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The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Andres Ibanez

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE



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(12) **United States Patent**
Schmidt

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(54) **DEVICE FOR MIXING AND METERING AT LEAST TWO GASES**

(58) **Field of Classification Search**
CPC Y10T 137/2567; Y10T 137/87161; Y10T 137/87692; B01F 15/0429; F16K 11/0655; G05D 11/03

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(Continued)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 139 days.

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(21) Appl. No.: **15/977,909**

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Related U.S. Application Data

(63) Continuation of application No. PCT/DE2016/000373, filed on Oct. 15, 2016.

(57) **ABSTRACT**

A device for mixing and metering of at least two gases, comprising two bodies that can be displaced relative to each other, wherein margins of the bodies are in contact with one another and between these margins at least two rectangular openings for one gas each can be formed, wherein a displacement of the bodies relative to each other automatically causes an increase of one opening and a decrease of the other opening, wherein the resulting total cross-section of the openings remains constantly the same here. Moreover, the device comprises a control element which is arranged adjacent to the two bodies and in contact therewith, wherein the control element can be translationally displaced in a continuous manner between a closed position and an open position in order to close or to open the openings.

(30) **Foreign Application Priority Data**

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B01F 15/04 (2006.01)
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CPC **B01F 15/0429** (2013.01); **B01F 3/02** (2013.01); **F16K 11/0655** (2013.01);
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15 Claims, 14 Drawing Sheets

