

[54] POLYSILICON-BASE SELF-ALIGNED BIPOLAR TRANSISTOR PROCESS AND STRUCTURE

[51] Int. Cl.<sup>3</sup> ..... H01L 27/04  
[52] U.S. Cl. .... 357/50; 357/34; 357/59

[76] Inventors: Allen P. Ho, 2 High Point Dr., Poughkeepsie, N.Y. 12603; Cheng T. Horng, 6396 Gondola Way, San Jose, Calif. 95120

[57] **ABSTRACT**  
A bipolar transistor isolated by deep recessed oxide 19, with shallow recessed oxide 15 separating the base 32, 37 from collector contact 35, with polysilicon contact 26 to base extrinsic region 37, the polysilicon being self-aligned with the emitter 36 and the emitter contact.

[21] Appl. No.: 370,897

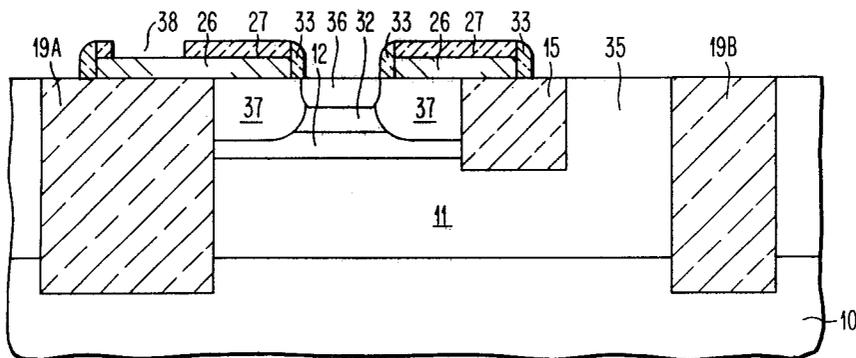
[22] Filed: Apr. 22, 1982

2 Claims, 5 Sheets Drawing,  
33 Pages Specification

**Related U.S. Application Data**

[63] Continuation of Ser. No. 133,155, Mar. 24, 1980, abandoned.

The file of this unexamined application may be inspected and copies thereof may be purchased (849 O.G. 1221, Apr. 9, 1968).



