

Title (en)  
Printer and charging device

Title (de)  
Drucker und Ladegerät

Title (fr)  
Imprimante et dispositif de charge

Publication  
**EP 1057652 A3 20010822 (EN)**

Application  
**EP 00304308 A 20000522**

Priority  
JP 14723399 A 19990526

Abstract (en)  
[origin: EP1057652A2] The object of the present invention is to realize a charging device of a backup power supply for supplying power to perform backup operation to a printer by simplified circuit configuration. The other object of the present invention is to provide a printer which can decrease use of components such as a primary battery undesirable for environment and can realize low cost and low power consumption. The main power supply unit (6B) of the present invention transits to sleep mode from ON state when a panel switch (5) is turned off. A RTC (34) has a timer (34B) and a comparator (34C), checks output voltage of the rechargeable battery (36a) by the comparator (34C). When the comparator (34C) detected that the output voltage became lower than a reference voltage RefV, the RTC (34) outputs a power ON signal (34d) until the timer (34B) counts up 3 minutes. A second switch (38) is turned on by the power ON signal (34d), and the main power supply unit (6B) returns to ON state only for 3 minutes in order to charge the rechargeable battery (30a) by using power supplied from the main power supply unit (6B). <IMAGE>

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**B41J 29/393**

IPC 8 full level  
**B41J 29/393** (2006.01)

CPC (source: EP)  
**B41J 29/393** (2013.01)

Citation (search report)

- [X] US 5449238 A 19950912 - PHAM NGOC Q [DE], et al
- [A] FR 2719947 A1 19951117 - MOULAGES PLASTIQUES ROCHELAIS [FR]
- [A] EP 0709943 A2 19960501 - CANON KK [JP]
- [A] US 5218286 A 19930608 - VANDUNK GUY J [US]
- [A] US 4743831 A 19880510 - YOUNG JAMES E [US]
- [XA] PATENT ABSTRACTS OF JAPAN vol. 018, no. 602 (M - 1705) 16 November 1994 (1994-11-16)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1997, no. 05 30 May 1997 (1997-05-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 013, no. 176 (E - 749) 25 April 1989 (1989-04-25)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1997, no. 12 25 December 1997 (1997-12-25)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 06 30 April 1998 (1998-04-30)

Cited by  
JP2012237821A; CN109803832A; CN106394024A; US2015314593A1; US9289980B2; US9398174B2; US9558435B2; WO2018067132A1; US10836156B2; US11325371B2

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