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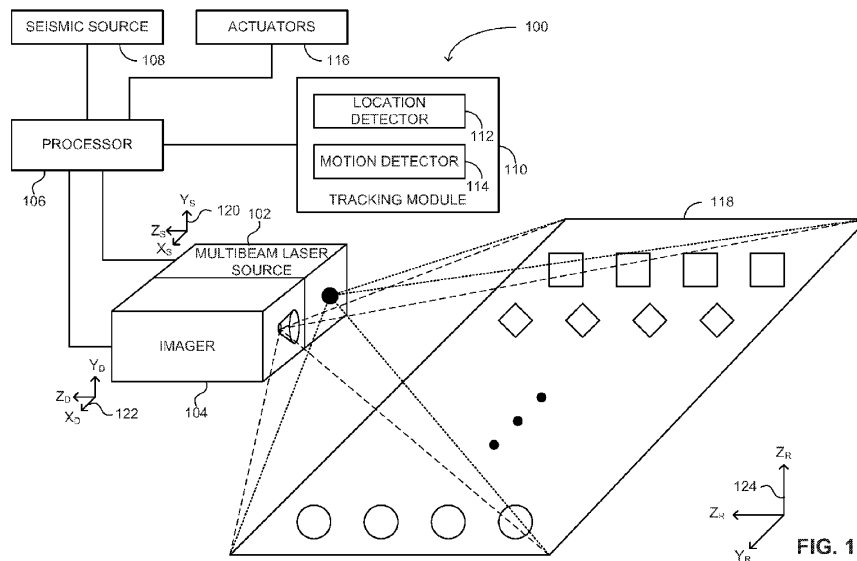


FIG. 1

(57) Abstract: An optical seismic surveying system including, a multibeam laser source including a plurality of laser-sources, a Diffractive-Optical-Element (DOE), an imager and a processor. The laser-sources direct respective laser-beams toward a single common focal point. The DOE is located at a single common focal point and configured to split each laser-beam into a plurality of laser-beams, toward an instantaneous area of interest. The laser-beams impinging on the instantaneous area of interest produce a laser spot assemblage including a plurality of laser spots. The imager acquires a plurality of defocused images of speckle patterns produced by diffused reflections of the laser spots. The speckle pattern correspond to a respective laser spot and thus to a respective sensing point in the instantaneous area of interest. The processor determines a relative displacement between corresponding speckle patterns in sequential pairs of images and determines a respective time-signal for each sensing point representing vibrations thereat.

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