



US 20240178655A1

(19) **United States**

(12) **Patent Application Publication**  
**STORBACKA et al.**

(10) **Pub. No.: US 2024/0178655 A1**

(43) **Pub. Date: May 30, 2024**

(54) **A PROTECTION ARRANGEMENT FOR A TWO-STROKE INTERNAL COMBUSTION ENGINE PROVIDING POWER TO A GENERATOR**

**Publication Classification**

(51) **Int. Cl.**  
**H02H 7/06**

(2006.01)

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

CPC ..... **H02H 7/067** (2013.01)

(71) Applicant: **WE TECH SOLUTIONS OY**, Vaasa (FI)

(72) Inventors: **Mårten STORBACKA**, Vaasa (FI);  
**Timo ALHO**, Vaasa (FI)

(21) Appl. No.: **18/282,646**

(22) PCT Filed: **Mar. 17, 2022**

(86) PCT No.: **PCT/FI2022/050170**

§ 371 (c)(1),

(2) Date: **Sep. 18, 2023**

(30) **Foreign Application Priority Data**

Mar. 18, 2021 (EP) ..... 21163484.5

**ABSTRACT**

An inventive protection arrangement is for a two-stroke internal combustion engine providing power to a generator having output lines with circuit breakers. The protection arrangement comprises a heat resistor bank and a circuit breaker for each output line. The circuit breaker is connected to the output line in a parallel manner with the circuit breaker of the same output line, and the resistor bank is connectable to the each output line via the circuit breaker of the output line. The protection arrangement further comprises a control unit having connections to the circuit breakers and the circuit breakers, in order to monitor the circuit breakers and to control the circuit breakers. In case the circuit breaker of at least one output line is tripped open, the control unit is arranged to control the circuit breakers of the output lines to connect the heat resistor bank to output lines.

