

[54] **ULTRASONIC APPARATUS FOR JOINING  
AND SEVERING SHEET MATERIAL**

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[57] **ABSTRACT**

An apparatus for joining sheet material and cutting joined material comprises a set of drums rotating against one another. A first drum is provided along its surface with a raised pattern serving as welding surfaces when operating in conjunction with one or more ultrasonic resonators. As sheet material is fed through the nip formed between the drum and the resonator, the material is joined in accordance with the pattern. A second drum is provided along its surface with a complementary raised pattern of cutting surfaces. As the material subsequently is fed through the nip between both drums, the welded portions are severed from the surrounding material. The welding and cutting pattern surfaces are constructed to mesh for providing positive severing of the material interposed therebetween.

**6 Claims, 3 Drawing Figures**

