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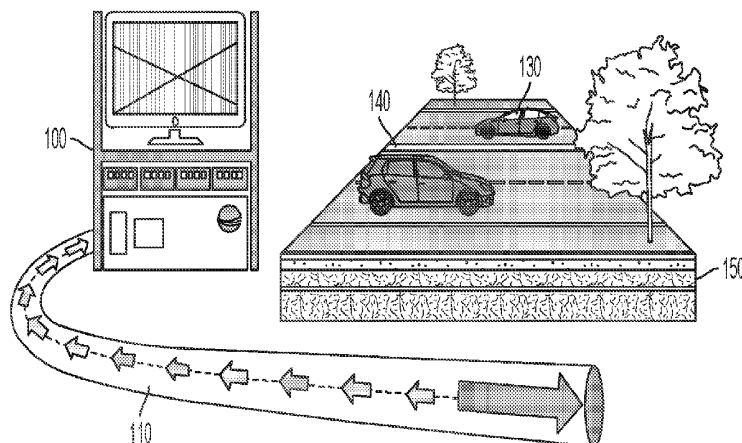


Fig. 1

(57) Abstract: A distributed fiber optic sensing (DFOS) system and method record optical data in one or more optical fibers, calculate physical parameters from the recorded optical data, and compute locations of vehicles passing above or beside the one or more optical fibers based on the DFOS data. A method of determining a force exerted by an object onto a surface under the object using at least one optical fiber located below or adjacent to the surface includes measuring DFOS data arising from strain in the at least one optical fiber responsive to the force, determining at least one relationship between the measured DFOS data and the force and processing the measured DFOS data and the at least one relationship to determine the force.

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