

EUROPEAN PATENT APPLICATION

Application number: 89120682.3

Int. Cl.⁵: **B05D 3/00, B05D 7/14,
B05D 7/16, B05B 13/00,
B05B 13/02**

Date of filing: 22.09.87

Priority: 25.09.86 JP 226458/86
 26.03.87 JP 70388/87
 26.03.87 JP 70389/87
 30.04.87 JP 104426/87
 30.04.87 JP 104427/87

Date of publication of application:
 28.03.90 Bulletin 90/13

Publication number of the earlier application in
 accordance with Art.76 EPC: 0 261 644

Designated Contracting States:
 DE FR GB

Date of deferred publication of the search report:
 05.12.90 Bulletin 90/49

Applicant: Mazda Motor Corporation
 No. 3-1, Shinchi Fuchu-cho
 Aki-gun Hiroshima-ken(JP)

Inventor: Matsui, Masataka
 Mazda Motor Corp. No. 3-1 Shinchi

Fuchu-cho
 Aki-gun Hiroshima-ken(JP)
 Inventor: Aono, Toshiaki
 Mazda Motor Corp. No. 3-1 Shinchi
 Fuchu-cho
 Aki-gun Hiroshima-ken(JP)
 Inventor: Tanimoto, Yoshio
 Mazda Motor Corp. No. 3-1 Shinchi
 Fuchu-cho
 Aki-gun Hiroshima-ken(JP)
 Inventor: Nakahama, Tadamitsu
 Mazda Motor Corp. No. 3-1 Shinchi
 Fuchu-cho
 Aki-gun Hiroshima-ken(JP)
 Inventor: Yamane, Takakazu
 Mazda Motor Corp. No. 3-1 Shinchi
 Fuchu-cho
 Aki-gun Hiroshima-ken(JP)

Representative: LOUIS, PÖHLAU, LOHRENTZ &
 SEGETH
 Ferdinand-Maria-Strasse 12
 D-8130 Starnberg(DE)

Coating method in coating line and coating apparatus therefor.

EP 0 360 301 A3
 (57) The coating method contains a spraying step in which a paint is sprayed at least on a coating substrate extending in an upward and downward direction to a film thickness thicker than causing sags of the sprayed paint. The coating substrate on which the paint is sprayed is rotated about the horizontal axis while the sprayed paint is dried until it does not sag any more.

The coating apparatus includes a carriage conveying the coating substrate arranged to run along the conveying direction, and the carriage is provided with a supporting base for supporting the coating substrate rotatively about the horizontal axis. One embodiment for rotating the substrate supported by

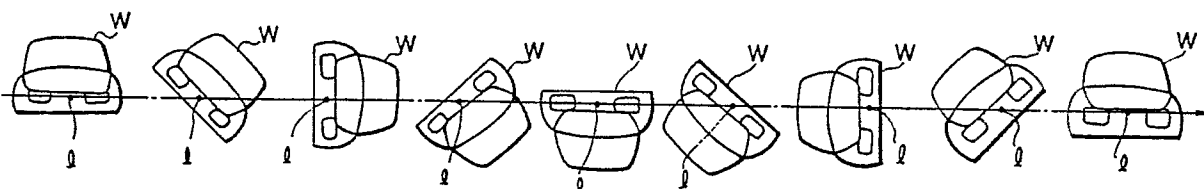
the supporting base is a spring that is disposed on the carriage to rotate the substrate by means of a restoring force produced by the spring. On the passage for conveying the carriage is disposed a force storing mechanism for storing the restoring force in the spring that released the restoring force.

Another embodiment therefor is a combination of a chain disposed along the conveying passage for the carriage with a sprocket disposed on the carriage. The sprocket is engageable with the chain and operatively coupled to the coating substrate. By disposing the chain in a fixed manner, on the one hand, the substrate is caused to rotate as the carriage is being conveyed. By dividing the chain, on the other,

the substrate is caused to rotate while the conveyance of the carriage is suspended.

FIG.2

(a) (b) (c) (d) (e) (f) (g) (h) (i)





DOCUMENTS CONSIDERED TO BE RELEVANT			EP 89120682.3
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.)
A	DE - A1 - 3 520 924 (TOYODA GOSEI CO LTD) * Claims * --	1, 27	B 05 D 3/00 B 05 D 7/14 B 05 D 7/16 B 05 B 13/00 B 05 B 13/02
A	DE - A1 - 3 443 824 (KANSAI PAINT CO LTD) * Claims * --	1	
D, A	US - A - 4 092 953 (WAUGH) * Totality * --	1, 27	
D, A	EP - A2 - 0 195 510 (SPRAYMATIC COMPANY LTD) * Totality * --	1, 27	
D, A	US - A - 2 658 008 (WILLIAMS & PROUD FOWLER) * Totality * ----	1, 27	
			TECHNICAL FIELDS SEARCHED (Int. Cl.)
			B 05 D B 05 B
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 16-07-1990	Examiner SCHÜTZ
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 A : member of the same patent family, corresponding document	