

Title (en)

A CIRCUIT AND METHOD FOR DETECTING FAILING NOZZLES IN AN EJECTION UNIT

Title (de)

SCHALTUNG UND VERFAHREN ZUR DETEKTION VON AUSFALLENDEN DÜSEN IN EINER AUSSTOSSEINHEIT

Title (fr)

CIRCUIT ET PROCÉDÉ DE DÉTECTION DE BUSES DÉFAILLANTES DANS UNE UNITÉ D'ÉJECTION

Publication

**EP 3815903 A1 20210505 (EN)**

Application

**EP 19206676 A 20191031**

Priority

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Abstract (en)

The invention relates to a method for detecting failing nozzles in an ejection unit during the printing of an object of a print job, wherein the ejection unit is arranged to eject droplets of a liquid and comprises a plurality of nozzles, a plurality of liquid ducts each connected to one of the plurality of nozzles, and a plurality of electro-mechanical transducers arranged to create an acoustic pressure wave in the liquid in the plurality of ducts. The method comprises a first step of dividing the plurality of nozzles into a first group of nozzles and a second group of nozzles. The method also comprises actuating the plurality of electro-mechanical transducer to generate a pressure wave in the liquid in the plurality of ducts of the at least first group of nozzles and second group of nozzles. Then, it is possible to sense a residual pressure wave in the liquid in the plurality of ducts of the at least first group of nozzles and second group of nozzles. Then, it is possible to determine whether one or more nozzles of the at least first group of nozzles and second group of nozzles are in a malfunctioning state. The method also comprises dividing the at least first group of nozzles and second group of nozzles into additional groups of nozzles if it is previously determined that one or more nozzles of the at least first group of nozzles and second group of nozzles are in a malfunctioning state, or classifying the plurality of nozzles in the first group of nozzles and the plurality of nozzles in the second group of nozzles in a correctly functioning state if it is previously determined that all of the nozzles of the at least first group of nozzles and second group of nozzles are in a correctly functioning state. Finally, the method repeats all of the previous stepson the additional groups of nozzles until all the nozzles of the plurality of nozzles have been classified in a correctly functioning state or in a malfunctioning state.

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- [X] EP 2489515 A1 20120822 - SEIKO EPSON CORP [JP]
- [A] US 6752483 B1 20040622 - VEGA RAMON [ES], et al
- [A] US 8939542 B2 20150127 - GOVYADINOV ALEXANDER [US], et al

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

Designated extension state (EPC)

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