

Title (en)  
RETRACTABLE BALLPOINT PEN

Title (de)  
EINZIEHBARER KUGELSCHREIBER

Title (fr)  
STYLO À BILLE RÉTRACTABLE

Publication  
**EP 2873533 A4 20160511 (EN)**

Application  
**EP 13809309 A 20130627**

Priority  
• JP 2012145204 A 20120628  
• JP 2012145205 A 20120628  
• JP 2013067613 W 20130627

Abstract (en)  
[origin: EP2873533A1] Provided is a thermochromic retractable ballpoint pen including a friction body at a rear end of a barrel for easy thermochromicity only in a desired area. A retractable ballpoint pen is characterized by that the pen includes a friction body, at a rear end of the barrel, used for friction of handwriting in the thermochromic ink, enabling thermochromism of the handwriting in the thermochromic ink with frictional heat produced at that time, and having rubber-like elasticity, a maximum outer diameter of the rear end of the barrel is from 1.0 times to 1.5 times a maximum outer diameter of the friction body, a maximum width in a circumferential direction of the operating portion is less than the maximum outer diameter of the friction body, and an angle of a tangent to both the friction body and the operating portion from a writing surface is 60 degrees or more when the friction body is downward and an axial line of the barrel is in a vertical state relative to the writing surface.

IPC 8 full level  
**B43K 29/02** (2006.01); **B43K 7/12** (2006.01); **B43K 24/04** (2006.01)

CPC (source: CN EP)  
**B43K 1/086** (2013.01 - CN EP); **B43K 7/005** (2013.01 - CN EP); **B43K 7/12** (2013.01 - CN EP); **B43K 24/04** (2013.01 - EP); **B43K 24/082** (2013.01 - CN); **B43K 29/00** (2013.01 - CN); **B43K 29/02** (2013.01 - CN EP); **B43K 29/18** (2013.01 - CN)

Citation (search report)  
• [XII] EP 2130684 A1 20091209 - PILOT INK CO LTD [JP]  
• [XYI] CA 2788724 A1 20110811 - PILOT INK CO LTD [JP]  
• [YD] JP 2012091470 A 20120517 - PILOT INK CO LTD  
• [A] US 2006216103 A1 20060928 - BIELECKI ANDREW [US], et al  
• See references of WO 2014003101A1

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 2873533 A1 20150520**; **EP 2873533 A4 20160511**; **EP 2873533 B1 20200902**; CN 104349908 A 20150211; CN 104349908 B 20160817; CN 106142914 A 20161123; CN 106142914 B 20181109; TW 201420373 A 20140601; TW I601647 B 20171011; WO 2014003101 A1 20140103

DOCDB simple family (application)  
**EP 13809309 A 20130627**; CN 201380030684 A 20130627; CN 201610659824 A 20130627; JP 2013067613 W 20130627; TW 102123142 A 20130628