WHAT IS CLAIMED IS:

1. A wafer producing method of producing a wafer from an ingot, the method comprising:

a separation layer forming step of positioning a focal point of a laser beam of such a wavelength as to be transmitted through the ingot at a depth corresponding to a thickness of a wafer to be produced from an end face of the ingot and applying the laser beam to the ingot to form a separation layer;

an ultrasonic wave generating step of positioning an ultrasonic wave generating means so as to face the wafer to be produced with a layer of water interposed therebetween and generating an ultrasonic wave through the layer of water to break down the separation layer; and

a separation detecting step of detecting separation of the wafer to be produced from the ingot according to change in sound,

wherein in the separation detecting step, a microphone collects sound, and when a frequency of the collected sound an amplitude of which becomes a peak reaches a predetermined value, it is detected that the wafer has been separated.

2. The wafer producing method according to claim

1, wherein the ingot is a hexagonal single crystal SiC ingot having a c-axis and a c-plane which is orthogonal to the c-axis, and

in the separation layer forming step, a focal point of a laser beam of such a wavelength as to be transmitted through the hexagonal single crystal SiC ingot is positioned at a depth corresponding to a thickness of a wafer to be produced from an end face of the hexagonal single crystal SiC ingot, and the laser beam is applied to the hexagonal single crystal SiC ingot to form a separation layer including a modified portion in which SiC is separated into Si and C, and cracks isotropically extending along the c-plane from the modified portion.

3. The wafer producing method according to claim 2, wherein the ingot is a hexagonal single crystal SiC ingot in which the c-axis is inclined with respect to a normal line to an end face thereof and an off angle is formed by the c-plane and the end face, and

in the separation layer forming step, the separation layer is formed by continuously forming the modified portion in a direction orthogonal to a direction in which the off angle is formed to form the cracks isotropically extending along the c-plane from the

modified portion, relatively carrying out indexing feeding of the hexagonal single crystal SiC ingot and the focal point within a range not exceeding a width of each of the cracks in the direction in which the off angle is formed, and continuously forming modified portions in the direction orthogonal to the direction in which the off angle is formed to sequentially generate the cracks isotropically extending along the c-plane from each of the modified portions.

4. A wafer producing apparatus which produces a wafer from an ingot in which a separation layer is formed by positioning a focal point of a laser beam of such a wavelength as to be transmitted through the ingot at a depth corresponding to a thickness of a wafer to be produced from an end face of the ingot and applying the laser beam to the ingot, the wafer producing apparatus comprising:

an ultrasonic wave generating means having an end face which faces the wafer to be produced and generating an ultrasonic wave;

a microphone disposed adjacent to the ingot and collecting sound which is propagated in the air from the ingot; and

separation detecting means coupled with the

microphone and detecting separation of the wafer to be produced from the ingot according to change of the frequency of the collected sound collected by the microphone an amplitude of which becomes a peak.