heating in the cable compared to the use of thicker conductors.

At its most general, the present invention relates to a hollow cable for transmitting radiofrequency and/or microwave frequency energy to an electrosurgical instrument, wherein the hollow cable is provided with electrical connectors for forming a bipolar electrical connection with the electrosurgical instrument.

According to an aspect of the present invention there is provided a cable for conveying radiofrequency and/or microwave frequency energy to an electrosurgical instrument at a first end of the cable, the cable comprising:

a hollow tube comprising inner and outer electrically conductive layers separated by dielectric material to form a transmission line, the hollow tube having a central channel extending along its length;

a first terminal at the first end of the cable, the first terminal being arranged to form an electrical connection between the inner conductive layer and a first cooperating terminal of the electrosurgical instrument; and

a second terminal at the first end of the cable, the second terminal being arranged to form an electrical connection between the outer conductive layer and a second cooperating terminal of the electrosurgical instrument,

wherein the first terminal comprises a first electrically conductive protrusion extending in an axial direction from the first end of the cable and electrically connected to the inner conductive layer; and/or

wherein the second terminal comprises a second electrically conductive protrusion extending in an axial direction from the first end of the cable and electrically connected to the outer conductive layer.

According to a further aspect of the present invention, there is provided a cable for conveying radiofrequency and/or microwave frequency energy to an electrosurgical instrument at a first end of the cable, the cable comprising:

a hollow tube comprising inner and outer electrically conductive layers separated by dielectric material to form a transmission line, the hollow tube having a central channel extending along its length;

a first terminal at the first end of the cable, the first terminal being arranged to form an electrical connection between the inner conductive layer and a first cooperating terminal of the electrosurgical instrument; and

a second terminal at the first end of the cable, the second terminal being arranged to form an electrical connection between the outer conductive layer and a second cooperating terminal of the electrosurgical instrument;

wherein the first terminal comprises a first area of electrically conductive material located on a circumferential surface of the cable; and

wherein the first area of electrically conductive material is located on an outer side of the dielectric material and is electrically connected to the inner conductive layer by an electrical connection that passes through, or around, the dielectric material.

According to a further aspect of the present invention, there is provided a cable for conveying radiofrequency and/or microwave frequency energy to an electrosurgical instrument at a first end of the cable, the cable comprising:

a hollow tube comprising inner and outer electrically conductive layers separated by dielectric material to form a transmission line, the hollow tube having a central channel extending along its length;

a first terminal at the first end of the cable, the first terminal being arranged to form an electrical connection between the inner conductive layer and a first cooperating terminal of the electrosurgical instrument; and

a second terminal at the first end of the cable, the second terminal being arranged to form an electrical connection between the outer conductive layer and a second cooperating terminal of the electrosurgical instrument;

wherein the second terminal comprises a second area of electrically conductive material located on a circumferential surface of the cable; and

wherein the second area of electrically conductive material is located on an inner side of the dielectric material and is electrically connected to the outer conductive layer by an electrical connection that passes through, or around, the dielectric material.

Thus, the cable can be connected to an electrosurgical instrument to form a bipolar electrical connection with the electrosurgical instrument by electrically connecting the first terminal and the first cooperating terminal and by electrically connecting the second terminal and the second cooperating terminal. The cable can then be used to convey radiofrequency or microwave frequency energy to the electrosurgical instrument.

In some embodiments, the cable may be for conveying only radiofrequency energy to the electrosurgical instrument. In other embodiments, the cable may be for conveying only microwave frequency energy to the electrosurgical instrument. In further embodiments, the cable may be for conveying both radiofrequency energy and microwave frequency energy to the electrosurgical instrument.

The term inner means closer to a centre of the hollow tube. The term outer means further from a centre of the hollow tube.