A simple horizontal pendulum. When the ground moves to the right, the mass will swing to the left and the ground motion will be recorded on the paper, which moves down. The mass can swing in all directions and must be suspended on a very long string in order to be able to record low frequencies. In order to avoid this, a ‘garden gate’ or inverted pendulum is used (see next figures).

Inverted pendulum. The mass can swing in all horizontal directions. This is the principle of the Wiechert seismograph used in Bergen from 1921 to 1968, see figure below.

The Wiechert seismograph. The mass horizontal motion is captured by two arms that, by using a system of levers, can amplify the motion and record it on two rotating drums (R). The seismograph can record horizontal motions in East-West and North-South directions at the same time.