

[54] ELECTROCOAGULATION GRASPING
FORCEPS FOR TUBE STERILIZATION BY
MEANS OF BIPOLAR HIGH FREQUENCY
HEAT RADIATION

[76] Inventor: Hans-Joachim Lindemann, Kleiner
SchaferKamp 43, Hamburg,
Germany

[22] Filed: Mar. 7, 1973

[21] Appl. No.: 339,011

[30] Foreign Application Priority Data

Feb. 10, 1972 Germany..... 7305040

[52] U.S. Cl. 128/303.17, 128/406

[51] Int. Cl. A61b 17/36, A61n 3/04

[58] Field of Search 128/303.17, 404, 405, 406,
128/407, 411

[56]

References Cited

UNITED STATES PATENTS

1,908,201	5/1933	Welch et al.....	128/303.17
1,983,669	12/1903	Kimble.....	128/303.17
2,100,116	11/1937	Webb.....	128/303.17
3,163,165	12/1906	Humio Isikawa.....	128/303.17

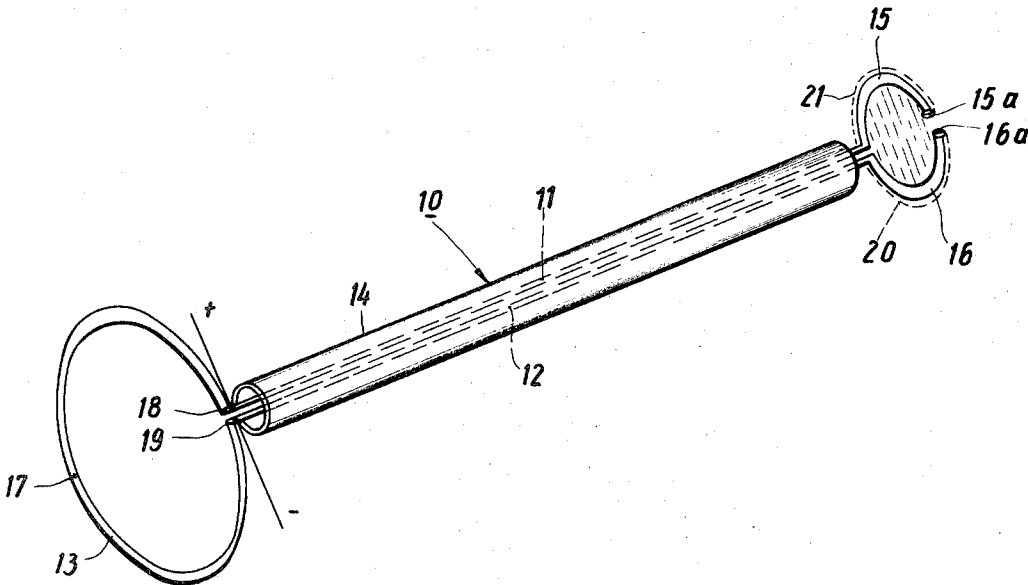
Primary Examiner—Channing L. Pace
Attorney, Agent, or Firm—Ernest F. Marmorek

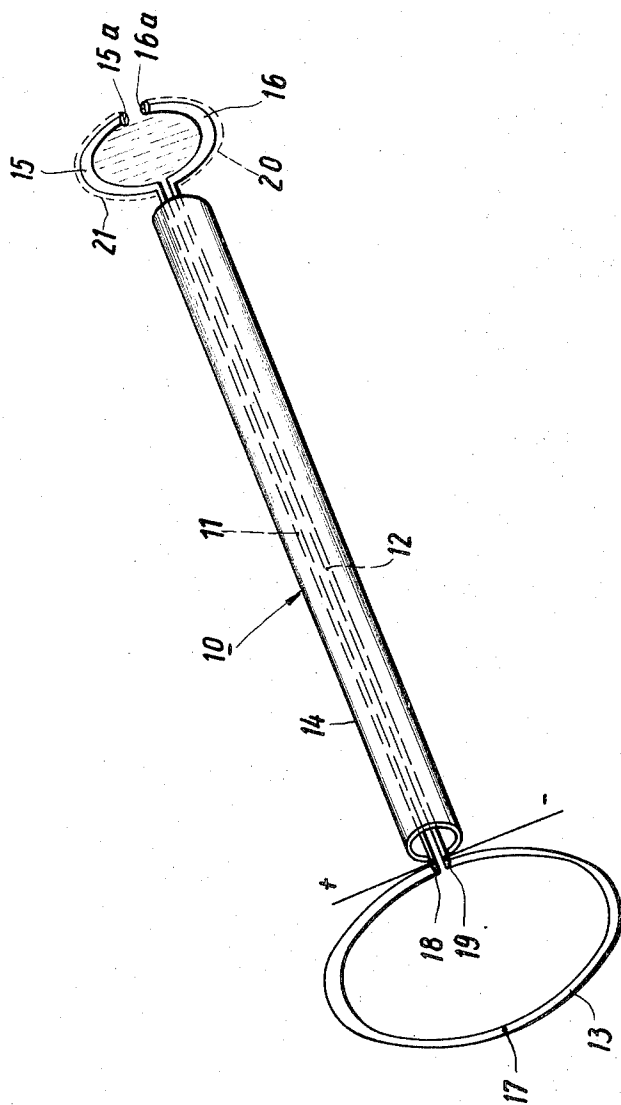
[57]

