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(54) Converter device and corresponding method

(57) A converter for generating a d.c. output signal (OS) starting from a stabilized input voltage (Vs) present on a bus line includes a flyback inductor (22) driven with a bridge structure that includes a first branch (34, Q2) and a second branch (Q1, Q3) with respective intermediate points (A, B) for driving the terminals of the flyback inductor (22). The first branch (34, Q2) includes a diode (34), which is set between the bus line and the intermediate point (A) of the first branch, as well as a first electronic switch (Q2), which acts between the intermediate point (A) and ground. The second branch (Q1, Q3) includes a second electronic switch (Q1), which acts between the bus line and the intermediate point (B), as well as a third electronic switch (Q3), which acts between the intermediate point (B) of the second branch and ground.

A control unit (1000) is provided, which implements cyclically the sequence that includes:

- a) bringing about a ramp-like increase of a magnetizing current in the flyback inductor (22) following upon activation of the first switch (Q2) and of the second switch (Q1);
- b) de-activating the first switch (Q2) and the second switch (Q1) when the magnetizing current in the flyback inductor (22) reaches a given peak value;
- c) activating the third switch (Q3), thus bringing about transfer of energy in the flyback inductor (22); and
- d) activating the first switch (Q2) and de-activating the third switch (Q3) when the voltage on the first switch (Q2) has reached zero.

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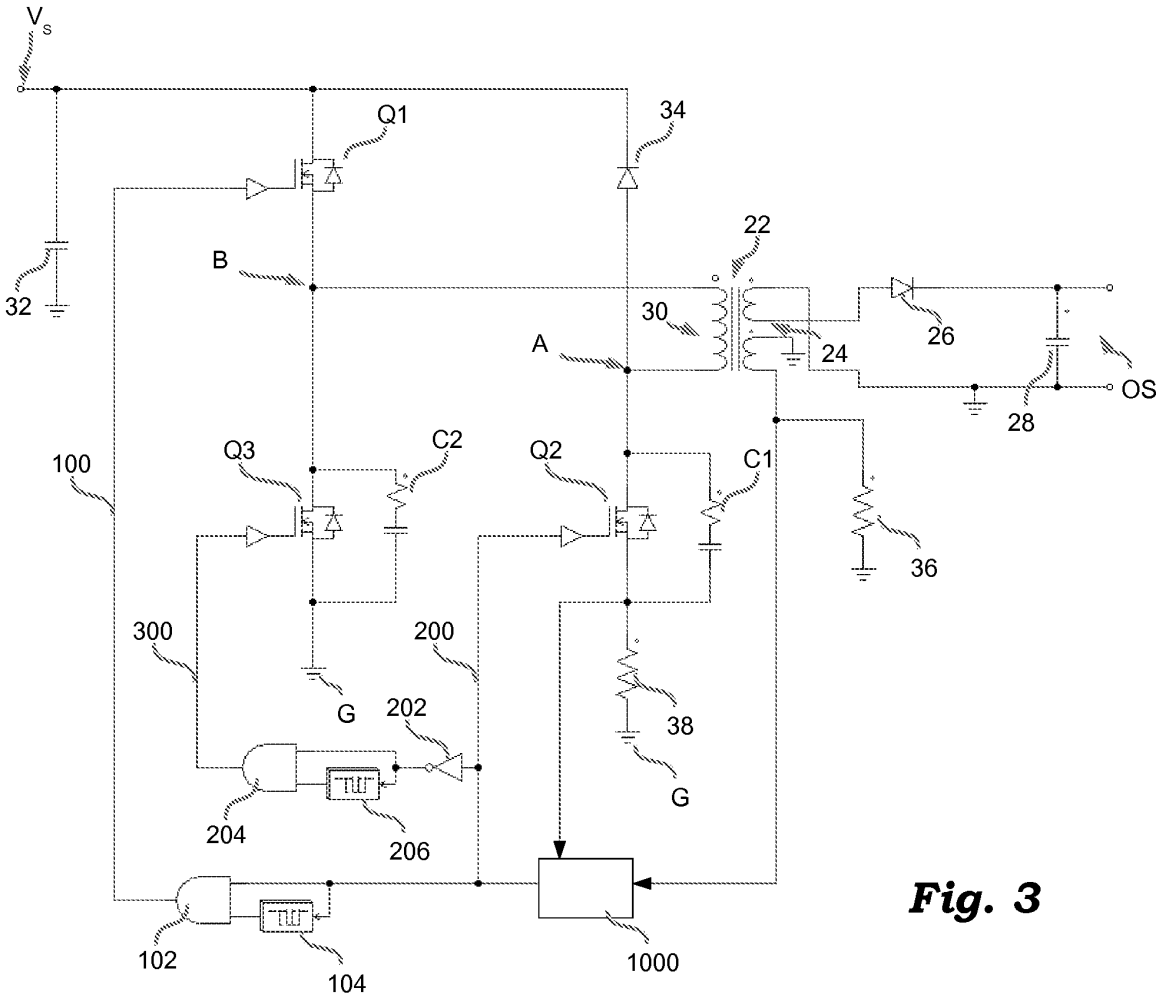
Vs
Q1
34
22
B
32
30
26
24
A
OS
28
100
Q3
C2
Q2
C1
36
300
200
G
202
38
G
204
206
102
104
1000

Fig. 3