## ABSTRACT

The present invention has an object to perform phase synchronization pull-in at high speed and with good stability.

A predetermined frequency band of a reproduced signal is emphasized by a waveform equalization means 1. Its output signal is sampled by an A/D converter 2 using a reproduction clock. Low-band noises of a sampled signal are suppressed by a low-band noise suppression means 3. Then, cycle information is detected from a specific pattern length or pattern interval using a cycle detection means with high precision and high efficiency. The obtained cycle information is converted into a frequency error by a frequency error detector 9. On the other hand, a phase error is detected by a phase error detector 10 from the output of the low-band noise suppression means 3. The frequency error and the phase error are passed through loop filters and thereafter added, whereby an oscillator 15 which generates a reproduction clock is controlled. In the so-constructed frequency control and phase lock circuit, not only the system of the clock can be unified, but also the high-speed and stable frequency pull-in and phase synchronization pull-in can be realized also in a state where the linear velocity varies.