What is claimed is:

1. A wafer producing method for producing a hexagonal single crystal wafer from a hexagonal single crystal ingot having a first surface, a second surface opposite to the first surface, a c-axis extending from the first surface to the second surface, and a c-plane perpendicular to the c-axis, the wafer producing method comprising:

a separation start point forming step of setting a focal point of a laser beam inside the ingot at a predetermined depth from the first surface, which depth corresponds to a thickness of the wafer to be produced, and next applying the laser beam to the first surface as relatively moving the focal point and the ingot to thereby form a modified layer parallel to the first surface and cracks extending from the modified layer along the c-plane, thus forming a separation start point; and

a wafer separating step of separating a plate-shaped member having a thickness corresponding to the thickness of the wafer from the ingot at the separation start point after performing the separation start point forming step, thus producing the wafer from the ingot;

the separation start point forming step including:

a modified layer forming step of relatively moving the focal point of the laser beam in a first direction perpendicular to a second direction where the c-axis is inclined by an off angle with respect to a normal to the first surface and the off angle is formed between the first surface and the c-plane, thereby linearly forming the modified layer extending in the first direction, and

an indexing step of relatively moving the focal point in the second direction to thereby index the focal point by a predetermined amount;

wherein the separation start point forming step includes a first separation start point forming step of scanning the laser beam from a scanning start point to a scanning end point on the ingot and a second separation start point forming step of scanning the laser beam from the scanning end point to the scanning start point, the first separation start point forming step and the second separation start point forming step being alternately repeated plural times to thereby separate the cracks from the modified layer.

2. The wafer producing method according to claim 1, wherein the wafer separating step includes the steps of immersing the hexagonal single crystal ingot in water and then applying ultrasonic vibration to the ingot, thereby separating the plate-shaped member from the ingot to produce the hexagonal single crystal wafer.

3. The wafer producing method according to claim 1 or 2, wherein the hexagonal single crystal ingot is selected from a SiC single crystal ingot and a GaN single crystal ingot.