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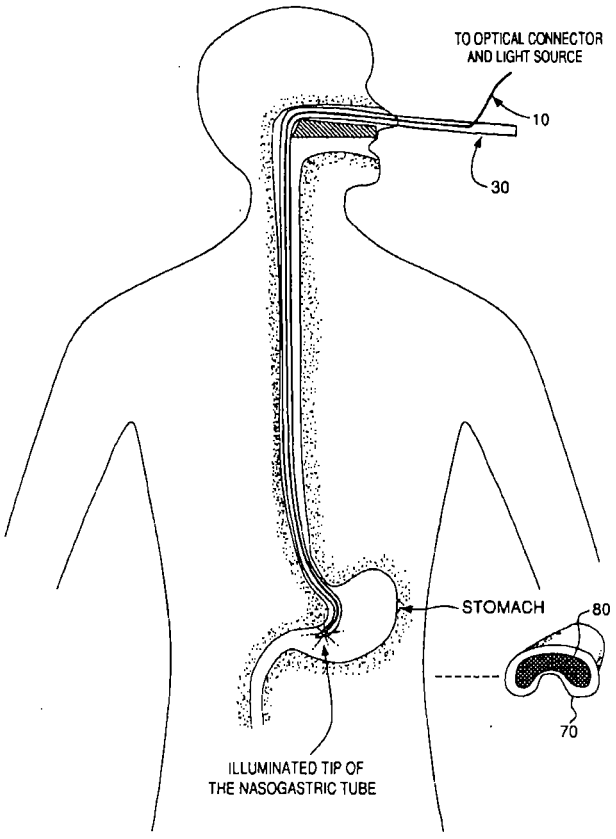
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(54) Title: OPTICAL GUIDANCE SYSTEM FOR INVASIVE CATHETER PLACEMENT



(57) Abstract: Light from a small laser diode is inserted in a distal end (50) of a catheter (30) and passed through an optical fiber (10) that is either included in the lumen or incorporated into the wall of an invasive catheter tube during manufacture. The light is selected to be of a wavelength that is minimally absorbed by tissue, preferably in the range from about 620 nm to 1100 nm. 780 nm is preferably used as this is where the tissue absorption is near a minimum. The light passes out the end of the fiber (10) and through the tissue to the outside of the patient's skin where it is measured. The light pattern is observed by night vision goggles (70) that filter out other frequencies of light. The detected light permits location of the end of the fiber (10), the positional accuracy depending on the thickness of tissue between the fiber tip and the exterior of the body.

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