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(54) **Title**: AUTOMATICALLY DETERMINING 3D CATHETER LOCATION AND ORIENTATION USING 2D FLUOROSCOPY ONLY

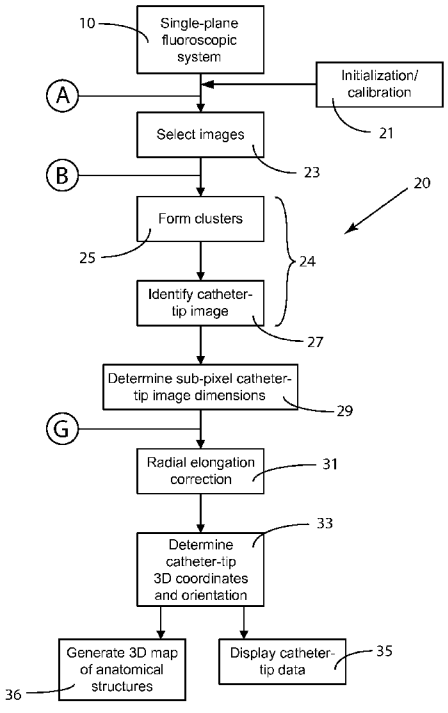


FIG. 4

(57) **Abstract**: A method for automatically determining the 3D position and orientation of a radio-opaque medical object in a living body using single-plane fluoroscopy comprising capturing a stream of digitized 2D images from a single-plane fluoroscope (10), detecting the image of the medical object in a subset of the digital 2D images, applying pixel-level geometric calculations to measure the medical-object image, applying conical projection and radial elongation corrections (31) to the image measurements, and calculating the 3D position and orientation of the medical object from the corrected 2D image measurements.

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