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(54) Title: WAVEGUIDE NEURAL INTERFACE DEVICE

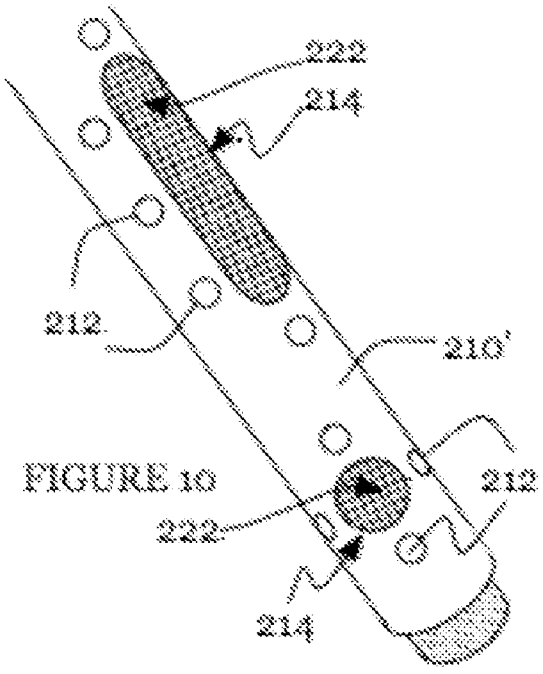



FIGURE 10

(57) Abstract: A waveguide neural interface device including: a neural device implantable in tissue and including an array of electrode sites that electrically communicate with their surroundings, in which the array of electrode sites includes at least one recording electrode site; and a waveguide, coupled to the neural device, that carries light along a longitudinal axis and includes a light directing element that redirects the carried light from the waveguide to illuminate selectively targeted tissue, in which at least a portion of the redirected light is directed laterally away from the longitudinal axis and the recording electrode site is configured to sample illuminated tissue. A method for assembling a waveguide neural interface device is also described.

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