



US005393374A

**United States Patent** [19]  
**Sato et al.**

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[45] **Date of Patent:** **Feb. 28, 1995**

- [54] **METHOD OF ASHING**
- [75] Inventors: **Junichi Sato, Tokyo; Shingo Kadomura, Kanagawa, both of Japan**
- [73] Assignee: **Sony Corporation, Japan**
- [21] Appl. No.: **111,919**
- [22] Filed: **Aug. 26, 1993**
- [30] **Foreign Application Priority Data**  
Aug. 31, 1992 [JP] Japan ..... 4-255790
- [51] **Int. Cl.<sup>6</sup>** ..... **H05H 1/00; H01L 21/00**
- [52] **U.S. Cl.** ..... **156/643; 156/646; 156/651; 156/668; 134/1**
- [58] **Field of Search** ..... **156/643, 646, 668, 651, 156/345; 134/1**
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[45] **ABSTRACT**

A method of ashing comprises the steps of cooling the work to a temperature of 0° C. or therebelow and causing ashing of a photo-resist on the work. An apparatus for ashing comprises a cooling ashing chamber, a heating ashing chamber, and a gate valve provided between the two chambers. The method and apparatus as noted solves prior art problems and permits photo-resist which has heretofore been difficult to remove to be removed as well and readily and with satisfactory productivity.

