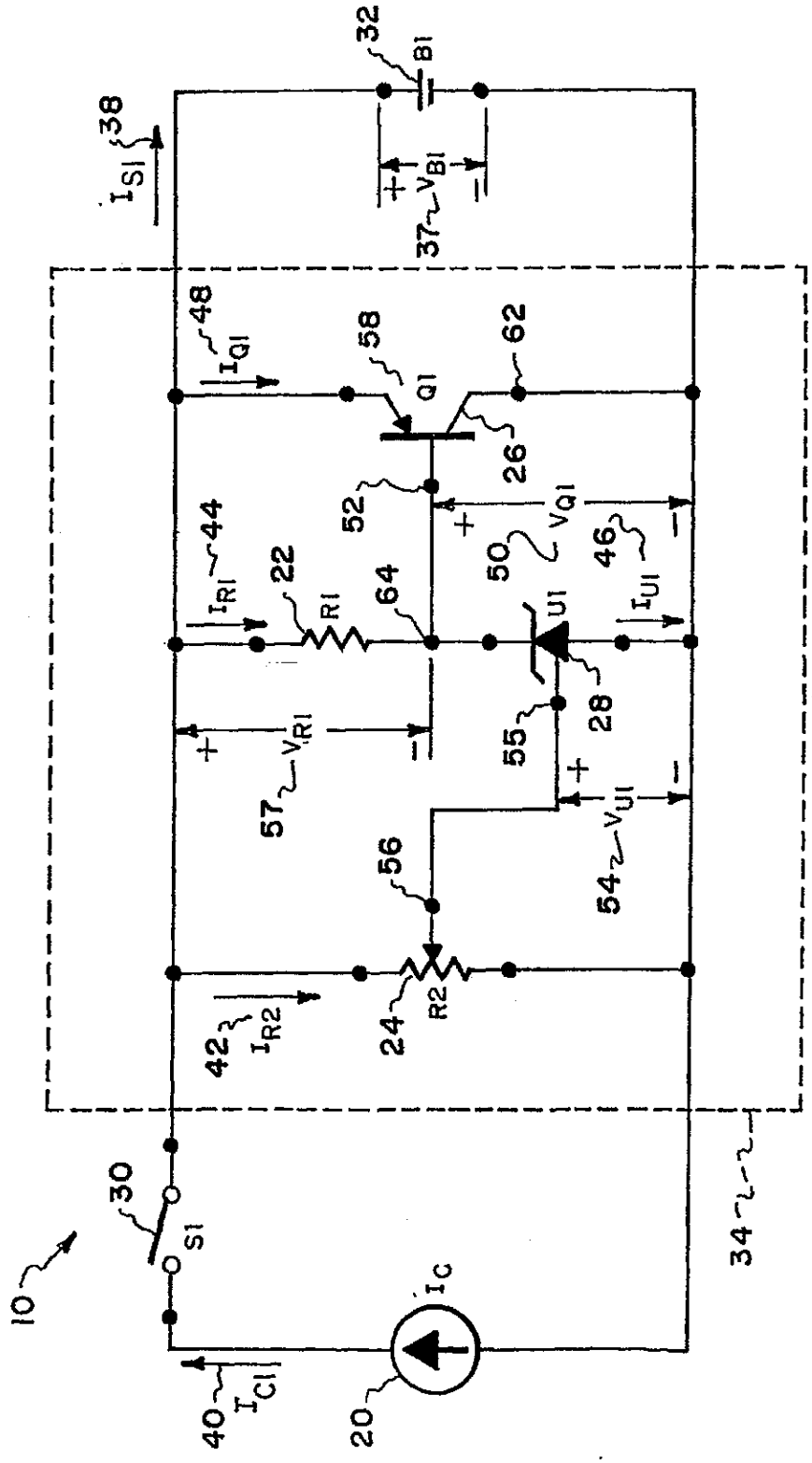
32
B1
38
$I_{S1}$
$V_{B1}$
37
48
$I_{Q1}$
58
Q1
62
26
52
$V_{Q1}$
50
46
44
$I_{R1}$
22
R1
64
U1
$I_{U1}$
28
55
$V_{R1}$
57
$V_{U1}$
54
56
42
$I_{R2}$
24
R2
30
S1
10
$I_C$
34
40
$I_{C1}$
20

Fig. 1.

