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(19) **United States**(12) **Patent Application Publication**
HSU et al.(10) **Pub. No.: US 2023/0232609 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **METHOD OF MANUFACTURING MEMORY DEVICE HAVING WORD LINE WITH IMPROVED ADHESION BETWEEN WORK FUNCTION MEMBER AND CONDUCTIVE LAYER**(52) **U.S. Cl.**
CPC .. *H01L 27/10876* (2013.01); *H01L 27/10823* (2013.01)(57) **ABSTRACT**

The present application provides a method of manufacturing a memory device having a word line (WL) with improved adhesion between a work function member and a conductive layer. The method includes steps of providing a semiconductor substrate defined with an active area and including an isolation structure surrounding the active area; forming a recess extending into the semiconductor substrate and across the active area; forming a first insulating layer conformal to the recess; disposing a first conductive material conformal to the first insulating layer; forming a conductive member surrounded by the first conductive material; disposing a second conductive material over the conductive member and removing a portion of the first conductive material above the second conductive material to form a conductive layer enclosing the conductive member; and forming a second insulating layer over the conductive layer and conformal to the first insulating layer.

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WEI-TONG CHEN, NEW TAIPEI CITY (TW)(21) Appl. No.: **17/578,918**(22) Filed: **Jan. 19, 2022****Publication Classification**(51) **Int. Cl.**
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