



US 20240215268A1

(19) **United States**

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

(10) **Pub. No.: US 2024/0215268 A1**

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

(54) **SINGLE PLUG FLOW FOR A MEMORY DEVICE**

(71) Applicant: **Micron Technology, Inc.**, Boise, ID (US)

(72) Inventors: **Zhao Zhao**, Meridian, ID (US); **Trevor J. Plaisted**, Boise, ID (US); **Stephen W. Russell**, Boise, ID (US); **Farrell M. Good**, Meridian, ID (US); **Sangeetha P. Komanduri**, Boise, ID (US); **Sandra L. Tagg**, Boise, ID (US); **Nathan A. Wilkerson**, Boise, ID (US)

(21) Appl. No.: **18/391,122**

(22) Filed: **Dec. 20, 2023**

**Related U.S. Application Data**

(60) Provisional application No. 63/476,790, filed on Dec. 22, 2022.

**Publication Classification**

(51) **Int. Cl.**

**H10B 63/00** (2006.01)

**H10B 63/10** (2006.01)

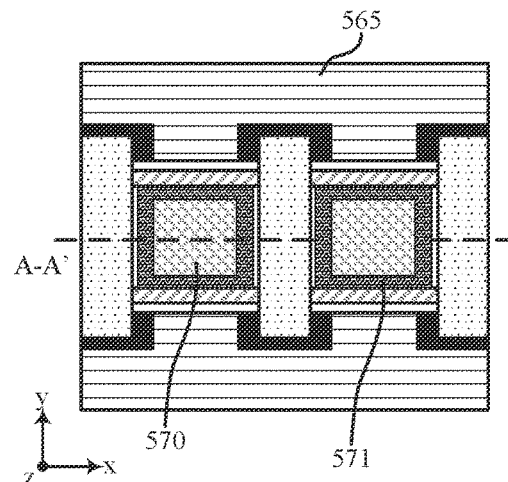
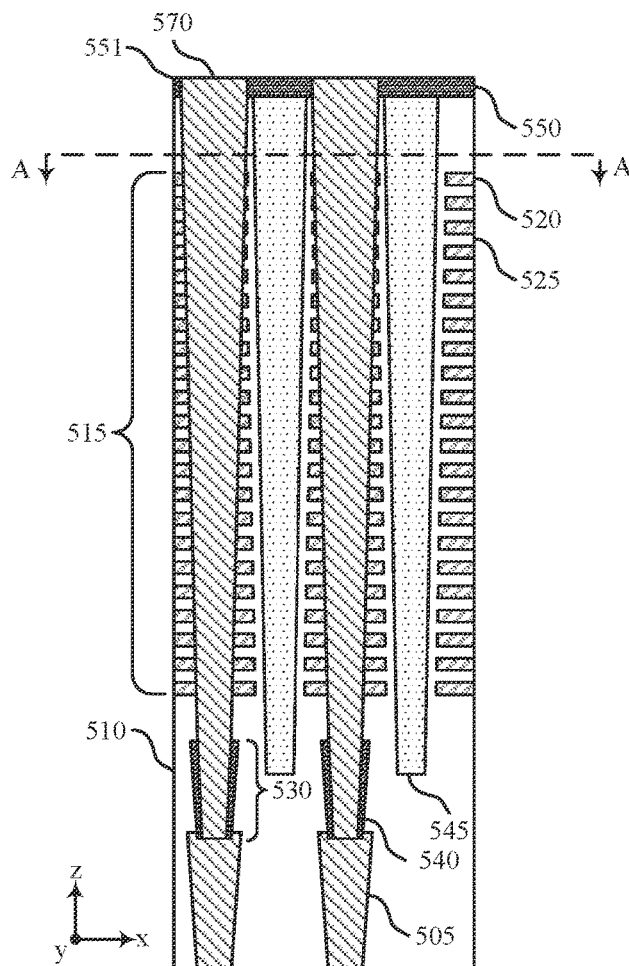
(52) **U.S. Cl.**

CPC ..... **H10B 63/845** (2023.02); **H10B 63/10** (2023.02)

(57)

**ABSTRACT**

Methods, systems, and devices for a single plug flow for a memory device are described. In some examples, the memory device may include one or more plugs formed above respective bit line plates. The plugs may include a liner and one or more sacrificial materials that are removed during a subsequent etching operation. Accordingly, pillars may be formed above the plugs, and may be generally aligned with the respective bit line plates.



500-h