US 20220407517A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0407517 A1**

ROZIERE et al. (43) **Pub. Date: Dec. 22, 2022**

(54) **PROXIMITY AND PRESSURE DETECTION DEVICE, DETECTION LAYER AND ITEM OF EQUIPMENT EQUIPPED WITH SUCH DEVICES**

(71) Applicant: **FOGALE NANOTECH**, Nîmes (FR)

(72) Inventors: **Didier ROZIERE**, Nîmes (FR); **Christian NEEL**, Nîmes (FR)

(21) Appl. No.: **17/756,091**

(22) PCT Filed: **Oct. 19, 2020**

(86) PCT No.: **PCT/EP2020/079304**

§ 371 (c)(1),
(2) Date: **May 17, 2022**

(30) **Foreign Application Priority Data**

Nov. 19, 2019 (FR) 1912876

Publication Classification

(51) **Int. Cl.**

H03K 17/96	(2006.01)
G01D 5/16	(2006.01)
G01D 5/24	(2006.01)
G01L 1/18	(2006.01)
G01L 1/14	(2006.01)

(52) **U.S. Cl.**

CPC ***H03K 17/962*** (2013.01); ***G01D 5/16*** (2013.01); ***G01D 5/2405*** (2013.01); ***G01L 1/18*** (2013.01); ***G01L 1/14*** (2013.01); ***H03K 17/964*** (2013.01); *H03K 2217/9651* (2013.01)

(57) **ABSTRACT**

A device for detecting an object, with respect to a detection surface, including at least one measuring electrode, at least one emission electrode coupled to the measuring electrode by a piezoresistive layer, and measurement electronics, configured so as to bias the electrodes at the same alternating potential and perform a measurement, called capacitive measurement, of a first measured signal (Vs) relating to the capacitance (Coe), called object-electrode capacitance, seen by the at least one measuring electrode; apply a potential difference between the electrodes and measure a second signal relating to the resistance (Rie) between the electrodes. Also, a detection layer includes such a detection device as well as an item of equipment equipped with such a detection layer.