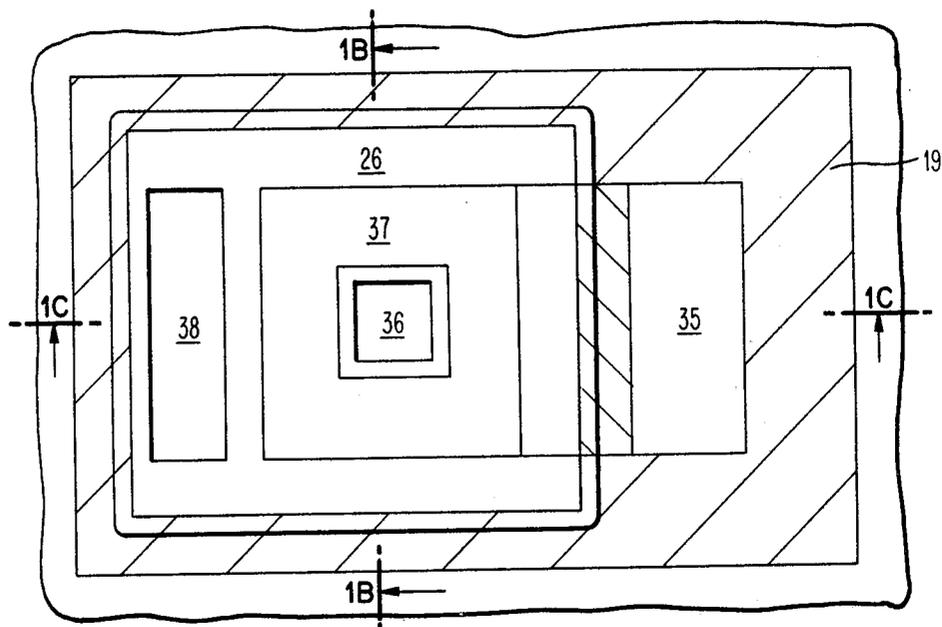


FIG. 1A

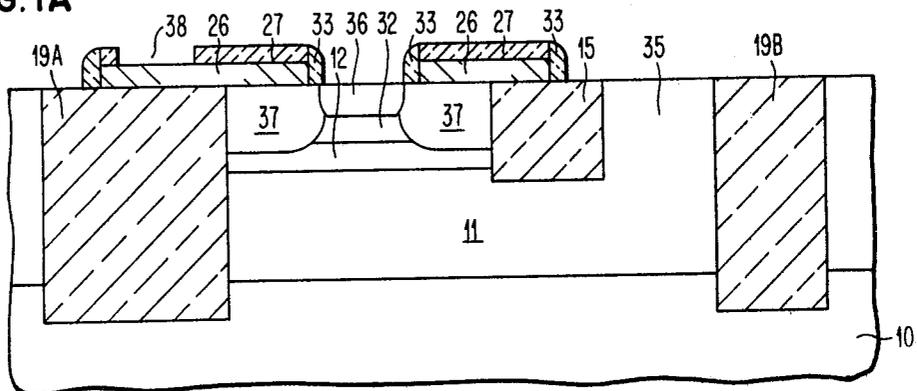


FIG. 1C

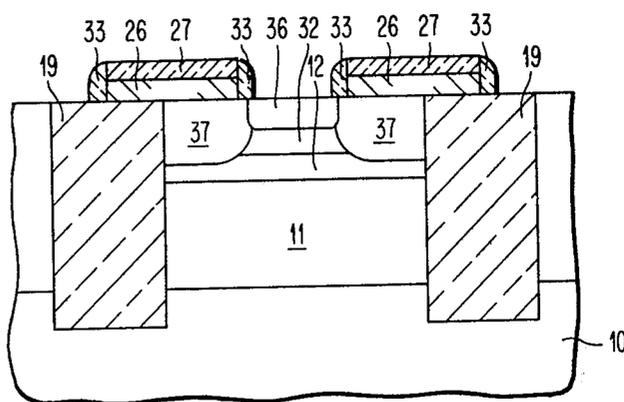


FIG. 1B

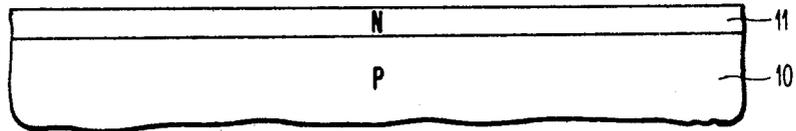


FIG. 2

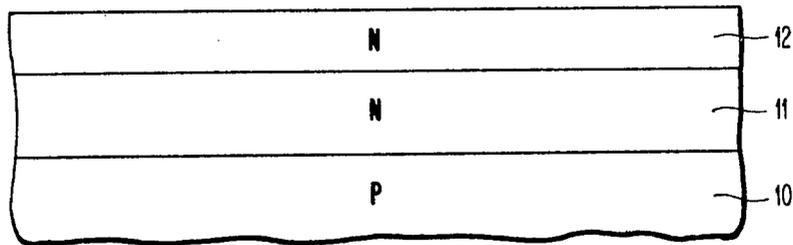