ABSTRACT

The invention relates to an electrocoagulation grasping forceps for tube sterilization for the elimination of sick parts of the tissue by means of punctiform and section-taking heat radiation without damaging sound parts of the tissue.

2 Claims, 1 Drawing Figure





ELECTROCOAGULATION GRASPING FORCEPS FOR TUBE STERILIZATION BY MEANS OF BIPOLAR HIGH FREQUENCY HEAT RADIATION

SUMMARY OF THE INVENTION

The object of the invention is an electrocoagulation forceps for the elimination of sick parts of the tissue and for the sterilization of the tube by means of high frequency heat radiation, the forceps being characterized by two rod-shaped arms which are constructed as electric conductors and insulated against each other and connected to each other at one side via a bow-like handle and arranged in a tubular shell consisting of insulating materials, each arm disposing of devices of connection to the pole of a current source and the free ends of the arms being constructed as jaw-shaped and insulated grip-sections, the end sections lying opposite each other being free from insulations.

The drawing shows the object of the invention as an example.

No. 10 shows a coagulation grasping forceps consisting of two rod-shaped arms 11, 12 which are connected to each other at one side via a bow-like handle 13. The forceps arms 11, 12 which are composed of insulated electric conductors are arranged in a tubular shell 14 consisting of insulating materials, the free arms of the forceps together with the bow-like handle 13 protruding from one end of the tubular shell, whereas the other two ends of the forceps which protrude from the other end of the tubular shell have also insulated and jaw-shaped grip sections 15, 16 the end sections 15a, 16a of which lying opposite each other being reinforced and free from insulations. The two arms 11, 12 of the forceps are insulated against each other in the handle 13 at No. 17. Furthermore, the two arms 11, 12 dispose of devices given at 18 and 19 for the connection of cables which are connected to a current source so that arm 11 forms the + pole and arm 12 the - pole.

According to a further feature of the invention the grip sections 15, 16 are, only towards the outside, provided with an insulating layer shown at 20, 21 so that the heat radiation can only become effective in the space enclosed by the grip sections 15, 16.

After the part of the tissue which has to be eliminated is seized by means of the free end pieces 15a, 16a of the grip sections 15, 16, forceps 10 is connected to a current source and heat is produced because of the resistance existing between the two end pieces 15a, 16a, said heat being used for destroying the tissue part

which has to be eliminated. There is, however, also the possibility to produce the free end pieces 15a, 16a out of current-carrying material of high resistance so that a joulean heat required for the elimination of the tissue parts can be produced. Apart from a bipolar current supply there is also the possibility to use the forceps itself as one of the two current-carrying conductors, whereas the human body is the other pole.

The special advantage of the coagulation forceps lies in the fact that only that part of the tissue which has to be eliminated is seized and exposed to heat radiation, whereas the other part of the tissue cannot be destroyed or damaged. By the fact that the grip sections have only an external insulation, only the part of the tissue lying in the interior of the closed grip sections 15, 16 is exposed to heat radiation.

I claim:

1. An electro-coagulation gripping forceps comprising two arms and a jaw formed by oppositely disposed terminal parts on said arms, for utero-tube sterilization with the aid of a high frequency electromagnetic field generated between said parts by heating and destroying a tissue portion lying between said parts, said forceps comprising gripping segments on said arms including said terminal parts, and an insulating layer disposed on the external surfaces of said gripping segments terminating short of, for exposing, said terminal parts of said gripping segments, whereby the intensity of said high frequency electromagnetic field is substantially localized near said terminal parts.

2. An electro-coagulation forceps for utero-tube sterilization with the aid of a high frequency electromagnetic field, said forceps comprising two electrically conductive arms electrically insulated from each other, and including claw-like developed gripping segments at one end of said forceps, said segments including opposite terminal parts defining a jaw, a bow-like handle formed at the other end of said forceps mechanically connecting said arms, connecting means for electrically connecting said arms to an electrical generator for producing the high frequency electromagnetic field at said jaw, a tubular insulating shell through which said arms pass for manual insulated support of said forceps and an insulating layer disposed on the external surfaces of said gripping segments terminating short of, for exposing, said terminal parts of said gripping segments, whereby the intensity of said high frequency electromagnetic field is substantially localized near said terminal parts.

* * * * *

55

60

65