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(54) **GROUND FAULT CIRCUIT INTERRUPTER (GFCI) DEVICES, SYSTEMS, AND METHODS**

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(57) **ABSTRACT**

A ground fault circuit interrupter (GFCI) can include a current transformer (CT) comprising a single core, a first winding wound around the single core, and a second winding wound around the single core. The GFCI can include a ground fault (GF) detection module operatively connected to the first winding to receive signals from the first winding and configured to determine whether a line-to-ground fault exists. The GFCI can also include a GN stimulus operatively connected to the second winding to provide a GN stimulus signal to the second winding. The GFCI can also include a grounded neutral (GN) detection module operatively connected to second winding and configured to receive signals from the second winding to determine whether a neutral-to-ground fault exists.