FIG. 3

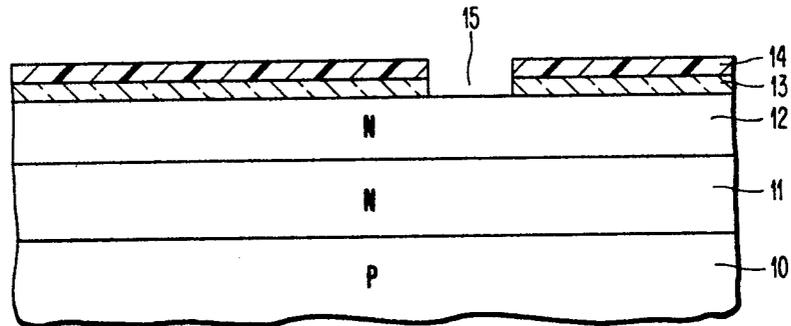


FIG. 4

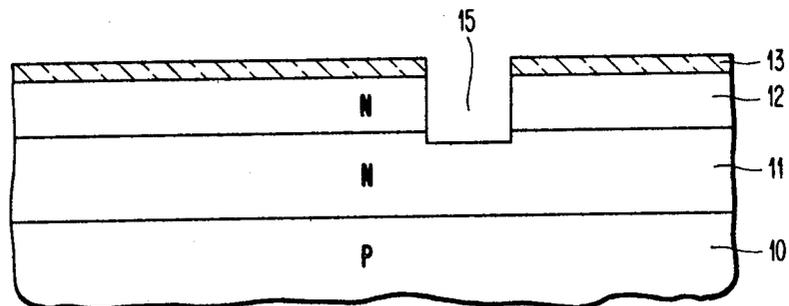


FIG. 5

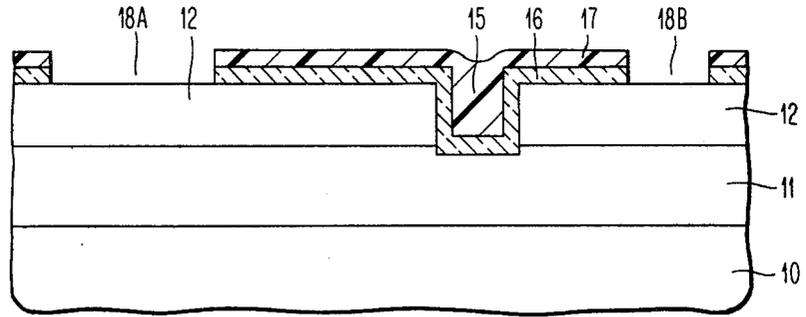


FIG. 6

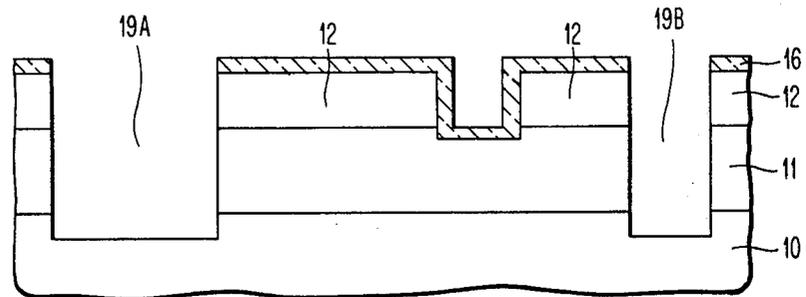


FIG. 7

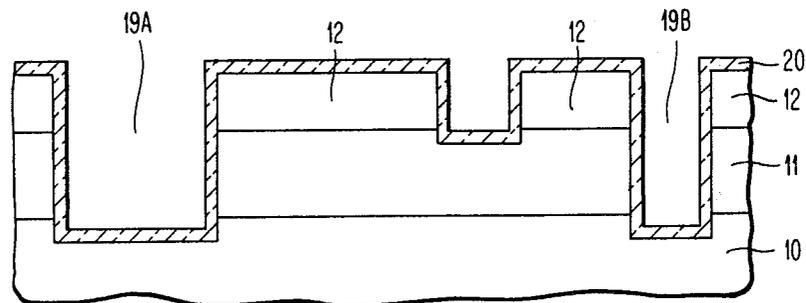