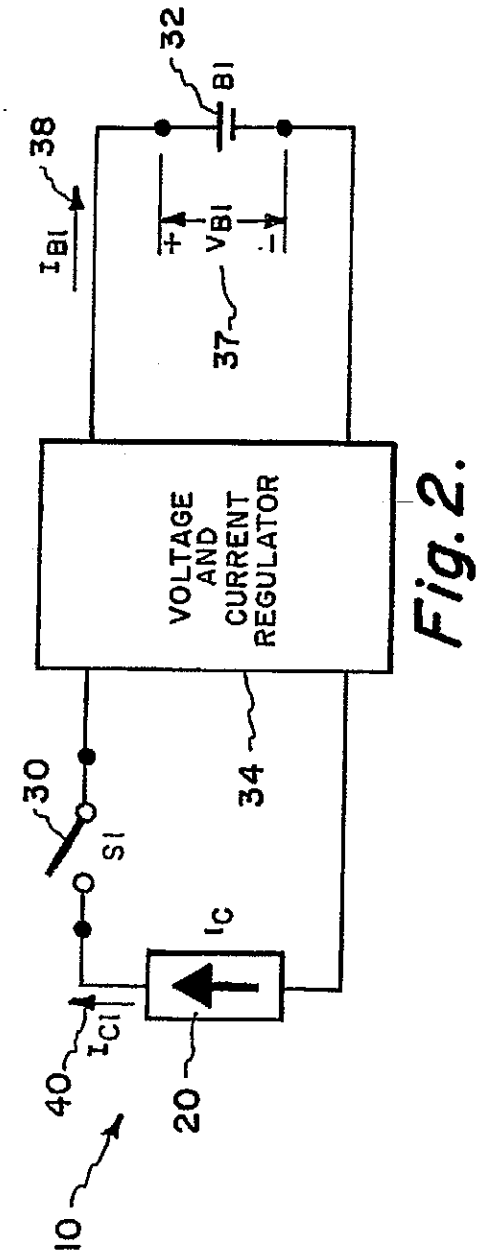
32
BI
38
$I_{BI}$
+
$V_{BI}$
-
37
VOLTAGE AND CURRENT REGULATOR
30
SI
34
$I_C$
$I_{CI}$
40
20
10

Fig. 2.

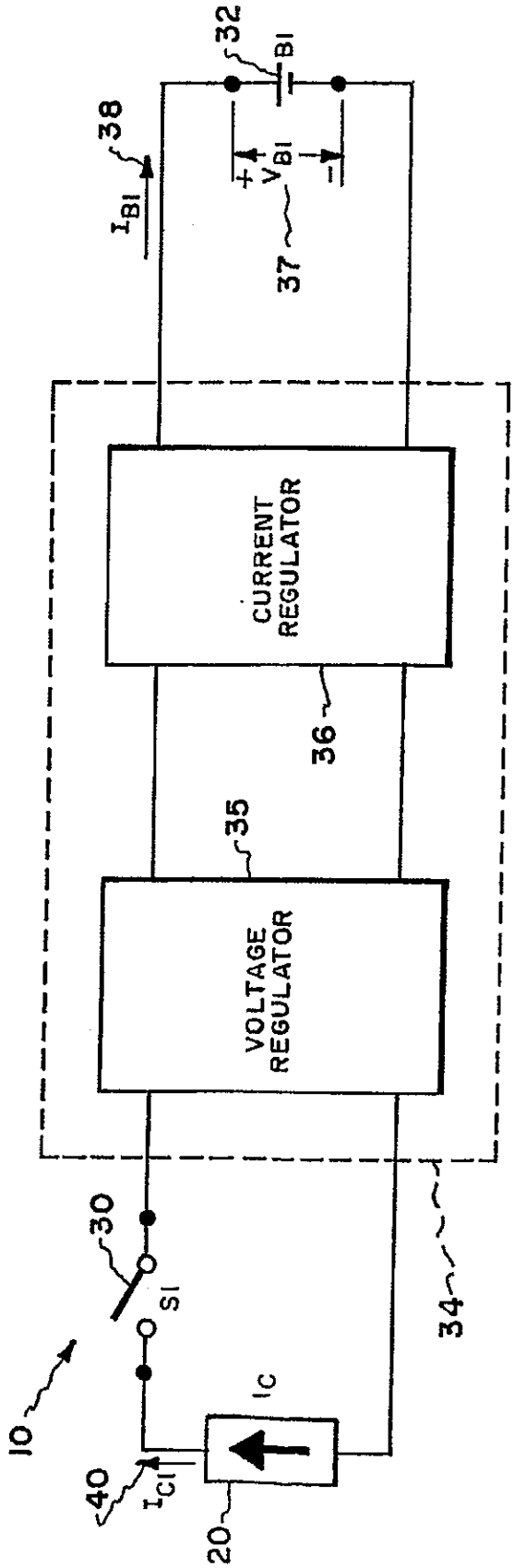
32
BI
38
$I_{BI}$
+
$V_{BI}$
-
37
CURRENT REGULATOR
36
35
VOLTAGE REGULATOR
30
SI
34
$I_C$
$I_{CI}$
40
20
10

