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(54) **GPS DEVICE FOR MEASURING WAVE HEIGHT AND CURRENT DIRECTION AND SPEED AND GPS SYSTEM FOR MEASURING WAVE HEIGHT AND CURRENT DIRECTION AND SPEED**

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(57) **ABSTRACT**

The present invention provides a GPS device for measuring the wave height and current direction and speed, which is capable of accurately measuring the wave height (height of the waves) and current direction and speed (tidal current) in any point on the sea, ocean, lake, or marsh, and to a system using such a device. The GPS receiver **2** of the GPS device **1** for measuring the wave height and current direction and speed processes the GPS signals received with the GPS antenna **3** and measures the three-dimensional position of antenna **3**. The three-dimensional position data are recorded by the data recording unit **4** connected to the GPS receiver **2**. When the floating body **5** having those devices **2-4** installed thereon floats on the sea or ocean, it moves together with the waves and tidal current in the present location. The software **7** for conducting high-pass filter processing and smoothing processing is installed in the data processing unit **6**, and the data on the wave height and current direction and speed are output, while the errors are being removed from the three-dimensional position data recorded in the data recording unit **4**.

9 Claims, 2 Drawing Sheets

