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# **Apparatus for Producing Tube of Ultrafine Grain Materials**



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### **TECHNOLOGY READINESS LEVEL (TRL)**

TRL 4

## **PATENT/ GRANTED NUMBER**

MY-176749 -A

# **TECHNOLOGY OVERVIEW**

The present invention relates to an improved apparatus for producing a tube of ultrafine grain material. The apparatus comprises a first cylindrical body with an outer wall surrounded by an inner wall of a second cylindrical body to define a passageway therebetween, and a punch insertably engaged in the passageway and configured for forcing the ultrafine grain material through the passageway. The passageway preferably comprises a distorted portion with at least three shear zones formed by a triangular-shaped outward bulge and a triangular shaped inward bulge integrally formed on the outer wall and the inner wall, respectively. The second cylindrical body may comprise two identical parts that are detachable from each other to facilitate release of the tube and housed by a backup sleeve that holds together the two identical parts.

## **CONTACT US!**

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