A Palpation Device for Soft Tissue Property Measurement

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Technology description

The invention is a palpation device that allows medical professionals to non-invasively and quantitatively measure the hardness or softness of human tissue. The device itself is worn on the hand and allows the user to perform a medical palpation exam without hindering their sense of touch. The device is comprised of sensors, which measure both the position of the fingers as well as the force applied by each finger. This data is then used to calculate the stiffness of the underlying tissue. There are currently no instrumented gloves on the market which measure both force and position. A potential application is the detection and evaluation of sub-surface tumors. The device enables the user to quantify the size, location and stiffness of the tumor. Another medical application is in hand rehabilitation where the device would quantitatively measure strength and range of motion. This glove can also be used as a data input device for modeling and computer aided design (CAD) applications. The user can re-create a complex shape on the computer by merely moving the device along the surface of the part. New, complex parts can also be developed by wearing the glove(s) while molding clay or other formable substances. The computer uses the data from the sensors in order to render the shape of the final product.

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