FIG. 8

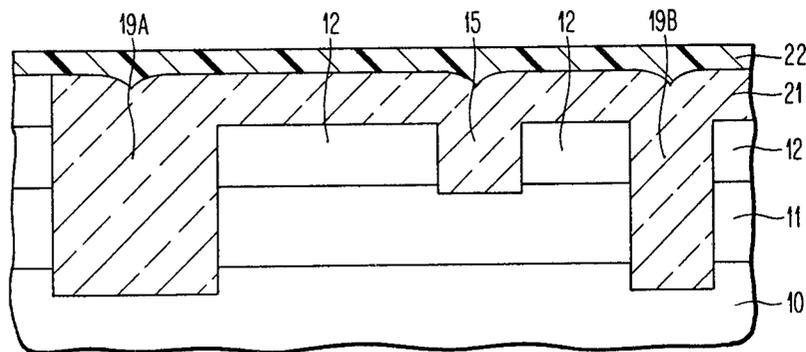


FIG. 9

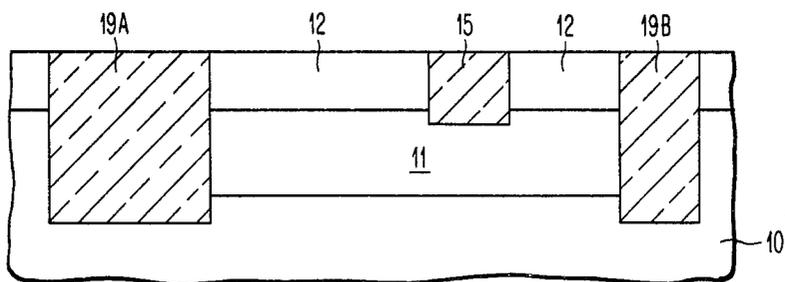


FIG. 10

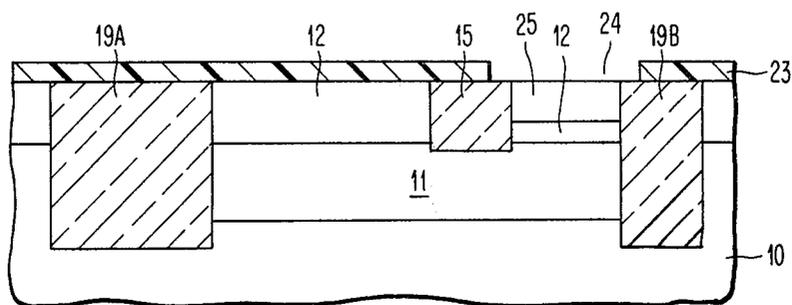


FIG. 11

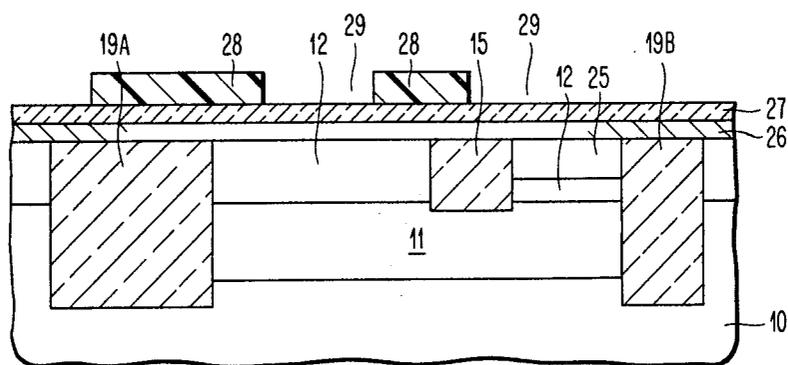


FIG. 12

