

COMPONENT OF VARIABLE THICKNESS HAVING RESIDUAL COMPRESSIVE STRESSES THEREIN, AND METHOD THEREFOR

ABSTRACT OF THE DISCLOSURE

A method of reducing crack propagation includes: providing a metallic component (122) having an exterior surface, and using a burnishing element (114) to apply a varying to the exterior surface within a selected area, within which the component has a varying thickness, so as to create a region (150) of residual compressive stress of surrounded by an interior boundary (154). The distance from the interior boundary (148) to the exterior surface at any location within the selected area is independent of the thickness of the component (122) at that location, and may be controlled by changing the pressure and/or an amount of overlap between burnished segments.

Figure 4B