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**Lampotang et al.**

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(54) **METHOD AND APPARATUS FOR TRIGGERING AN EVENT AT A DESIRED POINT IN THE BREATHING CYCLE**

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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 0 days.

Ehman et al. (1994) "Magnetic Resonance Imaging with Respiratory Gating: Techniques and Advantages" AJR:143.

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(51) **Int. Cl.**<sup>7</sup> ..... **A61B 5/00**

(57) **ABSTRACT**

(52) **U.S. Cl.** ..... **600/427**; 600/428; 600/538; 600/539; 378/95; 128/202.13; 128/202.16

The subject invention pertains to a novel method and apparatus for improving the efficacy of a medical treatment or diagnostic procedure by coordinating such treatment or procedure with a patient's breathing cycle. In a specific embodiment, the subject invention pertains to a novel method of coordinating a chest x-ray with a patient's ventilatory cycle. In a specific example, this invention concerns a novel device for interfacing a ventilator and an x-ray machine to ensure that an x-ray chest image can be taken at peak insufflation of the patient. The subject invention also relates to other medical procedures including, but not limited to, cardiac output measurement, chest imaging, inhalation therapy, oxygen delivery, blood pressure measurement, and pulse oximeter optoplethysmograms. By coordinating certain medical treatments and diagnostic procedures with a patient's breathing cycle, the subject invention improves the quality of medical care received by the patient.

(58) **Field of Search** ..... 600/411, 413, 600/427, 428, 529, 534, 538, 539; 128/200.24, 202.13, 202.16; 378/98, 95, 117, 147

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**23 Claims, 5 Drawing Sheets**

