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(54) **Title:** METHOD AND SYSTEMS FOR COMPENSATING FOR A DEVIATION IN A PLURALITY OF WORKING POSES OF A MANIPULATOR OF AN AUTONOMOUS CHARGING DEVICE

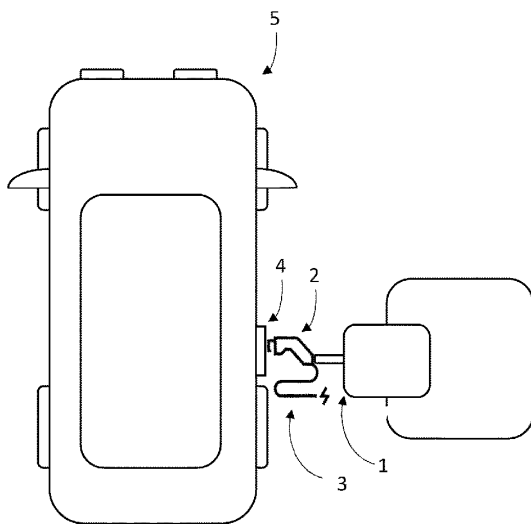


Fig 1

(57) **Abstract:** A method for minimizing deviations between a target and an actual pose of an autonomous charging device manipulator, adapted to connect a charging connector to an electric vehicle socket, comprising: obtaining a compensation function covering at least a part of a workspace of the manipulator, the compensation function utilizing a relationship between at least one motion command and a corresponding actual pose, and operating the manipulator based on the obtained compensation function such that the resulting actual pose minimally deviates from the target pose, wherein the relationship between at least one motion command and a corresponding actual pose is obtained by a method comprising an image acquisition device attached to a moving part of the manipulator to acquire an image containing a visible fiducial marker placed at a referential pose; instructing the manipulator to move to acquire an image of the fiducial marker; using the image to determine the relative pose of the fiducial marker with respect to the image acquisition device; computing the actual pose of the moving part of the manipulator using the referential pose and the determined relative pose of the fiducial marker with respect to the image acquisition device; and fitting a template function that relates the at least one motion command to the computed actual pose.

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