



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**24.10.2001 Bulletin 2001/43**

(51) Int Cl.7: **B65H 37/00**

(43) Date of publication A2:  
**13.06.2001 Bulletin 2001/24**

(21) Application number: **00310625.9**

(22) Date of filing: **30.11.2000**

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

(30) Priority: **08.12.1999 JP 34875799**

(71) Applicant: **SEED RUBBER COMPANY LTD.**  
**Osaka (JP)**

(72) Inventors:  
 • **Tamai, Shigeru**  
**Ikeda-shi, Osaka (JP)**  
 • **Shintani, Masatoshi**  
**Hyogo (JP)**  
 • **Koyama, Kouhei**  
**Kyoto-shi, Kyoto (JP)**

(74) Representative: **Mouteney, Simon James**  
**MARKS & CLERK,**  
**57-60 Lincoln's Inn Fields**  
**London WC2A 3LS (GB)**

(54) **Coat film transfer head device and coat film transfer tool**

(57) A coat film transfer head device provided with a structure that absorbs strong shocks applied to the head and reliably prevents damage to the head and breakage of the coat film transfer tape. There is provided a shock absorbing structure (3) that absorbs the shocks applied to the head body (20) for press-transfer of the

coat film transfer tape (T), and even when the coat film transfer tool (1) is dropped during one-handed operation or transport for instance, giving strong shocks to the head body (20), such shocks will be effectively absorbed by the shock absorbing structure (3) so that the tip pressure piece (20c) of the head body (20) may be prevented from damage or the like.

**FIG.1**

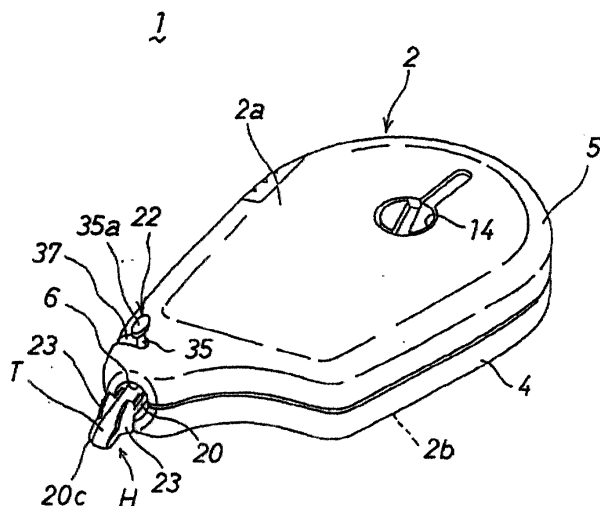
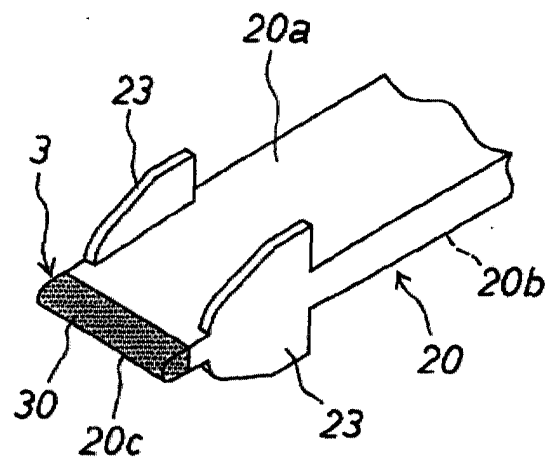


FIG. 4(a)





European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 31 0625

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	EP 0 606 477 A (FUJI KAGAKU SHIKOGYO) 20 July 1994 (1994-07-20)	1-5,7, 11,18, 19,26,30 4	B65H37/00
Y	* column 2, line 38 - line 41 * * column 8, line 31 - line 35 * * column 10, line 48 - column 11, line 11 * * column 17, line 23 - column 18, line 39; figures 2,3,7-11,17,18 *		
Y	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 13, 30 November 1999 (1999-11-30) & JP 11 230265 A (NIKKO KOGYO KK), 27 August 1999 (1999-08-27) * abstract *	4	
X	US 4 851 076 A (MANUSCH CHRISTOPH ET AL) 25 July 1989 (1989-07-25) * column 4, line 27 - line 43; figure 2 *	1,11,12	
X	EP 0 427 870 A (FUJI KAGAKU SHIKOGYO) 22 May 1991 (1991-05-22) * column 24, line 1 - line 42; figures 26,27 *	14	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65H
X	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 05, 31 May 1996 (1996-05-31) -& JP 08 002785 A (GENERAL KK), 9 January 1996 (1996-01-09) * abstract; figures *	21	
Y		14,15,17	
		-/--	
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 23 August 2001	Examiner David, P
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p> <p>&amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P04C01)



