

Title (en)  
DOUBLE SHEET DETECTOR FOR AUTOMATED TRANSACTION MACHINE

Title (de)  
DOPPELBOGENERKENNUNGSEINRICHTUNG FÜR BANKMASCHINEN

Title (fr)  
PROCEDE DE DETECTION DOUBLE DE FEUILLES DESTINE A UNE MACHINE POUR TRANSACTION AUTOMATIQUE

Publication  
**EP 1177535 A4 20060531 (EN)**

Application  
**EP 00903208 A 20000107**

Priority  

- US 0000560 W 20000107
- US 13361399 P 19990511
- US 37596099 A 19990817
- US 37613899 A 19990817

Abstract (en)  
[origin: WO0068900A1] An automated transaction machine includes apparatus for distinguishing between single sheets and multiple sheets in a sheet path. The apparatus includes radiation emitters (14, 34) and radiation detectors (20, 40, 42). The radiation emitters are operated to emit radiation at periodic intervals. Signal conditioners (50) receive signals from the radiation detectors and generate outputs responsive to the intensities sensed by the detectors substantially only during the periodic intervals. The outputs are combined, weighed and/or compared to thresholds to distinguish single and multiple sheets. The apparatus enables reliable operation in noisy electrical environments and with a wide variety of sheet properties.

IPC 1-7  
**G07D 7/12**; **G06K 9/00**

IPC 8 full level  
**G07D 7/12** (2006.01); **G07D 7/16** (2006.01)

CPC (source: EP)  
**G07D 7/12** (2013.01); **G07D 7/183** (2017.04)

Citation (search report)  

- [XY] US 5692067 A 19971125 - RATERMAN DONALD E [US], et al
- [Y] US 4723072 A 19880202 - NARUSE KAZUAKI [JP]
- See references of WO 0068900A1

Citation (examination)  

- EP 0028056 A1 19810506 - NCR CANADA [CA]
- GB 2089983 A 19820630 - GAO GES AUTOMATION ORG
- EP 0342647 A2 19891123 - SIEMENS NIXDORF INF SYST [DE]
- FR 2492349 A1 19820423 - TRANSAC DEV TRANSACT AUTOMAT [FR]
- GB 2248333 A 19920401 - ACT SOFT HARDWARE [DE]

Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**WO 0068900 A1 20001116**; **WO 0068900 A9 20020214**; BR 0007740 A 20011106; BR 0007740 B1 20131001; CA 2362121 A1 20001116; CA 2362121 C 20060418; CN 100361164 C 20080109; CN 1347538 A 20020501; EP 1177535 A1 20020206; EP 1177535 A4 20060531; MX PA01011472 A 20020604; PL 197470 B1 20080430; PL 349185 A1 20020701

DOCDB simple family (application)  
**US 0000560 W 20000107**; BR 0007740 A 20000107; CA 2362121 A 20000107; CN 00806474 A 20000107; EP 00903208 A 20000107; MX PA01011472 A 20000107; PL 34918500 A 20000107