Fig. 3.

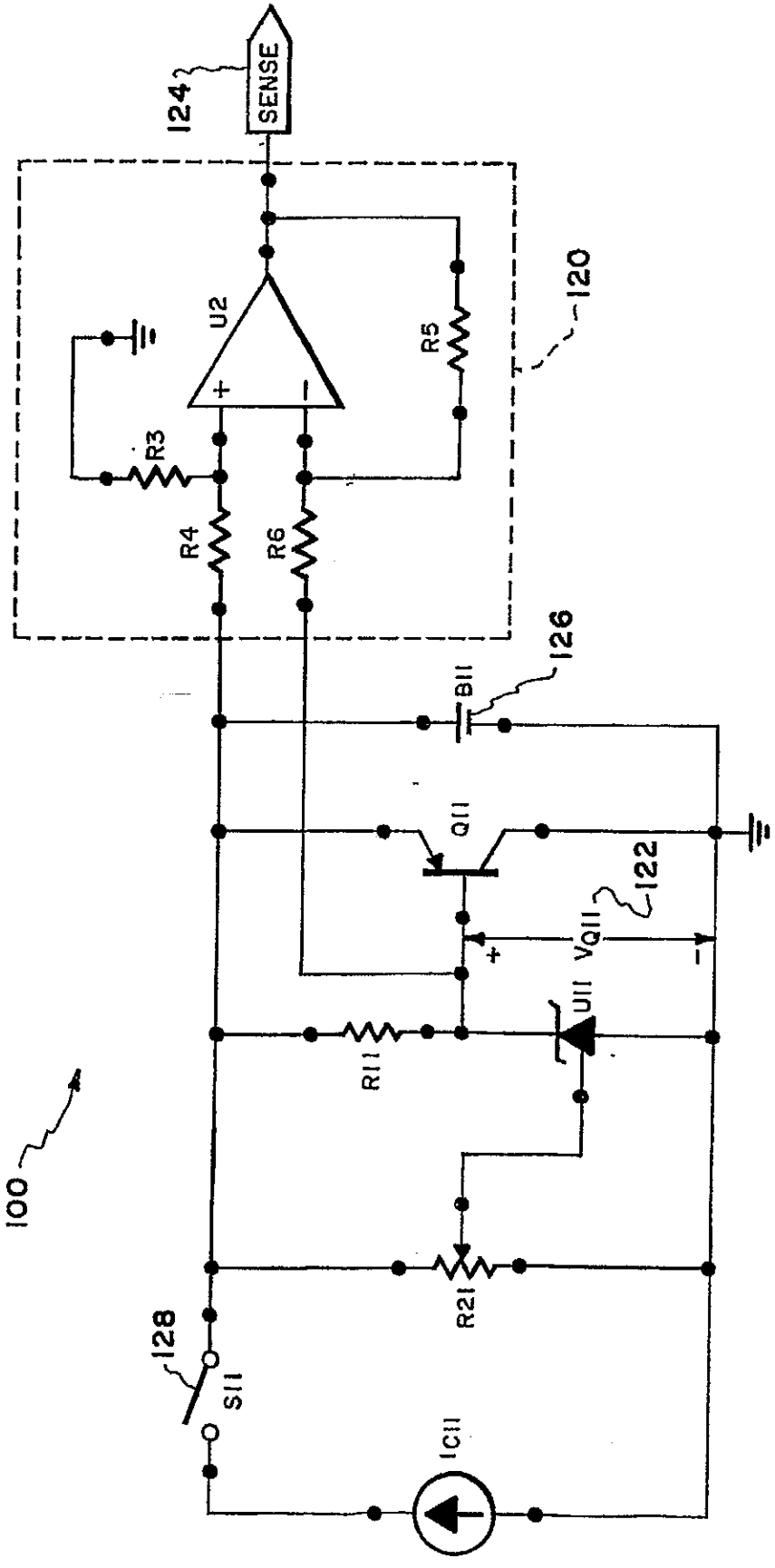
124
SENSE
120
U2
R5
R3
R4
R6
126
B11
Q11
122
VQ11
U11
R11
100
R21
128
S11
IC11

