



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 090 860 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
26.02.2003 Bulletin 2003/09

(51) Int Cl.7: **B65H 3/24**

(43) Date of publication A2:
11.04.2001 Bulletin 2001/15

(21) Application number: **00308513.1**

(22) Date of filing: **28.09.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(71) Applicant: **SANKYO SEIKI MFG. CO. LTD.**
Suwa-gun Nagano-ken (JP)

(72) Inventor: **Oguchi, Katsuaki**
5329 Shimosuwa-machi Suwa-gun Nagano (JP)

(30) Priority: **28.09.1999 JP 27532099**
05.10.1999 JP 28490399
05.10.1999 JP 28490999
05.10.1999 JP 28491899

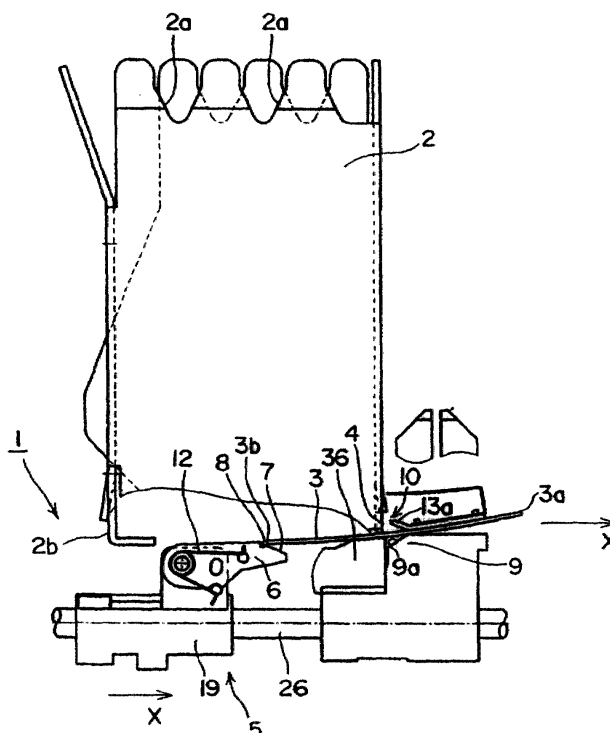
(74) Representative: **Kinsler, Maureen Catherine et al**
Kilburn & Strode,
20 Red Lion Street
London WC1R 4PJ (GB)

(54) Mechanism for and method of feeding cards

(57) A card feeding mechanism for feeding cards (3) one by one from a gate portion (4) at the bottom of a hopper (2), which card feeding mechanism is operable to engage the back end (3b) of each card (3), wherein

the gate portion (4) is adapted so that the back end of the card (3b) is pressed against the card feeding mechanism when a part of the card comes through the gate portion (4).

Fig. 6



EP 1 090 860 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 30 8513

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 4 344 611 A (MORITA SHIGERU) 17 August 1982 (1982-08-17) * figures 9-14 *	1,3-6,8, 9,11	B65H3/24
X	US 4 405 124 A (WATANABE MICHITOSHI) 20 September 1983 (1983-09-20) * figures 5-10 *	1,3-6,8, 9,11	
X	DE 39 12 112 A (METRONIC GERAETEBAU) 18 October 1990 (1990-10-18) * claim 1; figures *	1,3,6,8, 9,11	
X	FR 2 763 320 A (DELSOL ET COMPAGNIE) 20 November 1998 (1998-11-20) * page 21, line 15 - page 23, line 18; figure 15 *	1,3,6,8, 9,11	
X	US 3 525 518 A (OATEN ALBERT W) 25 August 1970 (1970-08-25) * claim 1; figures *	1,3,6,8, 9,11	
X	PATENT ABSTRACTS OF JAPAN vol. 012, no. 336 (M-739), 9 September 1988 (1988-09-09) -& JP 63 097538 A (KUBOTA LTD), 28 April 1988 (1988-04-28) * abstract; figures *	12-33	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65H
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 02, 26 February 1999 (1999-02-26) -& JP 10 293818 A (NIPPON CONLUX CO LTD), 4 November 1998 (1998-11-04) * figures 16,17,20-25 *	12-33	
A	US 3 785 637 A (VAN DER DOES L) 15 January 1974 (1974-01-15) * figures *	12-33	
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 4 December 2002	Examiner Fuchs, H
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03 82 (P04C01)



European Patent
Office

Application Number

EP 00 30 8513

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent
Office

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 00 30 8513

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-11

Gate portion adapted so that the back end of a card is pressed against the card feeding mechanism when a part of the card comes through the gate portion and wherein the card feeding mechanism is adapted to move backward when the part of the card comes through the gate portion, before moving forward again to feed the card through the gate portion.

2. Claims: 12-33

Movable card stopper for selectively opening and closing a gate opening, wherein means are provided for activating the card stopper to open the gate opening dependant on a position of the card feeding mechanism.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 8513

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-12-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4344611	A	17-08-1982	JP 1225975 C	31-08-1984
			JP 57013040 A	23-01-1982
			JP 59000387 B	06-01-1984
US 4405124	A	20-09-1983	NONE	
DE 3912112	A	18-10-1990	DE 3912112 A1	18-10-1990
FR 2763320	A	20-11-1998	FR 2763320 A1	20-11-1998
US 3525518	A	25-08-1970	DE 1938239 A1	19-03-1970
			FR 2017605 A5	22-05-1970
			GB 1260429 A	19-01-1972
			JP 48020390 B	20-06-1973
JP 63097538	A	28-04-1988	NONE	
JP 10293818	A	04-11-1998	NONE	
US 3785637	A	15-01-1974	NL 7100002 A	06-07-1972
			CA 941398 A1	05-02-1974
			CH 530649 A	15-11-1972
			DE 2164212 A1	27-07-1972
			FR 2121072 A5	18-08-1972
			GB 1301970 A	04-01-1973
			IT 945838 B	10-05-1973
			JP 52026127 B	12-07-1977
			SE 361742 B	12-11-1973