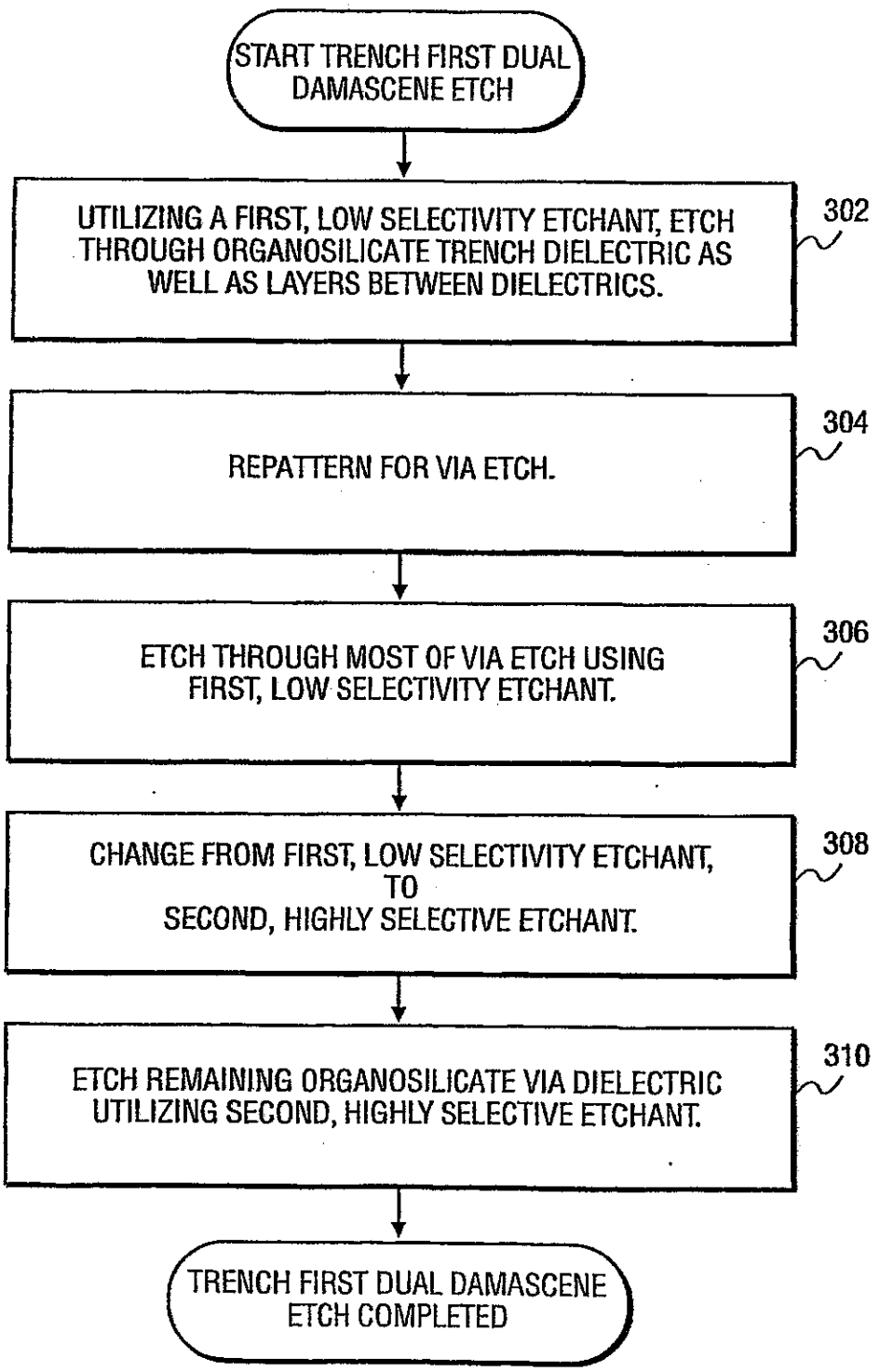

START TRENCH FIRST DUAL DAMASCENE ETCH
UTILIZING A FIRST, LOW SELECTIVITY ETCHANT, ETCH THROUGH ORGANOSILICATE TRENCH DIELECTRIC AS WELL AS LAYERS BETWEEN DIELECTRICS.
302
REPATTERN FOR VIA ETCH.
304
ETCH THROUGH MOST OF VIA ETCH USING FIRST, LOW SELECTIVITY ETCHANT.
306
CHANGE FROM FIRST, LOW SELECTIVITY ETCHANT, TO SECOND, HIGHLY SELECTIVE ETCHANT.
308
ETCH REMAINING ORGANOSILICATE VIA DIELECTRIC UTILIZING SECOND, HIGHLY SELECTIVE ETCHANT.
310
TRENCH FIRST DUAL DAMASCENE ETCH COMPLETED

