



US006825620B2

(12) **United States Patent**
Kuennen et al.

(10) **Patent No.:** **US 6,825,620 B2**
(45) **Date of Patent:** **Nov. 30, 2004**

(54) **INDUCTIVELY COUPLED BALLAST CIRCUIT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 156 days.

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(21) Appl. No.: **10/246,155**

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(22) Filed: **Sep. 18, 2002**

(65) **Prior Publication Data**

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US 2003/0015479 A1 Jan. 23, 2003

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/175,095, filed on Jun. 18, 2002, now Pat. No. 6,673,250, which is a continuation-in-part of application No. 09/592,194, filed on Jun. 12, 2000, now Pat. No. 6,436,299.

(60) Provisional application No. 60/140,159, filed on Jun. 21, 1999, and provisional application No. 60/140,090, filed on Jun. 21, 1999.

(51) **Int. Cl.**⁷ **H05B 37/02**

(52) **U.S. Cl.** **315/224; 315/276; 315/283; 315/291**

(58) **Field of Search** 315/209 R, 219–220, 315/224–225, 244, 291, 302, 307, DIG. 7, 57, 62, 248, 276, 283

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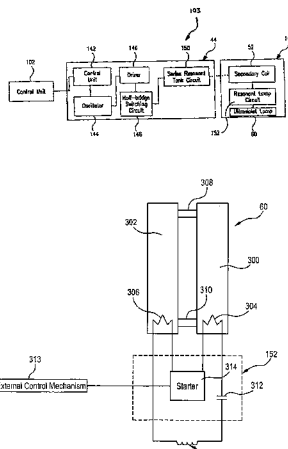
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(57) **ABSTRACT**

A ballast circuit is disclosed for inductively providing power to a load. The ballast circuit includes an oscillator, a driver, a switching circuit, a resonant tank circuit and a current sensing circuit. The current sensing circuit provides a current feedback signal to the oscillator that is representative of the current in the resonant tank circuit. The current feedback signal drives the frequency of the ballast circuit causing the ballast circuit to seek resonance. The ballast circuit preferably includes a current limit circuit that is inductively coupled to the resonant tank circuit. The current limit circuit disables the ballast circuit when the current in the ballast circuit exceeds a predetermined threshold or falls outside a predetermined range.

59 Claims, 15 Drawing Sheets



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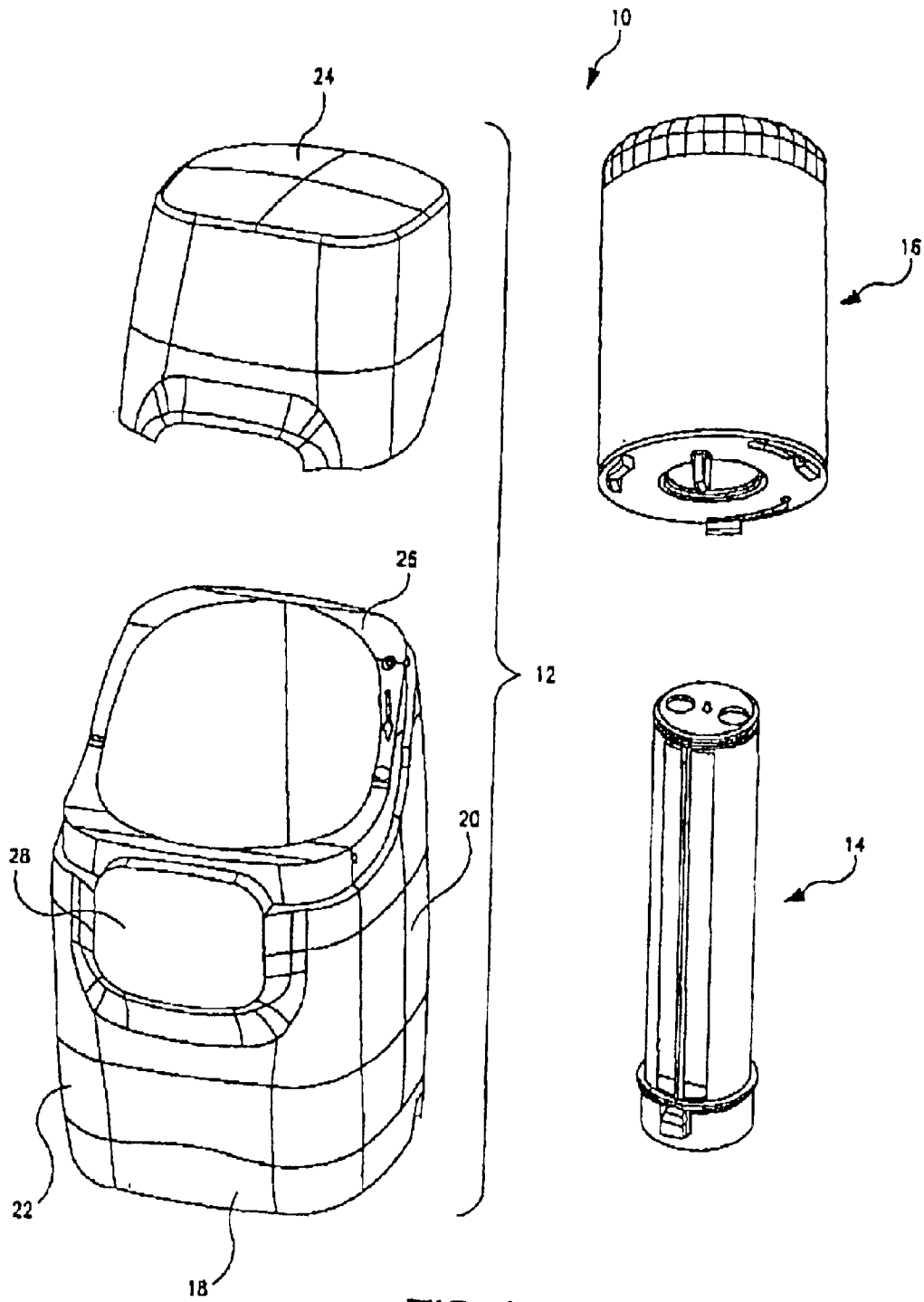


