

ABSTRACT OF THE DISCLOSURE

The present invention discloses an interlayer pre-cooling apparatus for a sand mold freezing printing, including a sand paving apparatus, where the sand paving apparatus is located above a negative-pressure low-temperature forming chamber, and the sand paving apparatus includes several independent sand paving grooves, a hollow sand paving roller, a cooling chamber, a sand scraping plate, and an openable and closable baffle; the openable and closable baffle is rotationally arranged at a discharge port of each sand paving apparatus, and the openable and closable baffle is used for paving low temperature premixed sand on demand. By providing cooling capacity for the hollow sand paving roller and the sand scraping plate, the premixed molding sand is further cooled during the process of scraping and compacting low-temperature molding sand. When the apparatus is adopted for sand mold freezing 3D printing, the low temperature of the premixed molding sand is precisely controllable, which has great significance for realizing interlayer pre-cooling of the sand mold freezing printing.