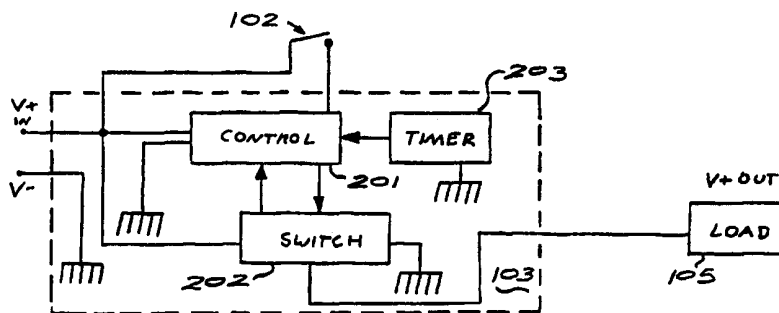




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (51) International Patent Classification ⁷ : H05B 37/00, 41/30, 41/32, G08B 21/00, H01M 10/48 | A3 | (11) International Publication Number: WO 00/22890 (43) International Publication Date: 20 April 2000 (20.04.00) |
| (21) International Application Number: PCT/ZA99/00107 (22) International Filing Date: 8 October 1999 (08.10.99) (30) Priority Data: 09/169,395 9 October 1998 (09.10.98) US (71)(72) Applicant and Inventor: BRUWER, Frederick, Johannes [ZA/ZA]; Unit 2, Lifestyle Management Park, 0157 Lyttelton (ZA). (74) Agent: McCALLUM RADEMEYER & FREIMOND; P.O. Box 1130, 2125 Randburg (ZA). | (81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 26 October 2000 (26.10.00) | |

(54) Title: INTELLIGENT FLASHING



(57) Abstract

The present invention provides for a unique microchip or circuit which can, *inter alia*, handle both current conducting functions and man-machine-interface functions in an electrical device, for example, such as a flashlight. The man-machine-interface functions, according to the present invention, may be controlled by very low current signals, touch pads, carbon coated membrane type switches, or other low current type switches. These low current switches are smaller, more reliable, less costly, easier to seal, and less vulnerable to corrosion and oxidation than prior art switches. Moreover, since according to the present invention, the current conducting switch is controlled in an intelligent manner by the same microchip which provides the man-machine-interface functioning, significant costs savings and reliability are achieved by the invention. The present invention, according to one embodiment, also provides a microchip or circuit which may be embedded into a power source, for example, a battery, that supplies intelligence to the same. As a result, and according to the invention, functions such as delayed switching, dimming, delayed automatic shut off and an intermittent activation may be realized in less intelligent prior art electrical devices. According to certain embodiments of the present invention, the inventive microchips or circuits of the present invention can, *inter alia*, adjust the average electrical current through a current switch, provide an "on" and "off" sequence which, in the case of a flashlight, can be determined by an operator and may represent either a flash code sequence or a simple on-off oscillation, delayed shut off function, dimming function, provide indication of power strength, and provide gradual oscillating current flow to lengthen the life of the operating switch and the battery, etc. The function can be selected by varying the time period which elapses between successive activations of a controlling switch.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/ZA 99/00107

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H05B37/00 H05B41/30 H05B41/32 G08B21/00 H01M10/48

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 H05B G08B H01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal, WPI Data, IBM-TDB, INSPEC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | page 1, line 3-6 page 3, line 26 -page 6, line 27; claims 1-16; figures 1,2 | 3,4,6,7, 9-13,16, 18,19 |
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Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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| 28 July 2000 | 07.08.00 |

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| Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | Authorized officer <p style="text-align: center;">Pierron, P</p> |
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| Inter. Patent Application No. PCT/ZA 99/00107 |
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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ZA 99/00107

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-19, 46

An intelligent flashlight

2. Claims: 20-30, 44

An intelligent battery

3. Claims: 31-40

A portable microchip device

4. Claims: 41-43, 45

An intelligent portable electrical device

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/ZA 99/00107

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