

## Title (en)

Method and apparatus for decorating metal or plastic containers.

## Title (de)

Verfahren und Vorrichtung zum Dekorieren von Behältern aus Metall oder Kunststoff.

## Title (fr)

Procédé et dispositif pour la décoration des récipients en métal ou plastique.

## Publication

**EP 0209896 A2 19870128 (DE)**

## Application

**EP 86110123 A 19860723**

## Priority

DE 3526769 A 19850726

## Abstract (en)

1. A device for decorating containers made of metal, plastics, glass, cardboard or paper, also as composite material, which containers are limited at least partially as seen in cross-section by round or oval wall portions, by applying printed pictures, which extend at least over a part of the round or oval wall portions, to a rotating object, more particularly for all round printing of containers which are round or oval in cross-section, using a movable slide arrangement with nozzles directed on to the object according to the ink jet method with the aid of ink or pigmented paint jets, characterised by a retaining device (2, 2a) accommodating the containers (1) individually, said device engaging the containers outside their outer surfaces to be printed, by a drive device (4), for driving the containers (1) in the retaining device (2, 2a) in rotary manner about their longitudinal axis, by a slide arrangement (6), which is provided spaced from the container (1), which is located in the retaining device (2, 2a), and movable continuously or in steps in parallel with the longitudinal axis of the container, said arrangement (6) having the nozzles (10 to 13) which are directed on to the container (1), said nozzles producing the printed picture as a raster picture in accordance with the ink jet method with the aid of ink or pigmented paint jets by means of program-controlled application of individual coloured dots along parallel peripheral lines on the walls of the container (1) which is to be decorated, and by a sensor for measuring the spacing of the nozzles (10 to 13) from the container (1) in the direction of the jet and by a control and drive device for displacing the nozzles in a direction towards the container or away from it.

## Abstract (de)

Das Verfahren zum Dekorieren von Behältern (1) aus Metall oder Kunststoff sowie aus Glas, Pappe oder Papier auch als Verbundstoff mit wenigstens teilweise im Querschnitt runden oder rundovalen Wandungsabschnitten sieht das Auftragen von Druckbildern zumindest über einen Teil der runden oder rundovalen Wandungsabschnitte vor. Dabei wird das Druckbild nach der Ink-Jet-Methode mittels Tinten- oder pigmentierter Lackstrahlen durch programmgesteuertes Aufbringen einzelner Farbpunkte entlang paralleler Umfangslinien auf der zu bedruckenden Wandung als Rasterbild erzeugt. Zur Durchführung des Verfahrens dient eine Halteeinrichtung (2, 2a), welche außerhalb der zu bedruckenden Flächen an dem Behälter (1) angreift und eine die Behälter um ihre Längsachse rotierend antreibbare Antriebseinrichtung (4) in Verbindung mit einer die Behälter parallel zu ihrer Längsachse schrittweise oder kontinuierlich verfahrbaren Schlittenanordnung (6) mit einem Träger (9) und daran gehaltenen, auf den Behälter gerichteten Spritzdüsen.

## IPC 1-7

**B05B 13/02**

## IPC 8 full level

**B41M 1/28** (2006.01); **B05B 13/02** (2006.01); **B05B 13/04** (2006.01); **B41F 17/00** (2006.01); **B41J 2/005** (2006.01); **B41J 2/01** (2006.01); **B41J 3/407** (2006.01); **B41J 3/413** (2006.01); **B41M 1/30** (2006.01); **B41M 1/40** (2006.01); **B41M 5/00** (2006.01); **B65B 61/26** (2006.01)

## CPC (source: EP US)

**B05B 13/0442** (2013.01 - EP US); **B41J 2/01** (2013.01 - EP); **B41J 3/4073** (2013.01 - EP US); **B41J 3/40733** (2020.08 - EP US); **B41J 3/413** (2013.01 - EP); **B41M 5/0088** (2013.01 - EP); **B65B 61/26** (2013.01 - EP)

## Cited by

DE102011009393A1; DE102009058222B4; DE102011009391A1; WO2011154628A1; EP1839893A1; CN106470843A; EP1110740A4; FR2961127A1; FR2870478A1; EP1225053A3; EP0761438A3; EP0494363A3; EP2644392A3; DE102006034060A1; DE102006034060B4; GB2376920A; EP1038782A1; US6578476B2; EP1853427A4; EP2657040A3; CN104441985A; EP1806233A1; DE102006001223A1; EP0385624A1; US5029523A; AU619945B2; EP0240651A1; US4842887A; AU587890B2; EP2703305A4; CN115739536A; US7910184B2; EP1636032A4; WO2004009360A1; WO2011072763A1; EP2479036A1; DE102011009395A1; US7467847B2; US9272815B2; US8201904B2; US8522989B2; US9259952B2; WO2009018892A1; WO2009018893A1; WO202070270A1; WO9908935A1; WO2008019829A1; WO2008116068A1; US9090091B2; US9421760B2; US8141970B2; EP2479037A1; US8256854B2; US10166781B2; US9221275B2; WO0056609A1; WO03002349A3; US9770922B2; US10596839B2; US11198306B2; WO2004016438A1; US7700158B2; US9132664B2; US11279146B2; US11498343B2; US11745517B2; EP2479037B2

## Designated contracting state (EPC)

AT BE CH DE FR GB IT LI LU NL SE

## DOCDB simple family (publication)

**EP 0209896 A2 19870128**; **EP 0209896 A3 19870722**; **EP 0209896 B1 19900207**; AT E50167 T1 19900215; CA 1277176 C 19901204; DE 3526769 A1 19870129; DE 3668799 D1 19900315; DK 330286 A 19870127; DK 330286 D0 19860711; ES 2000753 A6 19880316; JP S6227170 A 19870205

## DOCDB simple family (application)

**EP 86110123 A 19860723**; AT 86110123 T 19860723; CA 514255 A 19860721; DE 3526769 A 19850726; DE 3668799 T 19860723; DK 330286 A 19860711; ES 8600587 A 19860724; JP 16824786 A 19860718