FIG. 1

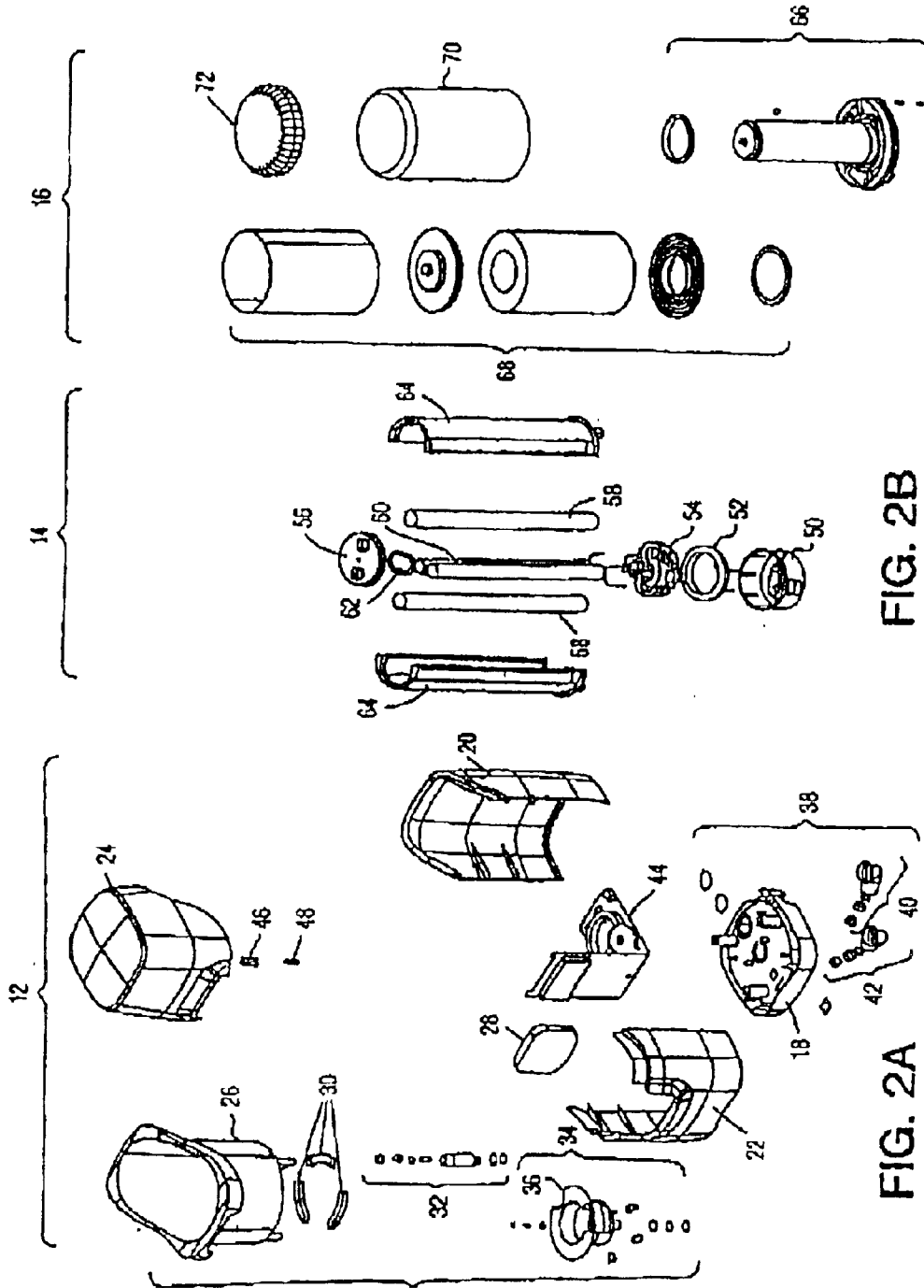


FIG. 2C

FIG. 2B

FIG. 2A

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