successively melted and solidified by a scanning heat source having a diameter larger than the D50 of the metal powder to form a solidified layer are carried out. The process in which the metal powder is spread in a layer and the process in which the solidified layer is formed are repeated to form multiple layers of the solidified layer, and the additive manufacturing product of the present invention can be produced. The scanning heat source may be, for example, a laser or an electron beam. It is preferable to make the diameter of the scanning heat source larger than the D50 of the metal powder, so the aggregate of the metal powder may be melted uniformly.

[0027] In the production method according to the present invention, when the above-mentioned metal powder is irradiated with a laser while being scanned, the laser output can be set to 50 to 350 W, the scanning speed can be set to 200 to 2000 mm/sec, and the scanning pitch can be set to 0.02 to 0.20 mm. If the layer thickness per laser scan is too large, the heat is not easily transferred to the entire spread metal powder during laser irradiation, and the metal powder does not melt sufficiently, which promotes the formation of an internal defect. On the other hand, if the layer thickness per scan is too small, the number of layers needed to achieve a desired size of the additive manufacturing product increases, and the time needed for the additive manufacturing process increases. For this reason, the layer thickness per scan is preferably 10 to 200 μm. A more preferable lower limit of the layer thickness is 20 μm, and a more preferable upper limit of the layer thickness is 100 μm.

[0028] In the production method according to the present invention, in order to impart the mechanical properties needed for use as a metal product (part), it is preferable to subject the as-additively manufactured component (i.e., the component has not been subjected to heat treatment after additive manufacturing) to aging treatment. The aging treatment of the additive manufacturing product of the present invention causes various intermetallic compounds to precipitate in the structure, for example, it is useful in that the hardness can be adjusted to 40 to 55 HRC to obtain superior high strength and high toughness. The aging treatment temperature is preferably 400°C or higher, more preferably 450°C or higher, further preferably 500°C or higher,