

Title (en)  
LIQUID CARTRIDGE

Title (de)  
FLÜSSIGKEITSKARTUSCHE

Title (fr)  
CARTOUCHE DE LIQUIDE

Publication  
**EP 3702162 A1 20200902 (EN)**

Application  
**EP 20169427 A 20150701**

Priority  

- EP 20169427 A 20150701
- EP 18201929 A 20150701
- EP 15174873 A 20150701

Abstract (en)  
A liquid cartridge (30), comprising a front surface (140), an upper surface (39,141) facing an upward direction (54) when the liquid cartridge (30) is installed in a liquid consuming apparatus, a liquid outlet portion (34) facing a first direction (51) at the front surface(140), a circuit board (64) disposed on the upper surface (39,141) and a liquid detection portion (60) for detecting a state of liquid stored in the liquid cartridge (30), wherein the liquid detection portion (60) comprises a light access portion (62) configured to be accessed with light traveling from a first point toward a second point, wherein the light access portion (62) is disposed above the circuit board (64) in the upward direction (54). The liquid detection portion (60) may further comprise a light attenuating portion configured to totally reflect the light to attenuate the light, and to change a state of the light passing through the light access portion (62) depending on whether or not an amount of the liquid stored in the liquid cartridge (30) is less than a particular amount.

IPC 8 full level  
**B41J 2/175** (2006.01)

CPC (source: EP)  
**B41J 2/17513** (2013.01); **B41J 2/1752** (2013.01); **B41J 2/17523** (2013.01); **B41J 2/17553** (2013.01); **B41J 2/17566** (2013.01);  
**B41J 2002/17573** (2013.01); **B41J 2002/17576** (2013.01)

Citation (applicant)  

- JP 2014019130 A 20140203 - SEIKO EPSON CORP
- JP 2013049165 A 20130314 - BROTHER IND LTD
- JP 2005313447 A 20051110 - SEIKO EPSON CORP

Citation (search report)  

- [A] US 2011234658 A1 20110929 - NOZAWA IZUMI [JP]
- [A] EP 2607082 A1 20130626 - BROTHER IND LTD [JP]
- [A] JP 2010023458 A 20100204 - CANON KK

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**EP 3112164 A1 20170104**; **EP 3112164 B1 20181024**; EP 3453534 A1 20190313; EP 3453534 B1 20200415; EP 3702162 A1 20200902;  
EP 3702162 B1 20211124; EP 3978255 A1 20220406; EP 3978255 B1 20240529; ES 2693527 T3 20181212; ES 2787036 T3 20201014;  
ES 2900591 T3 20220317; PL 3112164 T3 20190731

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