



US 20240215129A1

(19) **United States**

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

(10) **Pub. No.: US 2024/0215129 A1**

(43) **Pub. Date: Jun. 27, 2024**

(54) **DEVICE FOR GENERATING A CURRENT DRIVER VOLTAGE, AND LASER SYSTEM**

(71) Applicant: **TRUMPF Laser GmbH**, Schramberg (DE)

(72) Inventors: **Oliver Krumm**, Villingen-Schwenningen (DE); **Thomas Kaiser**, Oberwolfach (DE); **Arno Jakubaschk**, Schramberg (DE); **Thomas Notheis**, Schramberg (DE)

(21) Appl. No.: **18/596,688**

(22) Filed: **Mar. 6, 2024**

**Related U.S. Application Data**

(63) Continuation of application No. PCT/EP2022/073800, filed on Aug. 26, 2022.

**Foreign Application Priority Data**

Sep. 10, 2021 (DE) ..... 10 2021 123 547.2

**Publication Classification**

(51) **Int. Cl.**  
**H05B 45/3725** (2006.01)  
**H01S 5/026** (2006.01)  
**H01S 5/042** (2006.01)  
(52) **U.S. Cl.**  
CPC ..... **H05B 45/3725** (2020.01); **H01S 5/0262** (2013.01); **H01S 5/042** (2013.01)

**ABSTRACT**

A device for generating a current driver voltage for a current driver of a pump diode is provided. The pump diode is configured for pumping a fibre laser. The device includes a voltage source for generating the current driver voltage. The voltage source includes a primary side and a secondary side. The secondary side is electrically isolated from the primary side. The primary side includes primary circuit breakers. The secondary side includes an accumulator for electrical charge. The voltage source is configured to generate the current driver voltage at the accumulator by switching the primary circuit breakers. The device further includes a discharge circuit configured to receive a discharge trigger voltage and to discharge the accumulator when the discharge trigger voltage assumes a predetermined value or a value range.

