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Bergdahl et al.

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(54) **SCREENING APPARATUS, ROTOR, WING PACKAGE AND METHOD FOR MANUFACTURE**

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See application file for complete search history.

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(56) **References Cited**

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U.S. PATENT DOCUMENTS

2,752,828 A 7/1956 Sandison
2,975,899 A 3/1961 Cannon et al.

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(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

FOREIGN PATENT DOCUMENTS

EP 0205623 A1 12/1986
EP 0444051 A1 9/1991

(Continued)

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OTHER PUBLICATIONS

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(57) **ABSTRACT**

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Screening apparatus for screening pulp suspensions are provided. The screening apparatus includes a casing, a cylindrical screen member is arranged on the casing for dividing the pulp into accept and reject portions, an inlet for the pulp, an outlet for the accept, an outlet for the reject, a rotor with a rotor body, and at least one pulsator located on the inside of the screen, so that a screening chamber is formed between the rotor and the screen. The rotor is provided with a detachable pulsator package including at least one attachment ring attached to the rotor body, at least one support ring attached to or supported by the rotor body and the at least one pulsator attached to the at least one attachment ring and the at least one support ring.

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(58) **Field of Classification Search**
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18 Claims, 5 Drawing Sheets

