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(54) Title: MAGNETIC BEARINGS FOR FLYWHEEL ROTOR LEVITATION WITH RADIAL STABILIZATION

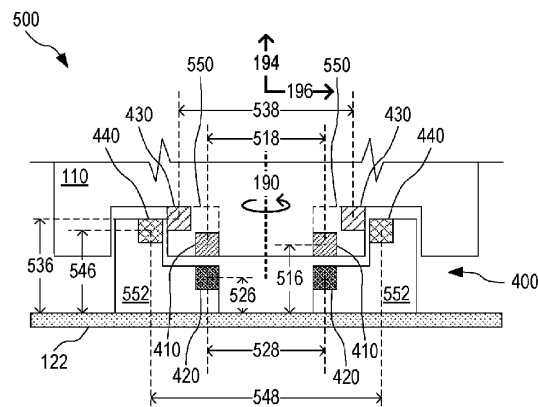


FIG. 5

(57) Abstract: A flywheel system includes a fixture including a bottom support, a rotor characterized by a gravitational load and configured to rotate above the bottom support about a rotation axis, and a bottom magnetic levitation bearing. The bottom magnetic levitation bearing includes (a) a ring of first magnets mechanically coupled with a bottom end of the rotor, (b) a ring of second magnets mechanically coupled to the bottom support, beneath the ring of first magnets, the second magnets repelling the first magnets to magnetically support at least a portion of the gravitational load above the bottom support, (c) a ring of third magnets mechanically coupled with the bottom end, and (d) a ring of fourth magnets mechanically coupled to the bottom support radially outwards from the ring of third magnets, the fourth magnets repelling the third magnets to at least reduce radial decentering of the rotor relative to the fixture.

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