FIG. 16

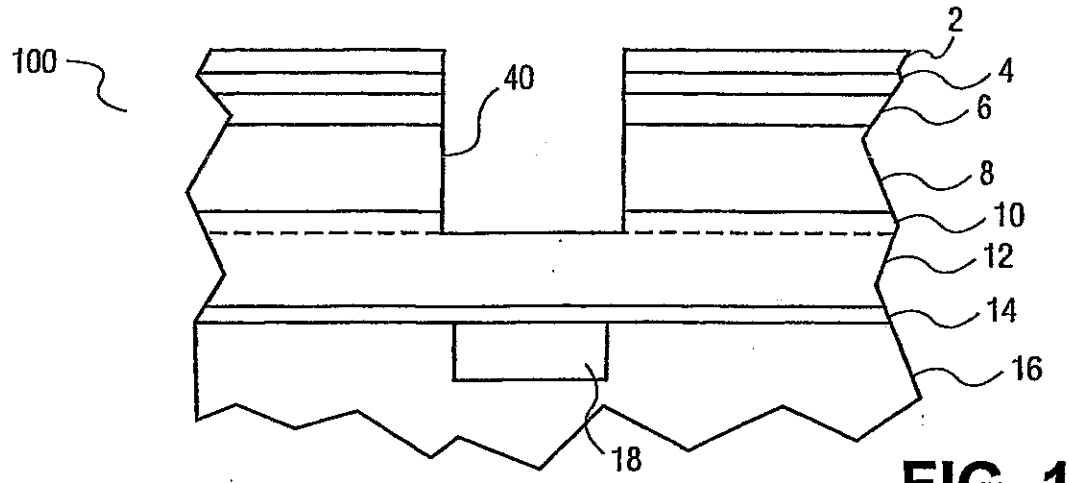


FIG. 17

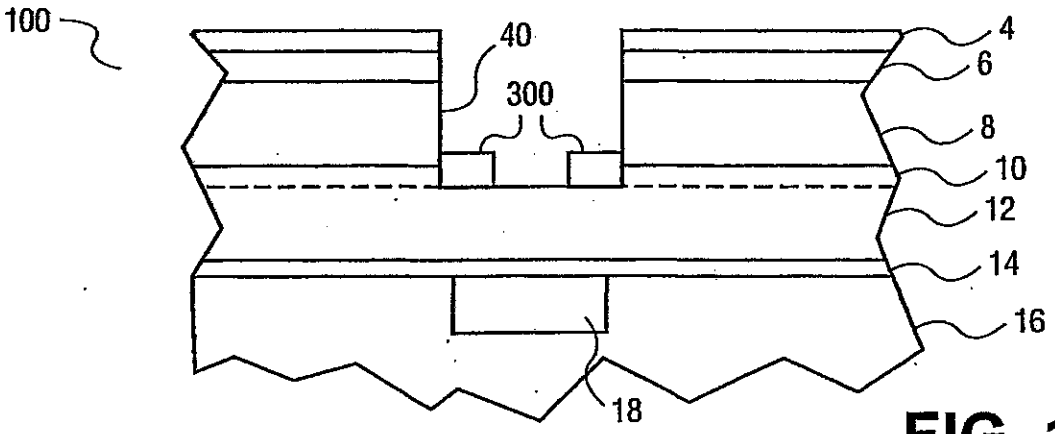


FIG. 18

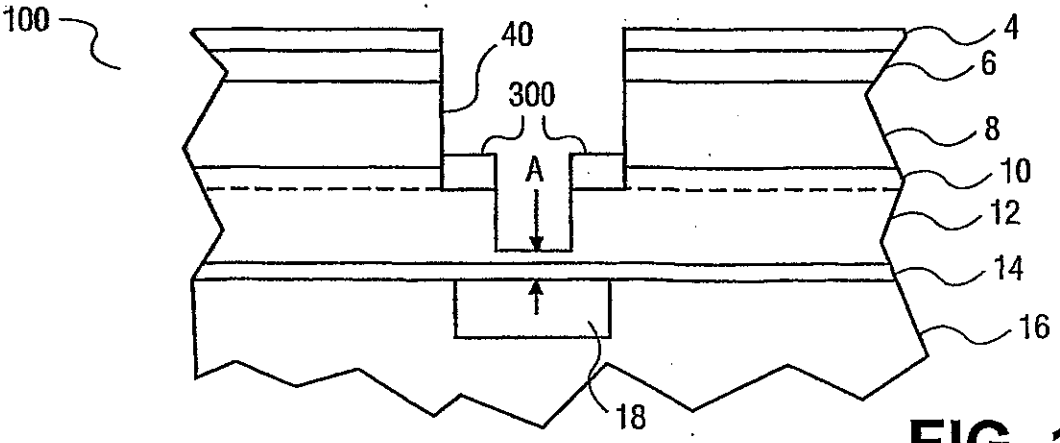


