

**DEVICE AND METHOD CAPABLE OF QUICKLY AND FAITHFULLY  
DETECTING A SURFACE ROUGHNESS**

**ABSTRACT**

A magnetoresistive element is used to detect a surface roughness of an object, such as a magnetic recording medium (11), a photomask blank, a semiconductor wafer, and is assembled into a reproducing head which moves along a surface of the object (11) and which can produce an electric signal related to the surface roughness. The reproducing head may be incorporated with a recording head into a head unit (13). The head unit (13) can monitor a magnetic characteristic of the magnetic recording medium in addition to detection of the surface roughness, by recording a predetermined signal by the recording head and by reproducing the predetermined signal by the reproducing head.

Figure 1.

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