Fig. 4.

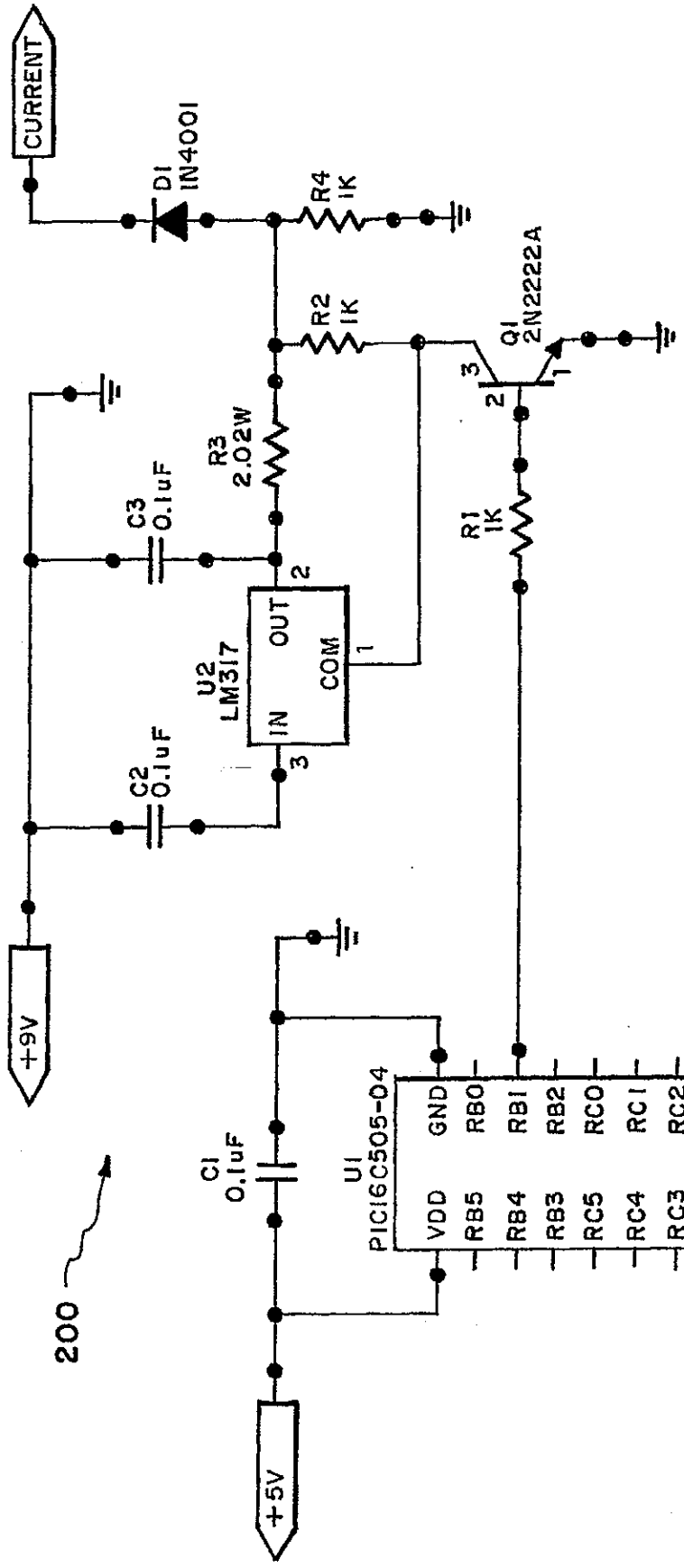
CURRENT
D1
IN4001
R4
1K
R2
1K
Q1
2N2222A
R3
2.02W
C3
0.1uF
R1
1K
U2
LM317
OUT
COM
IN
C2
0.1uF
+9V
C1
0.1uF
U1
PIC16C505-04
GND
RB0
RB1
RB2
RC0
RC1
RC2
VDD
RB5
RB4
RB3
RC5
RC4
RC3
+5V
200

