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(54) **Title:** SAMPLE HANDLING APPARATUS AND IMAGE REGISTRATION METHODS

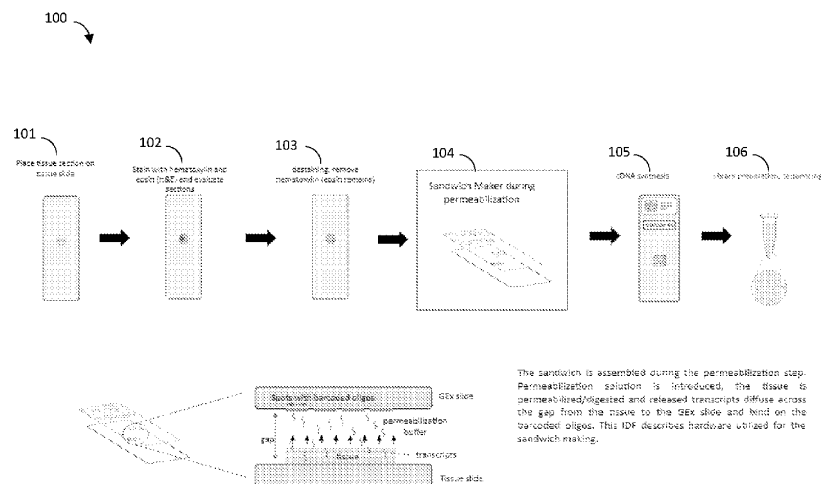


FIG. 1

(57) **Abstract:** A method for aligning a sample to an array is provided. An image of sample image of a sample can be received by a data processor. The sample image having a first resolution. An array image including an overlay of an array with the sample and an array fiducial can be received by the data processor. The array image having a second resolution lower than the first resolution of the sample image. The sample image can be registered to the array image by aligning the sample image and the array image. An aligned image can be generated based on the registering. The aligned image can include an overlay of the sample image with the array. The aligned image can be provided by the data processor. A method for detecting fiducials associated with an array is provided. Systems and non-transitory computer readable mediums performing the method are also provided.

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