European Patent  
Office

Application Number

EP 00 31 0625

### 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

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 31 0625

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)	
Y	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 14, 31 December 1998 (1998-12-31) -& JP 10 231062 A (GENERAL CO LTD), 2 September 1998 (1998-09-02) * abstract; figures *	14,15,17		
X	US 5 792 263 A (KOYAMA KOUHEI ET AL) 11 August 1998 (1998-08-11) * column 5, line 43 - column 8, line 47 * * column 11, line 39 - column 12, line 51; figures 1,9 *	22-25, 27,28		
X	US 5 785 437 A (KOYAMA KOUHEI ET AL) 28 July 1998 (1998-07-28) * column 5, line 28 - column 8, line 4 * * column 9, line 48 - column 10, line 7; figures 1,9 *	22-25, 27,29		
X	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 08, 30 June 1999 (1999-06-30) -& JP 11 078380 A (FUJICOPIAN CO LTD), 23 March 1999 (1999-03-23) * abstract; figures *	1		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 01, 28 February 1995 (1995-02-28) -& JP 06 286926 A (FUJICOPIAN CO LTD), 11 October 1994 (1994-10-11) * abstract; figures *	1		
The present search report has been drawn up for all claims				
Place of search BERLIN		Date of completion of the search 23 August 2001	Examiner David, P	
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>				

EPC FORM 1503 03 52 (P04001)



European Patent  
Office

**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number

EP 00 31 0625

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: 1-5, 7, 11, 18, 19, 26, 30**

EP 0 606 477 discloses (cf. column 10, line 48 to column 11, line 11, fig. 3, 7-11) a coat film transfer head device 4 to transfer a coat tape 2 unwound from reel 5, which is disposed at the tip of a film transfer tool, comprising a shock absorbing means 6 to absorb shocks applied to a head body 4A which presses and transfers the coat film transfer tape 2.

The subject-matter of claim 1 is therefore not new in the sense of Article 54(1) and (2) EPC.

EP 0 606 477 discloses also the subject matter of claims 2-3, 5 (cf. column 10, line 48 to column 11, line 11, fig. 3, 7-11), 7 (cf. column 2, lines 38-41), 11, 18 and 19 (cf. column 17, line 23 to column 18, line 39, fig. 17, 18), 26 (cf. fig. 3, column 8, lines 31-35), 30 (cf. fig. 2), .

The subject matter of claim 4 differs from that of EP 0 606 477 in that the shock absorbing means consists in shock absorbers alternately connected in one piece with the base material portion of said head body at a plurality of portions in a lengthwise direction.

As the problem of merely improving the shock absorbing means is not new (see EP 0 606 477, column 2, lines 38-45) and therefore can not be used for uniting the remaining claims, the problem to be solved by the special technical features of claim 4 may be regarded as how to carry out a multiple stages shock absorber.

**2. Claim : 6**

The subject matter of claim 6 differs from that of EP 0 606 477 (cf. column 14, lines 6-26, fig. 11) in that, when excessive shocks are applied to said shock absorber the latter will slide in a lateral direction to absorb the shocks.

The problem to be solved by these special technical features may be regarded as how to transfer the absorption of energy of the shock absorbing means in a direction transverse to the direction of deformation.

**3. Claims: 8, 9**

The subject matter of claim 8 differs from that of EP 0 606 477 in that the frame structure of the resiliently flexible



European Patent  
Office

LACK OF UNITY OF INVENTION  
SHEET B

Application Number  
EP 00 31 0625

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:

member has a hollow.

The subject matter of claim 9 differs from that of EP 0 606 477 in that the resiliently flexible member comprises a thin plate flexible member body extending in parallel to said head body and a thin plate guide which is formed in one piece with the tip of the flexible member body at a specified angle of inclination.

The problem to be solved by these special technical features may be regarded as how to improve the flexibility of a flexible member made of the same material as the base material of said head body and formed in one piece with the tip of said head body.

4. Claim : 10

The subject matter of claim 10 differs from that of EP 0 606 477 in that the resiliently flexible member comprises a resiliently flexible framework structure formed in one piece of a framework member.

The problem to be solved by this special technical feature may be regarded as how to improve the solidity of a flexible member made of the same material as the base material of the head body and in one piece with the tip of said head body.

5. Claims: 12, 13

The subject matter of claim 12 differs from that of EP 0 606 477 in that the resiliently flexible member is formed of at least one linear rod whose cross-sectional area is smaller than that of said head body.

The subject matter of claim 13 differs from that of EP 0 606 477 in that the resiliently flexible member comprises a zigzag structure whose cross-sectional area is smaller than that of said head body.

The problem to be solved by these special technical features may be regarded as how to simplify shock absorbing means of the type being made up of the same material as the base material of the head body and being formed in one piece with the base end portion of said head body.