Fig. 5.

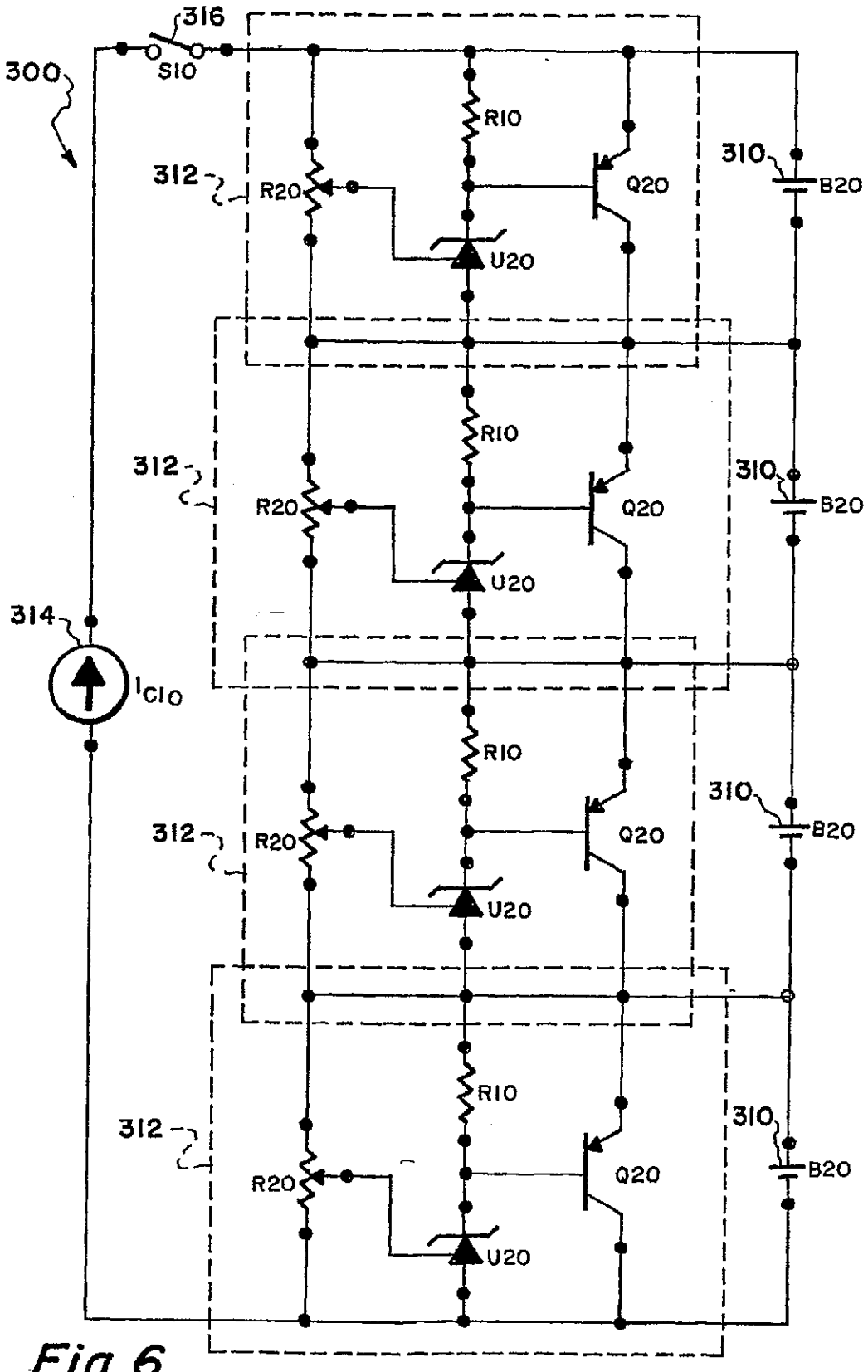


Fig. 6.

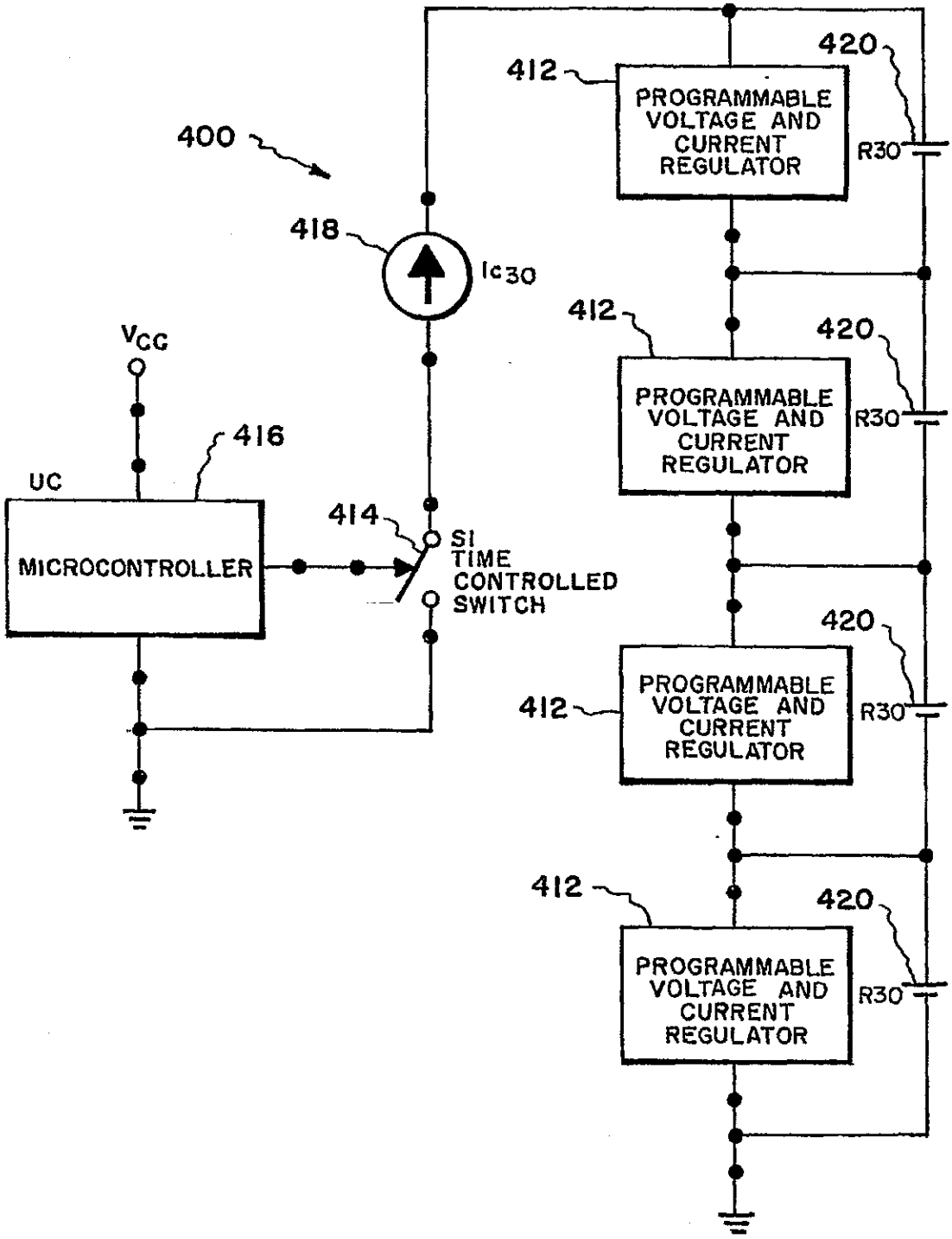
400
418
$I_{C30}$
$V_{CC}$
416
UC
MICROCONTROLLER
414
SI
TIME
CONTROLLED
SWITCH
412
PROGRAMMABLE VOLTAGE AND CURRENT REGULATOR
420
R30
412
PROGRAMMABLE VOLTAGE AND CURRENT REGULATOR
420
R30
412
PROGRAMMABLE VOLTAGE AND CURRENT REGULATOR
420
R30
412
PROGRAMMABLE VOLTAGE AND CURRENT REGULATOR
420
R30

