

Title (en)  
PEN-SHAPED HANDHELD INSTRUMENT

Title (de)  
STIFTFÖRMIGES HANDWERKZEUG

Title (fr)  
OUTIL À MAIN EN FORME DE CRAYON

Publication  
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Application  
**EP 14700442 A 20140106**

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Abstract (en)  
[origin: WO2014106655A1] The invention relates to a pen-shaped handheld instrument (1) for processing a substratum (4, 5), in particular a sheet of paper, comprising at least one pen tip (3), a shaft (17), and at least one optical sensor (2), by means of which at least one detection region (13) of the substratum (4, 5) and/or of a surrounding region (20) of the substratum (4, 5) can be optically detected, wherein the pen tip (3) is in contact with the substratum (4, 5) in a working position of the handheld instrument (1). According to the invention, in order to produce a handheld instrument by means of which a change of the substratum can be registered without the user of the handheld instrument being dependent on a special substratum or other aids except for the handheld instrument itself, the at least one optical sensor (2) detects an image angle (a) of at least 90°, preferably at least 100°, more preferably at least 110°. The invention further relates to an associated method for digitizing an impression produced by hand.

IPC 8 full level  
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Citation (search report)  
See references of WO 2014106655A1

Citation (examination)  
• KOICHI KISE ET AL: "A Proposal of Writing-Life Log and Its Implementation Using a Retrieval-Based Camera-Pen", 16TH INTERNATIONAL GRAPHONOMICS SOCIETY CONFERENCE, 10 June 2013 (2013-06-10), XP055111879, Retrieved from the Internet <URL:http://www.m.cs.osakafu-u.ac.jp/publication\_data/1356/IGS.pdf> [retrieved on 20140403]  
• S ÍÍÍÍÍ UCHIDA ET AL: "On a Possibility of Pen-Tip Camera for the Reconstruction of Handwritings", 25 July 2009 (2009-07-25), XP055290034, Retrieved from the Internet <URL:http://human.ait.kyushu-u.ac.jp/publications/CBDAR2009-itou.pdf> [retrieved on 20160720]  
• KURUPPU K A S KURUPPU ET AL: "Handwriting Reconstruction with a Camera Attached to a Pen -ArTee Scibber", INTERNATIONAL JOURNAL OF CONCEPTIONS ON COMPUTING AND INFORMATION TECHNOLOGY, 1 January 2016 (2016-01-01), pages 2345 - 9808, XP055290032, Retrieved from the Internet <URL:http://www.worldairco.org/IJCCIT/January2016Paper150.pdf> [retrieved on 20160720]

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