6. Claims: 14-17

The subject matter of claim 14 differs from that of EP 0 606



European Patent  
Office

LACK OF UNITY OF INVENTION  
SHEET B

Application Number  
EP 00 31 0625

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:

477 in that the shock absorbing means is retractably disposed at the tip of said head body and comprises a head member having a head tip edge for pressing and transferring the coat film transfer tape.

The problem to be solved by these special technical features may be regarded as how to improve the protection of said head tip edge.

7. Claims: 20, 22-25

The subject matter of claim 20 differs from that of EP 0 606 477 in that the support shaft being part of the shock absorbing means and in one piece with the base end of said head body is rotatably held by said body support.

The subject matter of claim 22 differs from that of EP 0 606 477 in that the head body comprises a rotary head structure which is disposed at a head retainer and is rotatable about its axis.

The problem to be solved by these special technical features may be regarded as how to improve the handling of the coat film transfer head device.

8. Claim : 21

The subject matter of claim 21 differs from that of EP 0 606 477 in that the support shaft being part of the shock absorbing means and in one piece with the base end of said head body is provided with a spring which applies forwardly urging forces to said head body.

The problem to be solved by these special technical features may be regarded as how to improve absorption capacity of the shock absorbing means of the type being in one piece with the base end of the head body and comprising a support shaft being axially retractably held by body support.

9. Claim : 27

The subject matter of claim 27 differs from that of EP 0 606 477 in that the tip pressure piece of said head body has a linear tip edge extending almost in parallel with the grip surfaces of the case.

The problem to be solved by this special technical feature may be regarded as how to provide a structure to be used for





European Patent  
Office

**LACK OF UNITY OF INVENTION**  
**SHEET B**

Application Number  
EP 00 31 0625

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:

lateral pull-slide motion only.

10. Claims: 28, 29

The subject matter of claim 28 and 29 differs from that of EP 0 606 477 in that the rotatable unwinding reel with a coat film transfer tape wound thereon and the rotatable winding reel to recover the used coat film transfer tape are mounted in a cartridge removably disposed in the case of the transfer tool.

The problem to be solved by these special technical features may be regarded as how to make the product more cost effective.



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 31 0625

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	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11, 30 September 1999 (1999-09-30) -& JP 11 170774 A (SAKURA COLOR PROD CORP), 29 June 1999 (1999-06-29) * abstract; figures * -----	1,18	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search <b>BERLIN</b>		Date of completion of the search <b>23 August 2001</b>	Examiner <b>David, P</b>
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)

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

EP 00 31 0625

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.

23-08-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0606477 A	20-07-1994	JP 5178525 A	20-07-1993
		AU 666874 B	29-02-1996
		AU 2684992 A	03-05-1993
		AU 3425995 A	04-01-1996
		CA 2119865 A	15-04-1993
		EP 0742111 A	13-11-1996
		WO 9307009 A	15-04-1993
		US 5430904 A	11-07-1995
JP 11230265 A	27-08-1999	NONE	
US 4851076 A	25-07-1989	DE 3638722 A	26-05-1988
		AT 54117 T	15-07-1990
		DE 3644946 A	26-05-1988
		DE 3763398 D	02-08-1990
		EP 0267396 A	18-05-1988
		ES 2016831 T	01-12-1990
		GR 3000586 T	31-07-1991
		JP 6059963 B	10-08-1994
		JP 63235256 A	30-09-1988
		US 4851076 B	26-10-1999
EP 0427870 A	22-05-1991	AU 628179 B	10-09-1992
		AU 5651290 A	18-12-1990
		CA 2033057 A	21-11-1990
		WO 9014299 A	29-11-1990
JP 08002785 A	09-01-1996	NONE	
JP 10231062 A	02-09-1998	NONE	
US 5792263 A	11-08-1998	JP 2943134 B	30-08-1999
		JP 9123690 A	13-05-1997
		AU 711604 B	14-10-1999
		CN 1131120 A	18-09-1996
		EP 0717000 A	19-06-1996
		EP 0924150 A	23-06-1999
		KR 228007 B	01-11-1999
US 5785437 A	28-07-1998	JP 3027309 B	04-04-2000
		JP 8156495 A	18-06-1996
		AU 711604 B	14-10-1999
		AU 4037295 A	20-06-1996
		CA 2164757 A	13-06-1996
		CN 1131120 A	18-09-1996
		EP 0717000 A	19-06-1996

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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

EP 00 31 0625

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.

23-08-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5785437 A		EP 0924150 A KR 228007 B	23-06-1999 01-11-1999
JP 11078380 A	23-03-1999	NONE	
JP 06286926 A	11-10-1994	NONE	
JP 11170774 A	29-06-1999	NONE	