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**Suchoff**

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(54) **METHODS AND APPARATUS FOR SENSING GROUND LEAKAGE AND AUTOMATED SELF TESTING THEREOF**

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This patent is subject to a terminal disclaimer.

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(51) **Int. Cl.**

| | |
|---|---|
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| ***H02H 3/28*** | (2006.01) |
| ***G01R 31/42*** | (2006.01) |
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| ***G01R 19/165*** | (2006.01) |
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(52) **U.S. Cl.**

CPC ..... ***G01R 31/42*** (2013.01); ***G01R 19/165*** (2013.01); ***G01R 31/025*** (2013.01); ***H02H 3/28*** (2013.01); ***H02H 3/335*** (2013.01); *G01R 35/00* (2013.01)

(58) **Field of Classification Search**

CPC .... G01R 31/025; G01R 31/08; G01R 31/085; G01R 31/086; G01R 31/14; G01R 31/28; G01R 31/2801; G01R 31/281; G01R 31/2817; H02H 3/08; H02H 3/10; H02H 3/16; H02H 3/162; H02H 3/165; H02H 3/20; H02H 3/28; H02H 3/305; H02H 3/325; H02H 3/335

USPC ..... 324/500, 509, 512, 522, 528, 531, 541, 324/551, 555, 713; 361/42, 63, 65, 88, 361/93.1; 702/58, 59, 185

See application file for complete search history.

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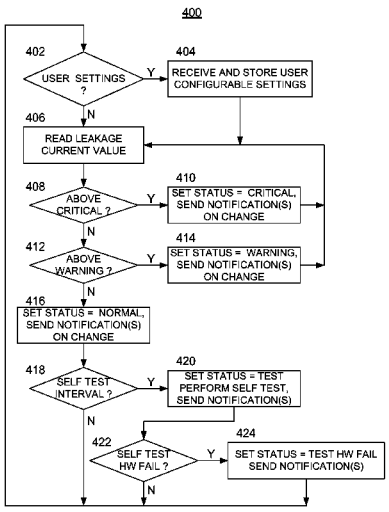
(57) **ABSTRACT**

Methods and apparatus provide for: measuring leakage current from a source of AC power, which provides power to at least one load circuit; and comparing the measured leakage current values against one or more predetermined thresholds to establish status therefor; and automatically performing self tests to determine whether the leakage current sensing and comparing operations are operative.

**12 Claims, 5 Drawing Sheets**