because of the limited wire length between the bonding tool and the tensioning device, an adequate wire length is not provided for certain looping motions. Further still, the wire length between the air guide and the tensioner is not subject to the variable tension, which may result in a non-optimized tension setting for said wire length.

[0006] Thus, it would be desirable to a wire feed system for a wire bonding machine overcoming one or more of the deficiencies of the prior art.

SUMMARY OF THE INVENTION

[0007] According to an aspect~~exemplary embodiment~~ of the present invention, ~~a wire feed system for~~ a wire bonding machine is provided. The wire bonding machine~~feed system~~ includes (1) a wire supply, and (2) an air guide for receiving a length of wire from the wire supply. The air guide has an air inlet for receiving a pressurized fluid. The wire bonding machine further includes a bondhead including a wire tensioner. The wire tensioner is separate from the air guide, which is a stationary component of the wire bonding machine not travelling with the bondhead. ~~The wire feed system~~ is configured to apply a variable tension to the length of wire received by the air guide.

[0008] According to another aspect~~exemplary embodiment~~ of the present invention, a method of operating a wire feed system of a wire bonding machine is provided. The method includes providing a length of wire to an air guide of the wire feed system, the air guide being a stationary component of the wire bonding machine. The method also includes providing a wire tensioner carried by a bondhead, the length of wire being received by the wire tensioner. The method also includes varying a tension applied to at least a portion of the length of wire provided to the air guide.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The invention is best understood from the following detailed description when read in connection with the accompanying drawing. It is emphasized that, according to common practice, the various features of the drawing are not to scale. On the contrary, the dimensions of the various features are arbitrarily expanded or reduced for clarity. Included in the drawing are the following figures:

Fig. 1 is a front view of a wire bonding machine in accordance with an exemplary embodiment of the present invention;

Fig. 2 is a front view of certain components of a wire bonding machine in accordance with an exemplary embodiment of the present invention;

Figs. 3A-3C are block diagrams of a wire feed system in accordance with an exemplary embodiment of the present invention;