CLAIMS

What is claimed is:

1. An electrostimulation device, comprising:

a computer generating an electrostimulation generator control signal;

a transcutaneous electrostimulation generator having a stimulation output and:

receiving the electrostimulation generator control signal;

generating a nerve electrostimulation signal dependent upon the electrostimulation generator control signal; and

outputting the nerve electrostimulation signal at the stimulation output;

an electronic signal conduit conductively connected to the stimulation output; and

a tragus-canal electrode clamp having:

a tragus boom comprising as a first electrostimulation electrode having a first tragus contact that is conductively connected to the electronic signal conduit to receive the nerve electrostimulation signal;

a canal boom longer than the first tragus boom, including a hinge for pivotally connecting the canal boom to the tragus boom, and comprising:

a second electrostimulation electrode having a canal contact conductively connected to the electronic signal conduit to receive the nerve electrostimulation signal;

a second tragus contact;

a first stiff proximal portion connected to the hinge and formed of a material that retains its shape when the first tragus contact of the tragus boom and the second tragus contact of the canal boom are adapted to be secured on the tragus; and

a flexible distal portion integral with the first stiff proximal portion and formed of a material that deforms when the first tragus contact of the tragus boom and the second tragus contact of the canal boom are adapted to be secured on the tragus;

the canal boom, the tragus boom, and the hinge together forming a shape such that, when adapted to be placed about a user's tragus:

the tragus boom is adapted to place the first tragus contact on an outer surface of the tragus; and

the canal boom is adapted to place the second tragus contact on an inner surface of the tragus opposite the first tragus contact and adapted to place the canal contact on a surface of the ear canal adjacent the tragus and within the ear canal further from the hinge than the second tragus contact.

2. The device according to claim 1, wherein:

the computer outputs a music signal;

the transcutaneous electrostimulation generator has an audio output, receives the music signal, and outputs the music signal at the audio output;

the electronic signal conduit is conductively connected to the audio output; and

the tragus-canal electrode clamp:

has at least one audio speaker connected to the audio output through the electronic signal conduit and outputs the music signal into the ear canal when worn; and

supplies the nerve electrostimulation signal while the music signal is output from the at least one audio speaker.

3. The device according to claim 2, further comprising a wired connection between the computer and the electrostimulation generator, wherein the computer transmits the electrostimulation generator control signal and the music signal to the electrostimulation generator through the wired connection.

4. The device according to claim 2, wherein the computer transmits the electrostimulation generator control signal and the music signal to the electrostimulation generator wirelessly.

5. The device according to claim 2, wherein:

the audio output of the electrostimulation generator is an audio output port; and

the electronic signal conduit comprises:

a speaker conductively connected to the at least one speaker and having an audio jack shaped to be inserted into the audio output to receive therefrom the music signal; and

an electrostimulation conduit conductively connecting the nerve electrostimulation signal to at least one of the first and second electrostimulation electrodes.

6. The device according to claim 2, wherein the computer modulates the nerve electrostimulation signal based upon the music signal.

7. The device according to claim 1, wherein the nerve electrostimulation signal is configured to stimulate at least one of a vagus nerve, a trigeminal nerve, a peripheral nerve, and a cranial nerve.

8. The device according to claim 1, wherein the computer is one of a smartphone, a tablet, and a personal computer.

9. The device according to claim 1, wherein, when the tragus-canal electrode clamp is adapted to be placed on the tragus:

the first and second tragus contacts provide a tragus clamping force that is adapted to retain the tragus-canal electrode clamp on the tragus; and

the distal portion flexes from the proximal portion independently of the tragus clamping force, which flexing provides a surface-to-surface contact force that is adapted to press the canal contact against the surface of the ear canal to establish electrical contact therebetween.

10. The device according to claim 1, wherein:

the electronic signal conduit has conductive leads; and

each of the first tragus contact and the canal contact has an electrically conductive exterior portion conductively connected to a respective one of the conductive leads.

11. The device according to claim 1, wherein the first tragus contact and the canal contact are formed of a conductive material and/or coated with a conductive material.

12. The device according to claim 1, wherein the second tragus contact comprising as a third electrostimulation electrode has an electrically conductive exterior portion that is conductively connected to the electronic signal conduit to receive the nerve electrostimulation signal.

13. The device according to claim 1, wherein the hinge is a spring hinge.

14. The device according to claim 1, wherein the hinge is a bi-modal hinge.

15. The device according to claim 1, further comprising a wired connection between the computer and the transcutaneous electrostimulation generator, wherein the computer and the transcutaneous electrostimulation generator are separate and are connected by the wired connection.

16. The device according to claim 1, wherein the computer and the transcutaneous electrostimulation generator are separate and are connected wirelessly.