

FOREIGN SUBSTANCE REMOVAL APPARATUS AND OPTICAL APPARATUS
INCLUDING THE SAME

ABSTRACT OF THE DISCLOSURE

A foreign substance removal apparatus detects how large difference is generated between a time phase of a vibration detected when a bending vibration of an m -order vibration mode is excited at an optical low-pass filter 410, and a time phase of a vibration detected when a bending vibration of an $(m+1)$ -order vibration mode is excited at the optical low-pass filter 410. Then, the foreign substance removal apparatus calculates main driving parameters for use in a main driving operation based on the detected time phase difference.

Figure 9