pressing against lead 204 proximate die 202 (with the dotted portions being portions of leadframe 200 such as leads 204/tie bars 208). The constraint of leadframe 200 by device clamp 220 in this design is dependent upon the frictional coupling of leadframe 200 to anvil 214 provided by clamping caused by the normal force induced by the bending of clamp fingers 212. In many applications this frictional coupling is not sufficient to properly constrain leadframe 200, and therefore poor bonding tends to result.

[0007] Thus, it would be desirable to provide improved clamping systems for wire and ribbon bonding applications.

SUMMARY OF THE INVENTION

[0008] According to an aspect~~exemplary embodiment~~ of the present invention, a support structure for supporting a semiconductor device during a bonding operation is provided. The support structure includes a body portion, the body portion defining an upper surface configured to support a semiconductor device during a bonding operation. The upper surface defines a constraining feature for constraining at least a portion of the semiconductor device during the bonding operation.

[0009] According to another aspect~~exemplary embodiment~~ of the present invention, a clamping system for securing a semiconductor device during a bonding operation is provided. The clamping system includes a device clamp including a body portion, the body portion including a lower surface configured to contact a semiconductor device during a bonding operation. The lower surface defines a constraining feature for constraining at least a portion of the semiconductor device during the bonding operation. The clamping system also includes a support structure for supporting the semiconductor device from below during the bonding operation, wherein the support structure includes a compliant layer.

[0010] There is also disclosed~~The present invention may also be considered to be~~ a wire and/or ribbon bonding system or machine. Such a system/machine may include a support structure and/or clamping system as described herein, amongst other elements such as, for example, a bonding tool, an ultrasonic transducer carrying the bonding tool, a wire/ribbon supply for supplying the wire/ribbon to the bonding tool for bonding, a bond head assembly carrying the ultrasonic transducer, a material handling system for transporting the semiconductor devices (carried by a leadframe) during the bonding operation, amongst others.

[0011] There is also disclosed~~The present invention may also be considered to be~~ a method of securing a semiconductor device (e.g., including a leadframe) during a wire/ribbon bonding