

## ABSTRACT

### **APPARATUS AND METHOD OF CONFIGURING THE AIR BEARING SURFACES OF SLIDERS IN DISK DRIVES FOR PRODUCING HIGH TEMPERATURES IN THERMALLY-ASSISTED RECORDINGS**

[0039] A hard disk drive slider has an air bearing surface that uses the ambient air in the disk drive as a heat source for thermal-assisted recording. Incoming air between the slider and the disk surface is pressurized to produce heat sufficient to heat the recording media. A very small thermal pad is located at the trailing end of the air bearing surface and wraps around the magnetic recording head. The thermal pad includes small pockets to contain the heated air to provide heat to the recording media. The air can be pressurized to approximately 80 atm, which is sufficient to raise the air temperature to approximately 800 degrees C at isentropic conditions. The heated air transfers the heat energy to the recording media by conduction to achieve a disk surface temperature of more than 200 degrees C. This is the recording layer temperature required for thermomagnetic recording.

Figure 1