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# United States Patent [19]

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Wilson

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## [54] PASSIVE INTRUSION DETECTION SYSTEM

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### [57] ABSTRACT

[21] Appl. No.: 649,862

An intrusion detection system. An RF energy source transmits energy into a transmission cable that has a characteristic impedance subject to change by deformation of the cable. The cable is buried along a path that corresponds to a perimeter to be monitored. When an intruder places weight in the vicinity of the cable, the cable deforms and changes its characteristic impedance. Consequently a portion of energy transmitted into the cable reflects back where time-domain or frequency-domain reflectometry apparatus uses the reflected energy to identify the location of the intrusion along the cable and provide other characteristics of the intruder.

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[58] Field of Search ..... 340/561, 562, 340/552, 566

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22 Claims, 7 Drawing Sheets

