



US 20080223099A1

(19) **United States**

(12) **Patent Application Publication**
David

(10) **Pub. No.: US 2008/0223099 A1**
(43) **Pub. Date: Sep. 18, 2008**

(54) **COMPONENT WITH COMPRESSIVE RESIDUAL STRESSES, PROCESS FOR PRODUCING AND APPARATUS FOR GENERATING COMPRESSIVE RESIDUAL STRESSES**

(86) PCT No.: **PCT/EP2004/014300**

§ 371 (c)(1),
(2), (4) Date: **Jul. 13, 2006**

(75) Inventor: **Walter David, Mülheim an der Ruhr (DE)**

(30) **Foreign Application Priority Data**

Jan. 15, 2004 (EP) 04000775.9

Correspondence Address:
SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830 (US)

Publication Classification

(51) **Int. Cl.**
C21D 7/06 (2006.01)
F01D 5/28 (2006.01)

(52) **U.S. Cl.** **72/53; 416/223 R**

(73) Assignee: **SIEMENS AKTIENGESELLSCHAFT, München (DE)**

(57) **ABSTRACT**

The inventive method discloses the local, adapted and controlled introduction of internal compressive stress in convex and concave regions, such as the root region of turbine blades, by means of at least two pressure generators.

(21) Appl. No.: **10/585,954**

(22) PCT Filed: **Dec. 15, 2004**

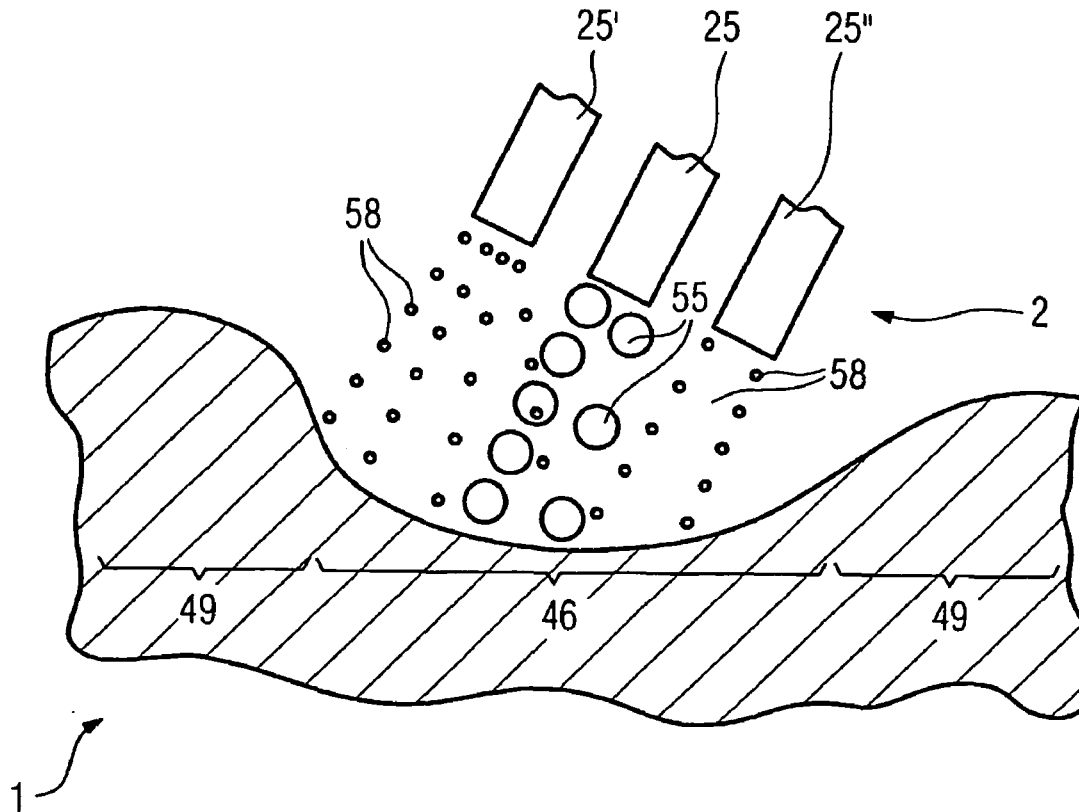


FIG 1

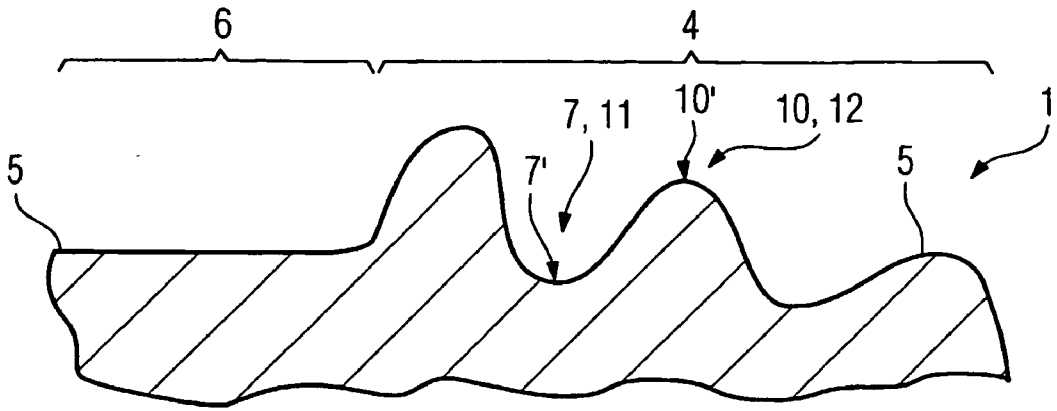


FIG 2

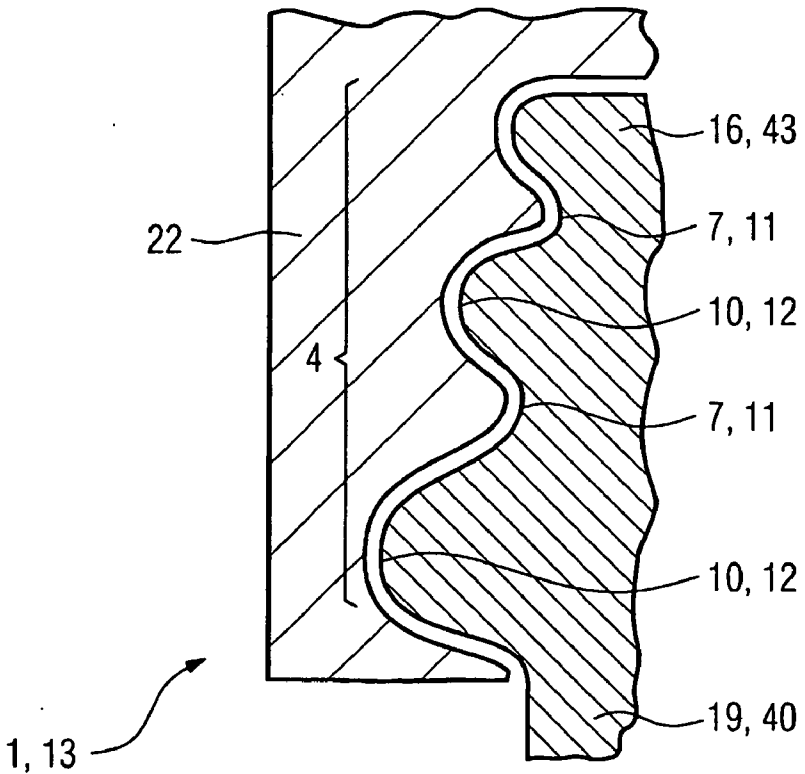


FIG 3

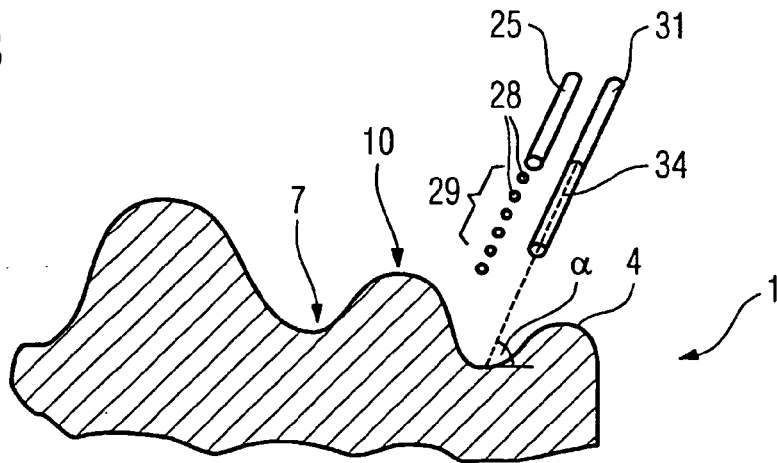


FIG 4

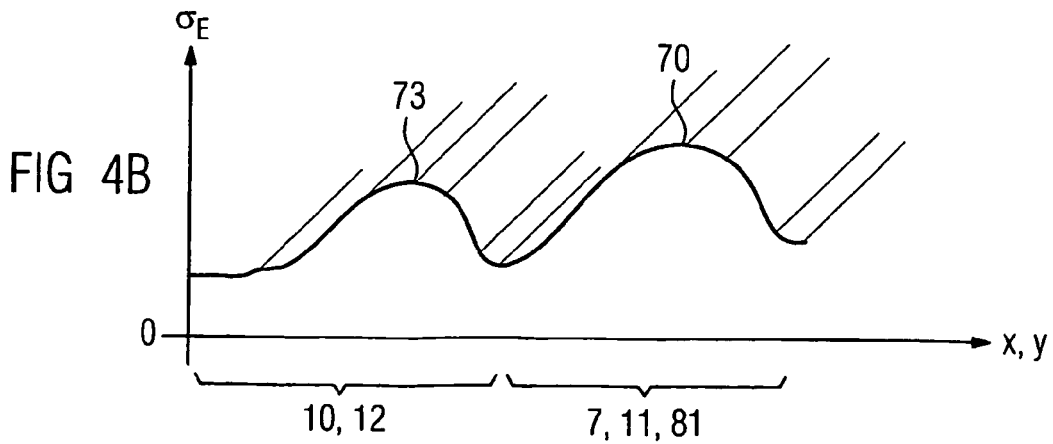
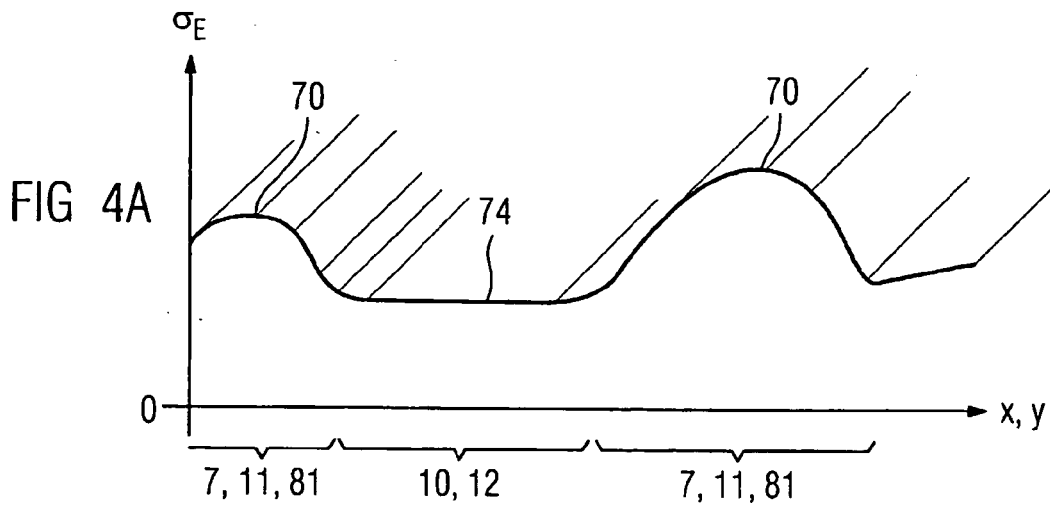


FIG 5

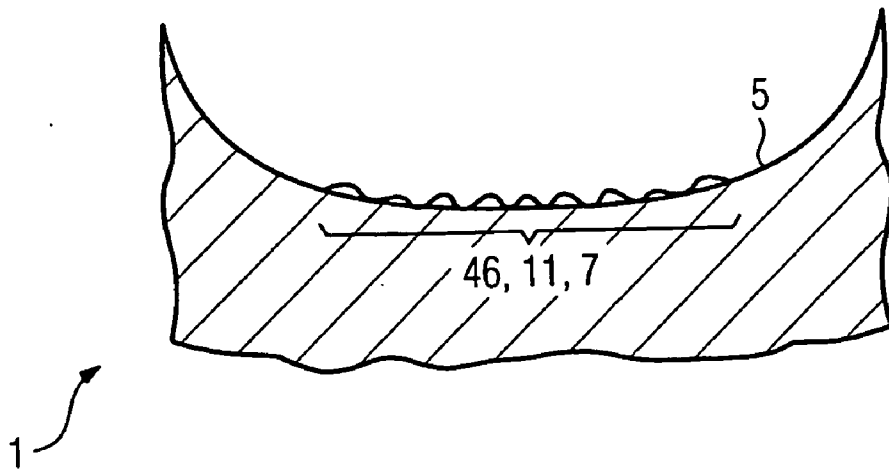


FIG 6