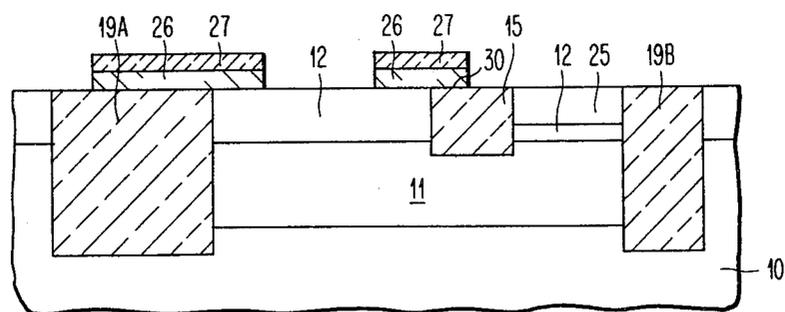


FIG. 13

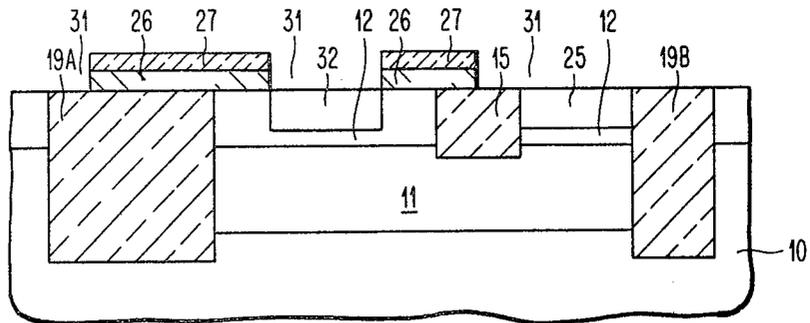


FIG. 14

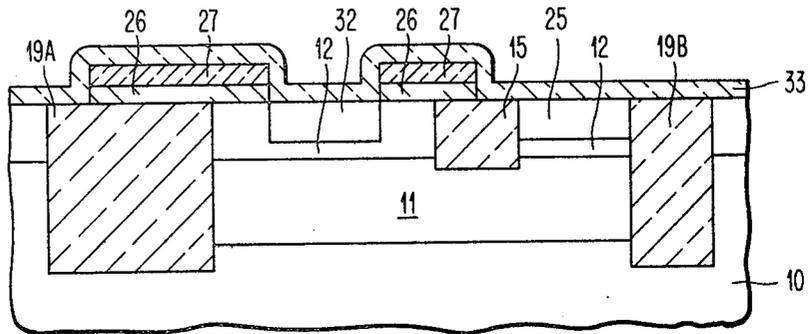


FIG. 15

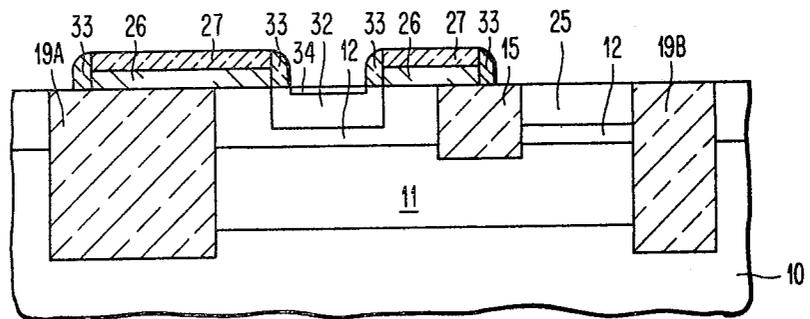


FIG. 16

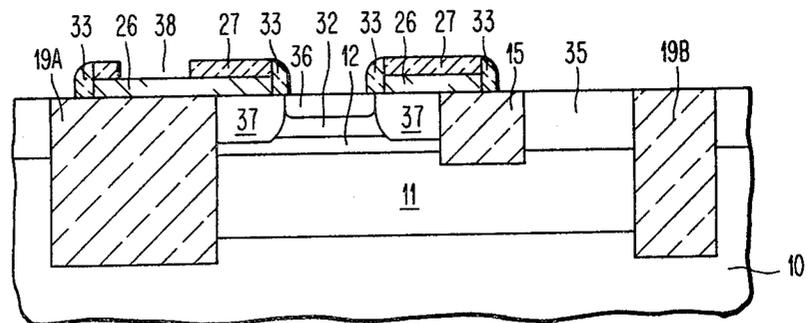


FIG. 17