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(19) **United States**(12) **Patent Application Publication**
Oberdieck et al.(10) **Pub. No.: US 2023/0231400 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **METHOD AND DEVICE FOR REDUCING
VOLTAGE LOADS OF SEMICONDUCTOR
COMPONENTS OF AN INVERTER**(52) **U.S. Cl.**CPC **H02J 7/0068** (2013.01); **H02P 27/06**
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ABSTRACT

A method and device for reducing voltage loads of semiconductor components of an inverter. The method includes: ascertaining a request to charge a battery of an electric system including the battery, the inverter, and an electric machine. The inverter including a series connection including a first and a second semiconductor component, and being configured to convert a direct voltage provided by the battery into an alternating voltage for the electric machine, and adapt a gate voltage of the first semiconductor component and/or of the second semiconductor component to interrupt a current flow between the battery and the electric machine during the charging. A voltage load of a gate oxide layer of the semiconductor components is reduced by decreasing the gate voltages of the first semiconductor component and of the second semiconductor component and/or a voltage load of a drain-source path of the semiconductor components being matched to one another.

