



US 20220361296A1

(19) **United States**(12) **Patent Application Publication**
BHATNAGAR et al.(10) **Pub. No.: US 2022/0361296 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **METAL HEATER ASSEMBLY WITH
EMBEDDED RESISTIVE HEATERS****Publication Classification**(51) **Int. Cl.***H05B 3/12* (2006.01)*H05B 3/06* (2006.01)*H05B 3/56* (2006.01)*H05B 1/02* (2006.01)(52) **U.S. Cl.**CPC *H05B 3/12* (2013.01); *H05B 3/06*(2013.01); *H05B 3/56* (2013.01); *H05B 1/023*

(2013.01)

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Company, St. Louis, MO (US)**(21) Appl. No.: **17/736,185**(22) Filed: **May 4, 2022****Related U.S. Application Data**(60) Provisional application No. 63/183,932, filed on May
4, 2021.

(57)

ABSTRACT

A metal heater includes a metal substrate with a groove, a resistive heater disposed within the groove, and a fill metal disposed over the resistive heater and substantially filling the groove, wherein the fill metal has a lower melting temperature than the metal substrate. The fill metal can be indium and a cover plate can be bonded to the metal substrate and over the indium. A method of manufacturing the metal heater and a method of operating the metal heater are also provided.

