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KUMAR et al.(10) **Pub. No.: US 2022/0416768 A1**(43) **Pub. Date: Dec. 29, 2022**(54) **SCHMITT TRIGGER WITH CURRENT ASSISTANCE CIRCUIT****Publication Classification**(51) **Int. Cl.****H03K 3/012** (2006.01)**H03K 3/3565** (2006.01)(52) **U.S. Cl.****CPC** **H03K 3/012** (2013.01); **H03K 3/3565** (2013.01)(71) Applicant: **STMicroelectronics International N.V.**, Geneva (CH)(72) Inventors: **Kailash KUMAR**, Hazaribagh (IN);
Manoj KUMAR, Greater Noida (IN)(73) Assignee: **STMicroelectronics International N.V.**, Geneva (CH)(21) Appl. No.: **17/843,780**(22) Filed: **Jun. 17, 2022****Related U.S. Application Data**

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(57)

ABSTRACT

An integrated circuit includes an input pad and a Schmitt trigger coupled to the input pad. The Schmitt trigger includes a main PMOS branch that charges an intermediate node of the Schmitt trigger responsive to voltage transitions at the input node. The Schmitt trigger includes a charging assistance circuit that helps to rapidly charge the intermediate node of the Schmitt trigger. The charging assistance circuit includes a parallel PMOS branch in parallel with the main PMOS branch.

