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MUKAIYAMA et al.(10) **Pub. No.: US 2024/0213032 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **ETCHING METHOD AND PLASMA
PROCESSING APPARATUS**(71) Applicant: **Tokyo Electron Limited**, Tokyo (JP)(72) Inventors: **Koki MUKAIYAMA**, Miyagi (JP);
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ABSTRACT

An etching method includes (a) providing a substrate having an etching target film and a mask on the etching target film, on a substrate support within a chamber; (b) etching the etching target film to form a recess under a condition that a pressure within the chamber is controlled to a first pressure, and a temperature of the substrate support is controlled to a first temperature; and (c) forming a metal-containing film on a portion of a side wall of the recess by using plasma generated from a processing gas containing a metal-containing gas, under a condition that the pressure within the chamber is controlled to a second pressure higher than the first pressure, and the temperature of the substrate support is controlled to a second temperature equal to or less than the first temperature.

