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United States Patent [19]

Vetorino et al.

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[54] **RENEWABLE ENERGY FLASHLIGHT**

[75] Inventors: **Steven Robert Vetorino**, Fort Lupton; **James Victor Platt**, Arvada; **Douglass Anderson Springer**, Aurora, all of Colo.

[73] Assignee: **Applied Innovative Technologies, Incorporated**, Aurora, Colo.

[21] Appl. No.: **09/022,103**

[22] Filed: **Feb. 11, 1998**

Related U.S. Application Data

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[51] **Int. Cl.**[6] **F21L 9/00**

[52] **U.S. Cl.** **362/192**; 362/205

[58] **Field of Search** 362/202, 205, 362/192, 193

[56] **References Cited**

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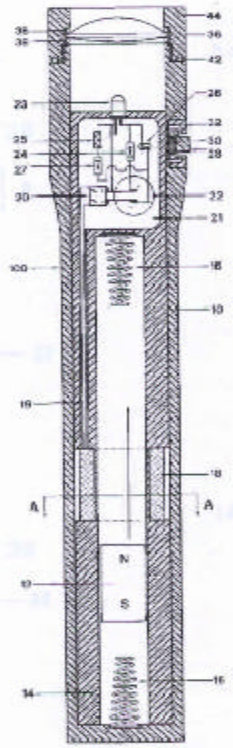
[57] **ABSTRACT**

A renewable energy flashlight comprises a housing and a barrel located within the housing. The barrel has a wire coil wrapped around it, between the barrel and the housing. A magnet disposed within the barrel oscillates within the barrel when the barrel is shaken, generating an alternating current in the coil. Two springs at either end of the barrel cause the magnet to recoil when the magnet strikes the springs. An electronics assembly located within the housing includes a capacitor for storing charge, a rectifier connected to the capacitor, and means for conducting current flowing in the coil to the rectifier, to provide rectified current to the capacitor and charge the capacitor. A light emitting diode (LED) is connected to the capacitor by means of a switch, so the LED lights up when the switch is switched on.

21 Claims, 4 Drawing Sheets



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(54) **RENEWABLE ENERGY FLASHLIGHT**

(75) Inventors: **Steven Robert Vetorino**, Fort Lupton; **James Victor Platt**, Lafayette; **Douglass Anderson Springer**, Aurora, all of CO (US)

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(52) **U.S. Cl.** **362/192**; 362/205
(58) **Field of Search** 362/192, 193, 362/202, 205

(56) **References Cited**

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(57) **ABSTRACT**

A renewable energy flashlight comprises a housing and a barrel located within the housing. A wire coil wraps around the barrel, between the barrel and the housing. A magnet oscillates within the barrel when the flashlight is shaken, generating an alternating current in the coil. Two springs at either end of the barrel cause the magnet to recoil when the magnet strikes the springs. As an alternative, rebound magnets oriented to repel the charging magnet may be installed within the barrel at either end, to cause the magnet to recoil from the ends. An electronics assembly within the housing includes a capacitor for storing charge, a rectifier connected to the capacitor, and means for conducting current flowing in the coil to the rectifier, to charge the capacitor. An LED is connected to the capacitor by means of a switch, and lights up when the switch is switched on.

21 Claims, 5 Drawing Sheets