*Fig. 7.*

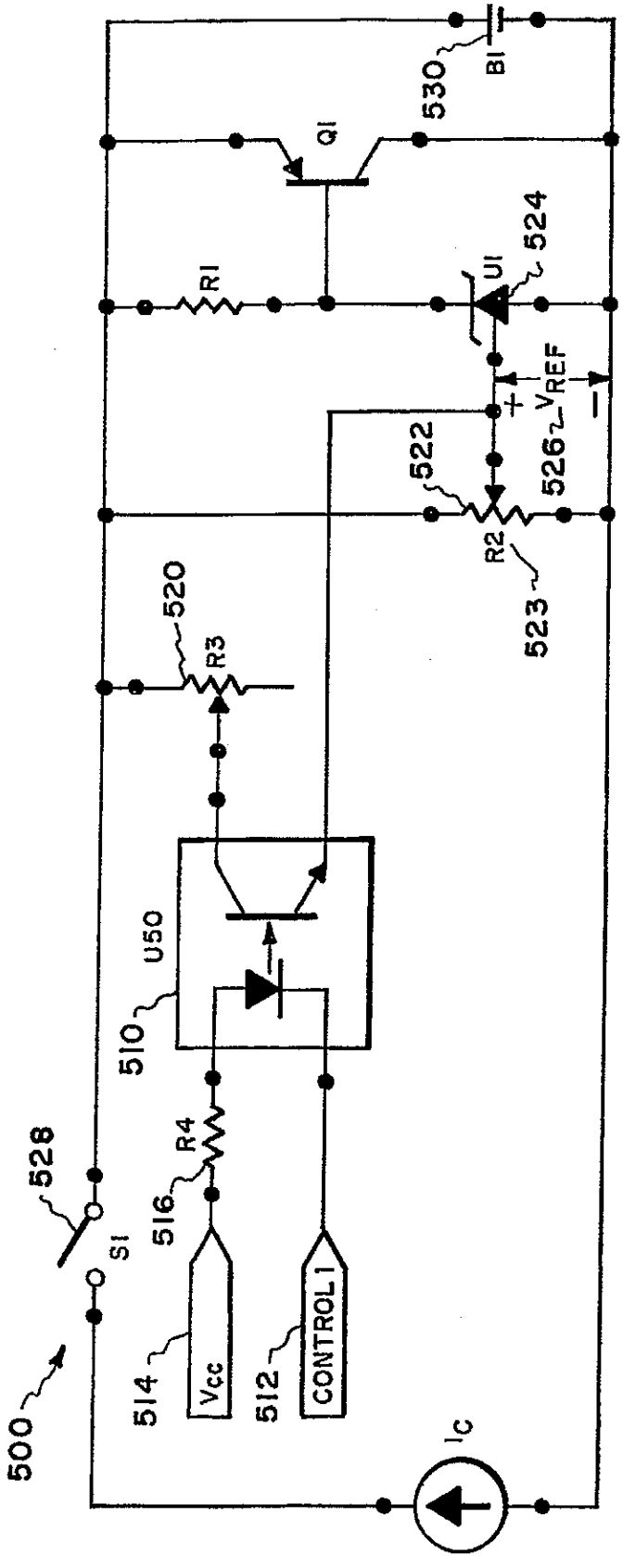
530
B1
Q1
524
U1
R1
$V_{REF}$
+
−
522
526
R2
523
520
R3
U50
510
528
R4
516
S1
514
$V_{cc}$
512
CONTROL 1
500
$I_C$

Fig. 8.

