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(19) **United States**(12) **Patent Application Publication**  
**Hansen**(10) **Pub. No.: US 2022/0352708 A1**(43) **Pub. Date: Nov. 3, 2022**(54) **SOFT STARTER FOR HIGH-CURRENT  
ELECTRIC DEVICES***H02H 1/00* (2006.01)*G01R 15/20* (2006.01)*H01C 7/00* (2006.01)(71) Applicant: **Raymond Innovations, LLC**, Rapid  
City, SD (US)(52) **U.S. Cl.**CPC ..... *H02H 9/02* (2013.01); *H05K 1/181*(2013.01); *H02H 1/0007* (2013.01); *G01R**15/202* (2013.01); *H01C 7/008* (2013.01);*H05K 2201/10022* (2013.01); *H05K**2201/10151* (2013.01)(72) Inventor: **Will Hansen**, Rapid City, SD (US)(73) Assignee: **Raymond Innovations, LLC**, Rapid  
City, SD (US)(21) Appl. No.: **17/863,166**

(57)

**ABSTRACT**(22) Filed: **Jul. 12, 2022****Related U.S. Application Data**(63) Continuation of application No. 16/802,414, filed on  
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26, 2019.**Publication Classification**(51) **Int. Cl.***H02H 9/02* (2006.01)*H05K 1/18* (2006.01)

An inrush current limiting circuit in aspects of the present disclosure may have one or more of the following features: a printed circuit board, an electrical input disposed on the circuit board, one or more electrical outputs disposed on the circuit board, a current limiting circuit connected between the electrical input and the one or more electrical outputs, at least one microcontroller connected within the current limiting circuit, at least one current sensor connected within the current limiting circuit, one or more current limiting components within the current limiting circuit for increasing voltage and current over time from the electrical input to the one or more electrical outputs by operation of the current sensor and the microcontroller.