FIG. 19

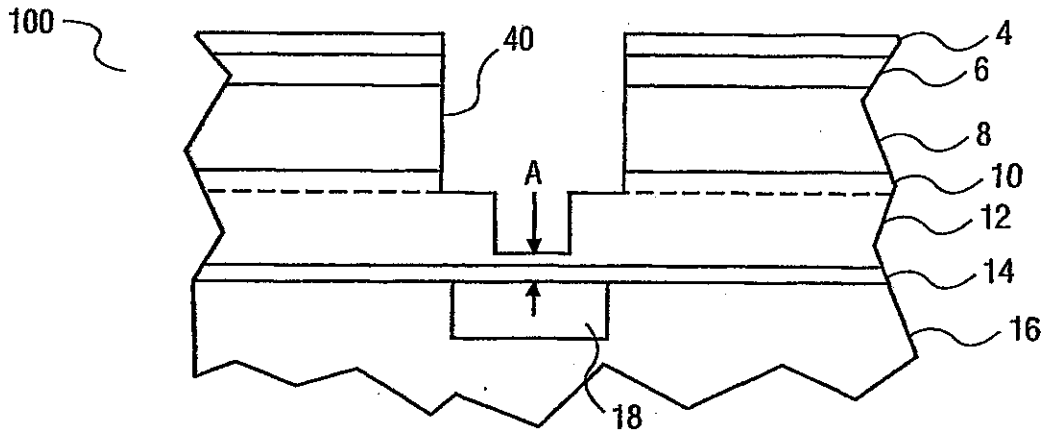


FIG. 20

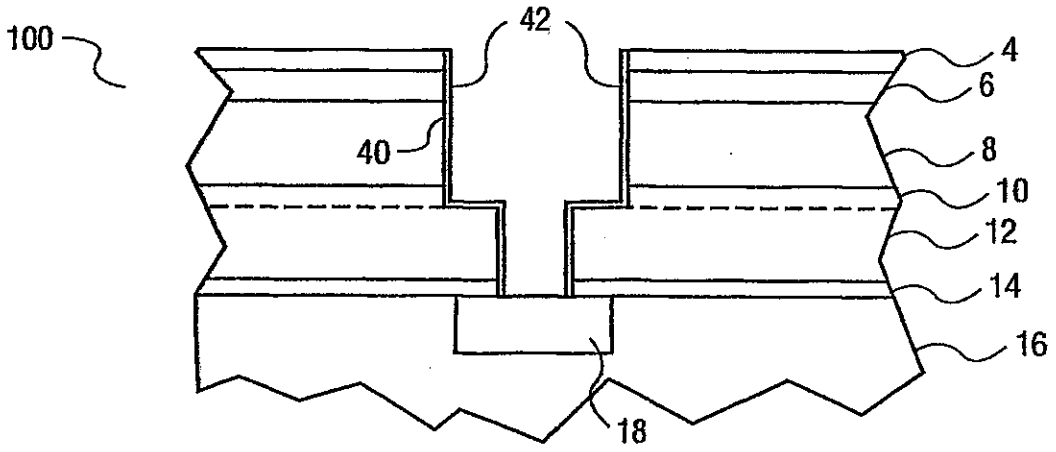


FIG. 21

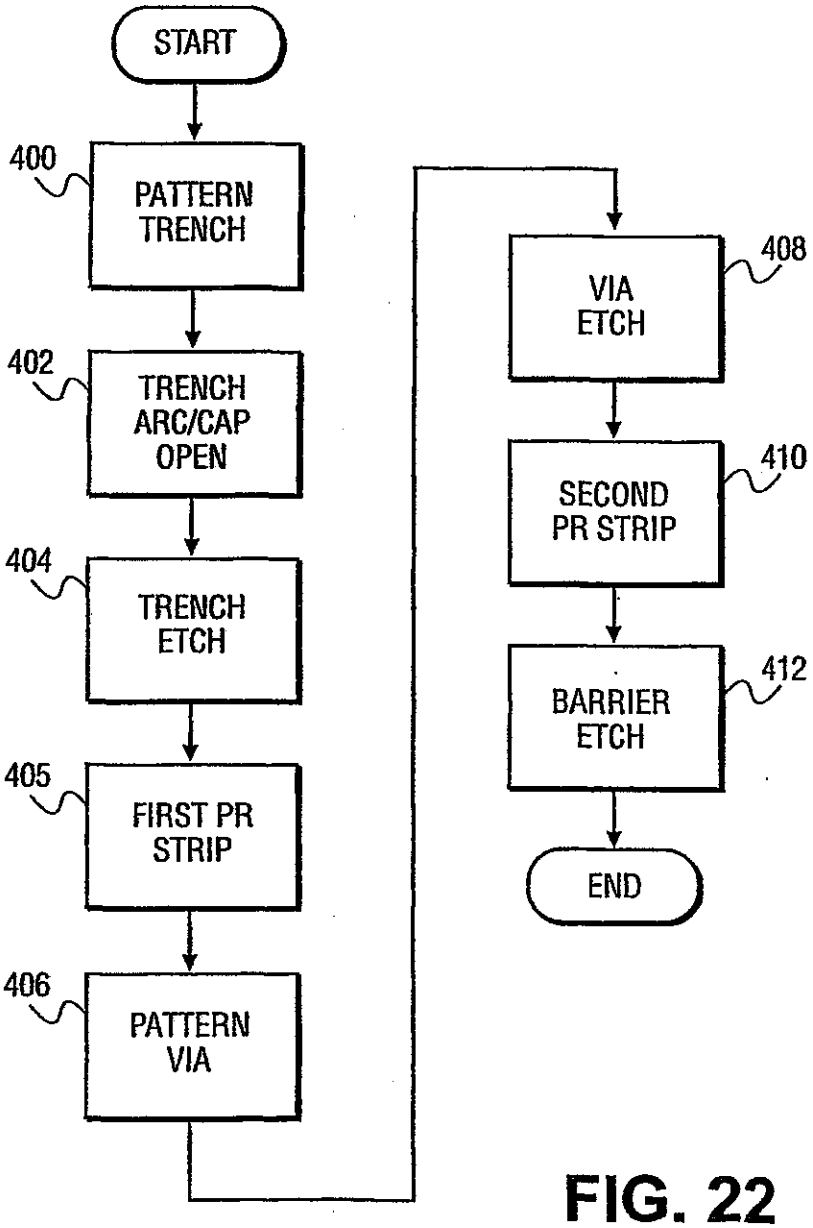

START
400
PATTERN TRENCH
402
TRENCH ARC/CAP OPEN
404
TRENCH ETCH
405
FIRST PR STRIP
406
PATTERN VIA
408
VIA ETCH
410
SECOND PR STRIP
412
BARRIER ETCH
END

FIG. 22