**5 Claims, 7 Drawing Sheets**

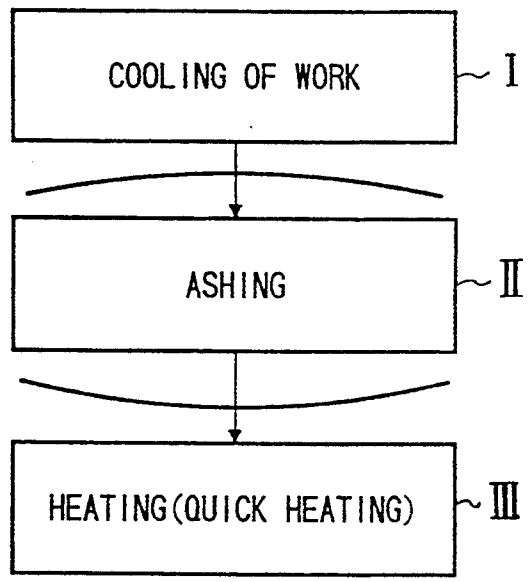


FIG.1

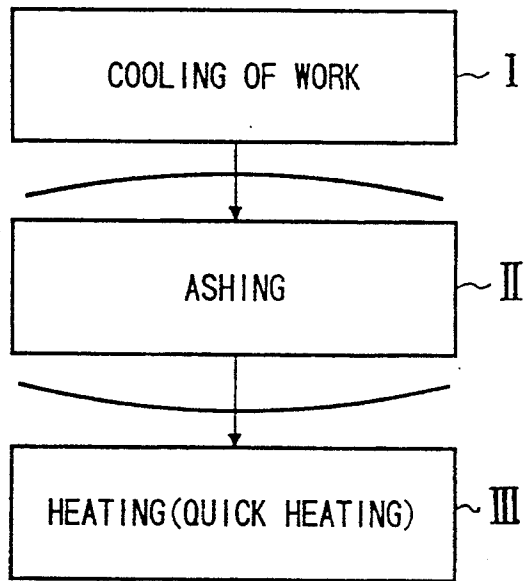


FIG.2A

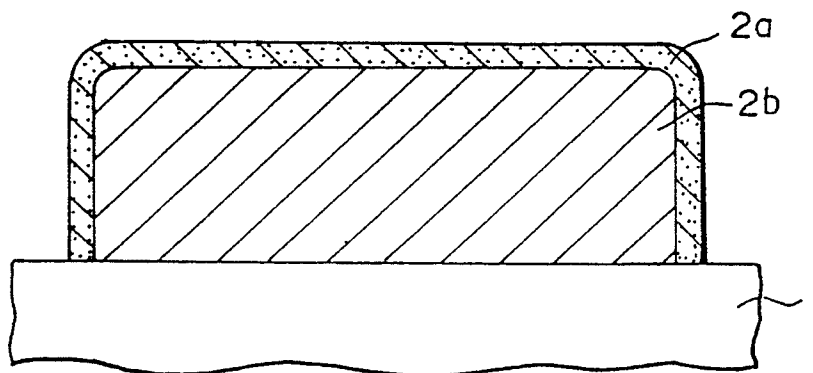


FIG.2B

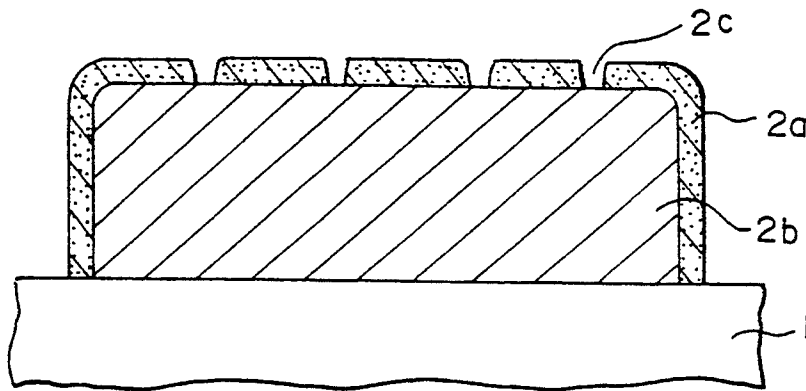


