A METHOD FOR THE ADDITIVE MANUFACTURING OF A PART BY SELECTIVE MELTING OR SELECTIVE SINTERING OF OPTIMIZED-COMPACTNESS POWDER BEDS USING A HIGH ENERGY BEAM

A B S T R A C T

The invention relates to a fabrication method for fabricating a part by selective melting or selective sintering of powder beds by high energy beam, the method comprising the following steps:

a) providing a material in the form of powder particles (60);

b) depositing a first powder layer (10) on a support (80);

c) scanning at least one region of said first layer (10) with the beam (95) so as to heat the powder of said region locally to a temperature higher than the sintering temperature of the powder, such that the particles of said powder as melted or sintered in this way in said region form at least a first single-piece element (15);

d) laying a second powder layer (20) on said first powder layer (10);

e) scanning at least one region of said second layer (20) with the beam (95) so as to heat the powder of this region to a temperature higher than the sintering temperature of the powder, so that the particles of powder as sintered or melted in this way form at least one second single-piece element (25); and

f) repeating steps d) and e) for each new powder layer to be laid over a preceding layer until the part has been completely formed.

In characteristic manner, the powder has a grain size distribution that is multimodal.

Figure 1