AEC-NASA TECH BRIEF

Energy Absorber Uses Expanded Coiled Tube

A mechanical shock-mitigating device, based on working material to its failure point, absorbs mechanical energy by bending or twisting tubing. It will function under axial or tangential loading, has no rebound, is area independent and is easy and inexpensive to build.

Unitary extruded flat tube is formed into decreasing spiral coils and then welded together solidly into a frustoconical or "beehive" shape. Energy absorption results from successive coils of the tube rolling about their weld points under deformation loading. An increasing amount of material undergoes the twisting or deformation action as the beehive collapses and each successive larger diameter coil is put under load. Damping action still results if the tube fractures.

This innovation may be utilized as a shock absorber and as such should be of interest to the aerospace and transportation industries.

Note:

Requests for further information may be directed to:

Mr. Glenn K. Ellis
Technology Utilization Officer
Office of Information Services
U. S. Atomic Energy Commission
Washington, D.C. 20545
Reference: TSP72-10239

Patent status:

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Mr. George H. Lee, Chief
Chicago Patent Group
U.S. Atomic Energy Commission
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

Source: E. F. Johnson
Sandia Laboratories
under contract to
Atomic Energy Commission
(AEC-10044)

Category 06