US 20220407520A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0407520 A1**

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

(54) **TERNARY LOGIC CIRCUIT**

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(21) Appl. No.: **17/673,772**

(22) Filed: **Feb. 16, 2022**

(30) **Foreign Application Priority Data**

Jun. 22, 2021 (KR) 10-2021-0081048

Publication Classification

(51) **Int. Cl.**
H03K 19/08 (2006.01)

(52) **U.S. Cl.**
CPC ***H03K 19/08*** (2013.01); *H03K 19/20* (2013.01)

(57) **ABSTRACT**

A ternary logic circuit includes: a first inverter unit; a second inverter unit arranged in parallel with the first inverter unit; a first junction unit arranged between the first inverter unit and an output terminal and including a tunnel PN junction; and a second junction unit arranged between the second inverter unit and the output terminal and including a tunnel PN junction, wherein, when an absolute value of an input voltage applied to an input terminal is less than a first input voltage, the output terminal outputs a first output voltage, and when the absolute value of the input voltage is greater than the first input voltage and less than a second input voltage, the output terminal outputs a second output voltage, and when the absolute value of the input terminal is greater than the second input voltage, the output terminal outputs a third output voltage.