FIG.2C

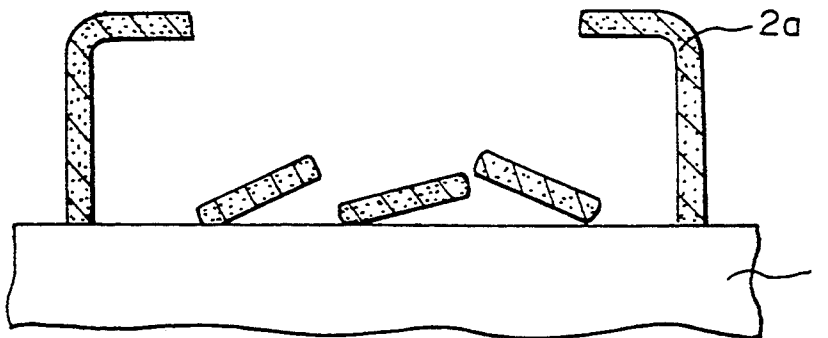


FIG.2D



FIG.3

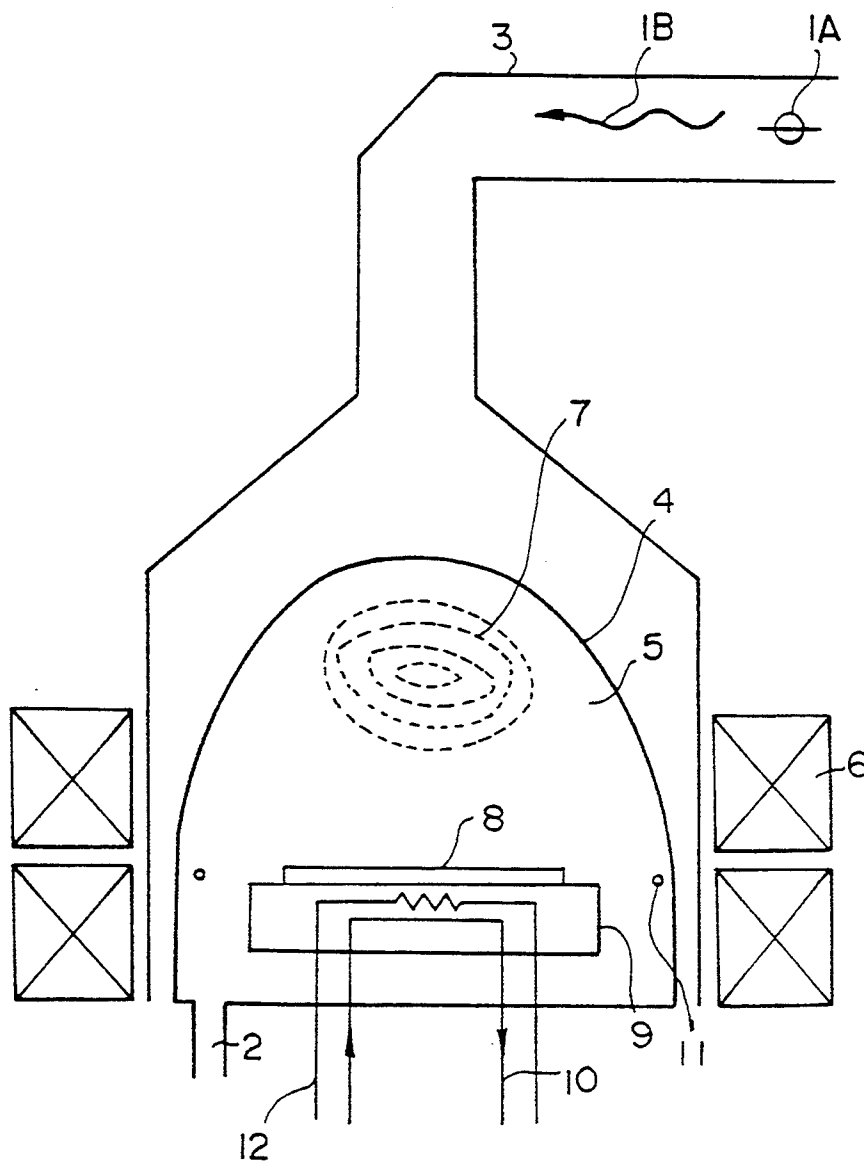
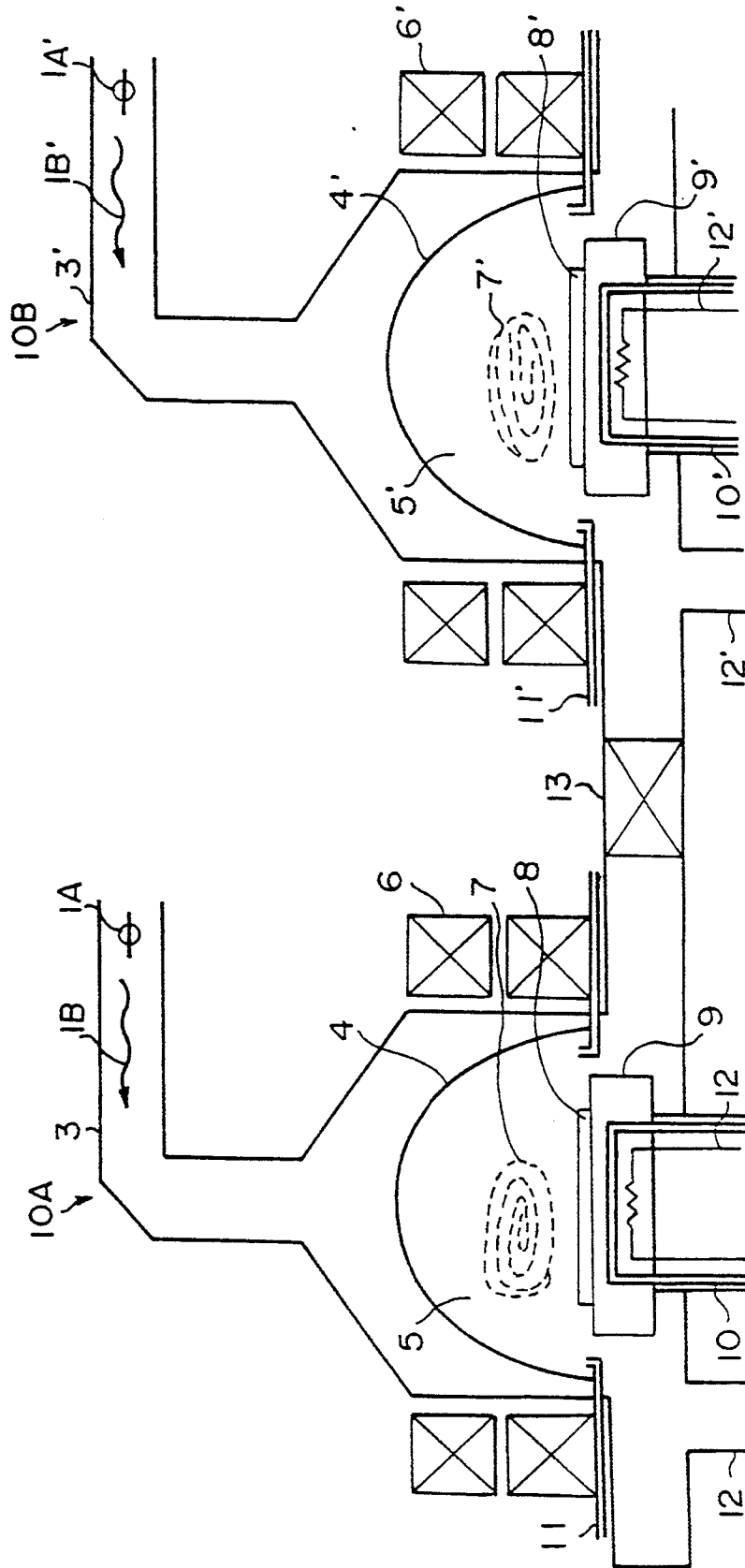


FIG.4



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