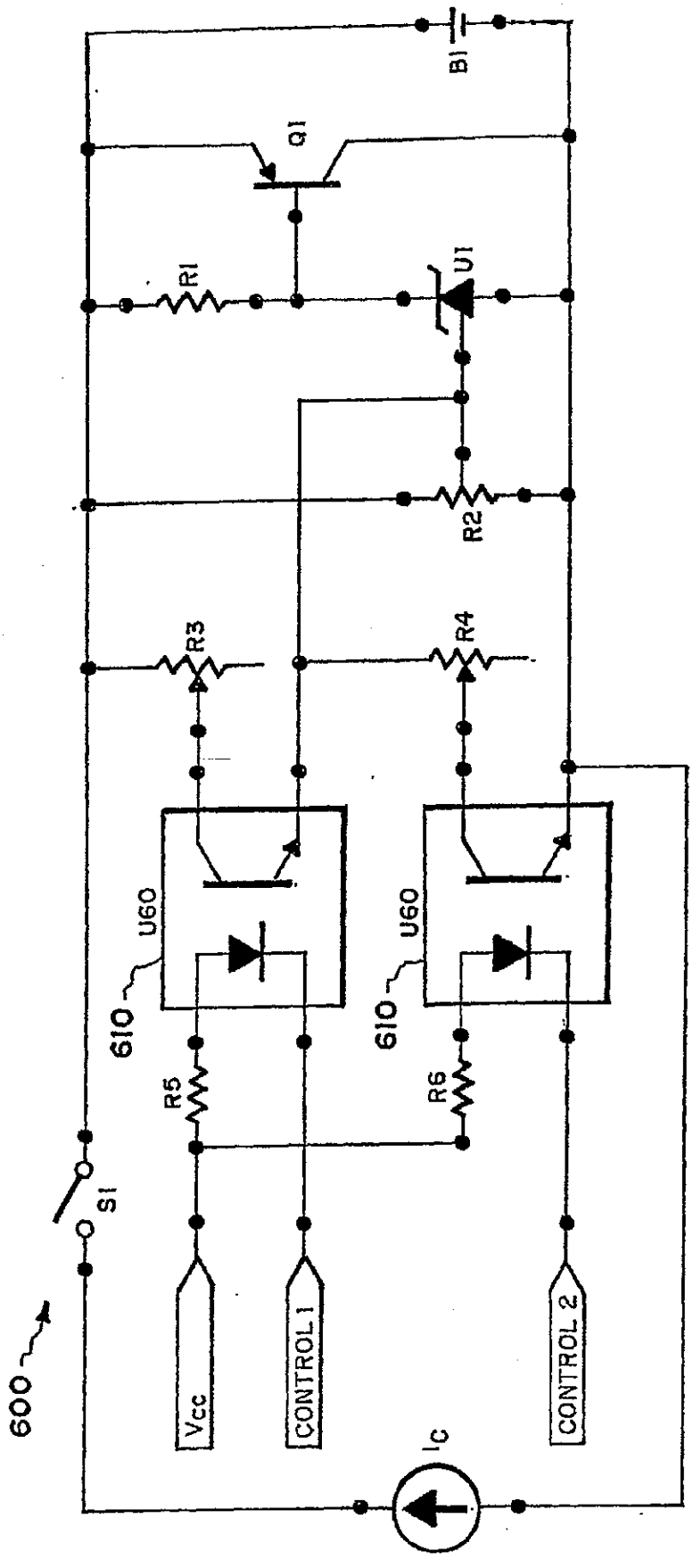
B1
Q1
R1
U1
R2
R3
R4
U60
610
U60
610
R5
R6
S1
600
Vcc
CONTROL 1
CONTROL 2
Ic

Fig. 9.