



US007601858B2

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

(10) **Patent No.:** **US 7,601,858 B2**  
(45) **Date of Patent:** **Oct. 13, 2009**

- (54) **METHOD OF PROCESSING ETHANOL BYPRODUCTS AND RELATED SUBSYSTEMS** 4,407,955 A 10/1983 Muller et al.  
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- (75) Inventors: **David Fred Cantrell**, Lakemont, GA (US); **David J. Winsness**, Alpharetta, GA (US)  
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- (73) Assignee: **GS Cleantech Corporation**, New York, NY (US)  
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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 578 days.  
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(21) Appl. No.: **11/122,859**

(22) Filed: **May 5, 2005**

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(65) **Prior Publication Data**

US 2006/0041152 A1 Feb. 23, 2006

**Related U.S. Application Data**

(60) Provisional application No. 60/602,050, filed on Aug. 17, 2004.

(51) **Int. Cl.**  
**CIIB 1/00** (2006.01)

(52) **U.S. Cl.** ..... **554/8**

(58) **Field of Classification Search** ..... **554/8**  
See application file for complete search history.

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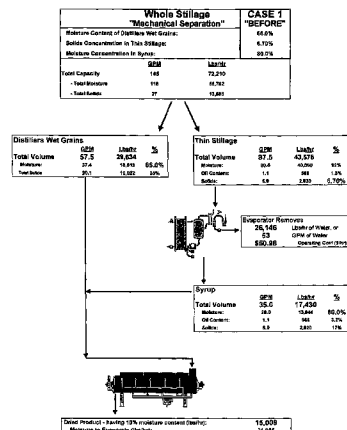
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(57) **ABSTRACT**

In one aspect of the invention, a method recovers oil from a concentrated byproduct, such as evaporated thin stillage formed during a dry milling process used for producing ethanol. The method includes forming a concentrate from the byproduct and recovering oil from the concentrate. The step of forming the concentrate may comprise evaporating the byproduct. Further, the step of separating the oil from the concentrate may comprise using a centrifuge and, in particular, a disk stack centrifuge. Other aspects of the invention include related methods and subsystems for recovering oil from thin stillage.

**16 Claims, 4 Drawing Sheets**



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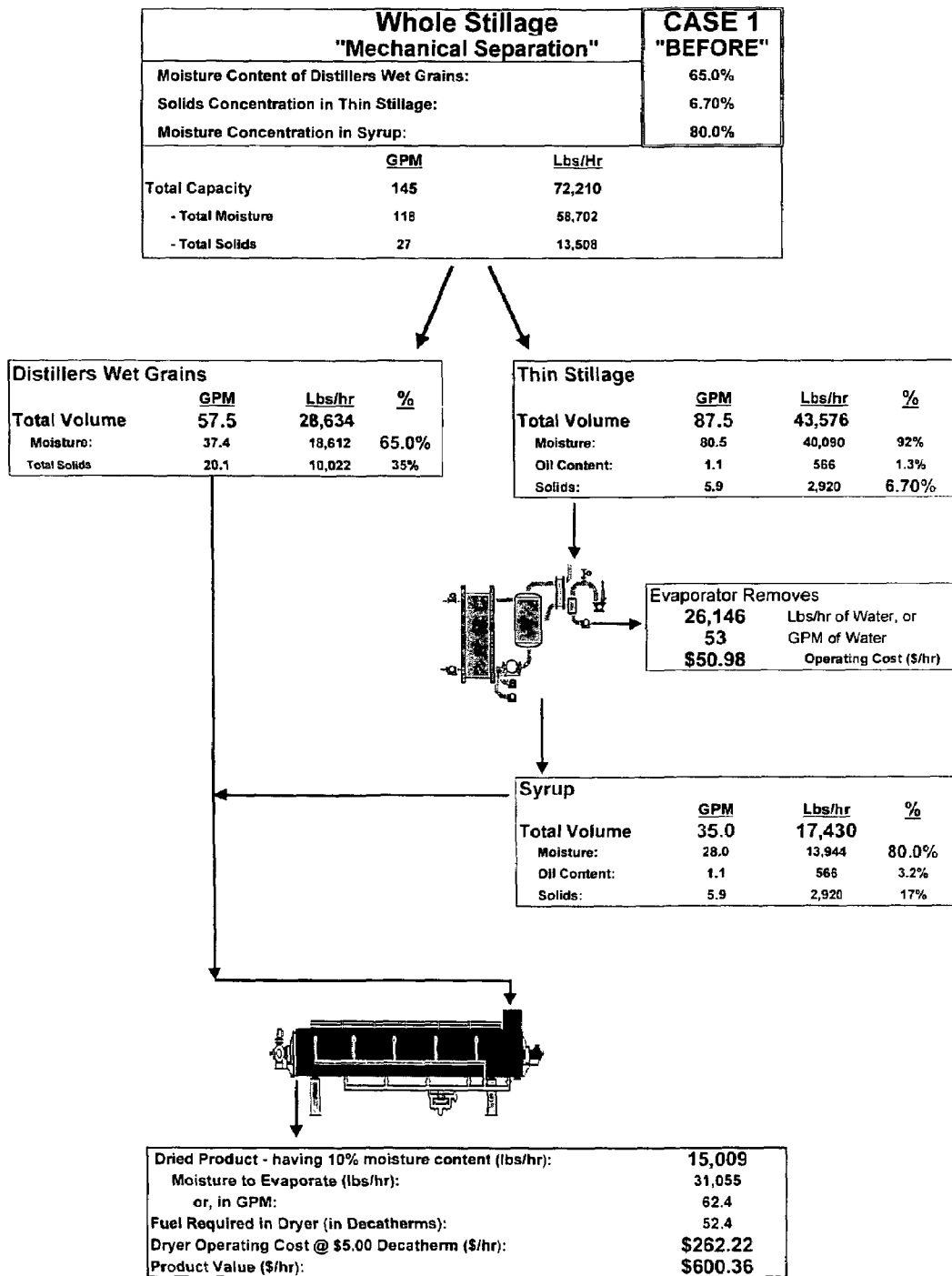


Fig. 1

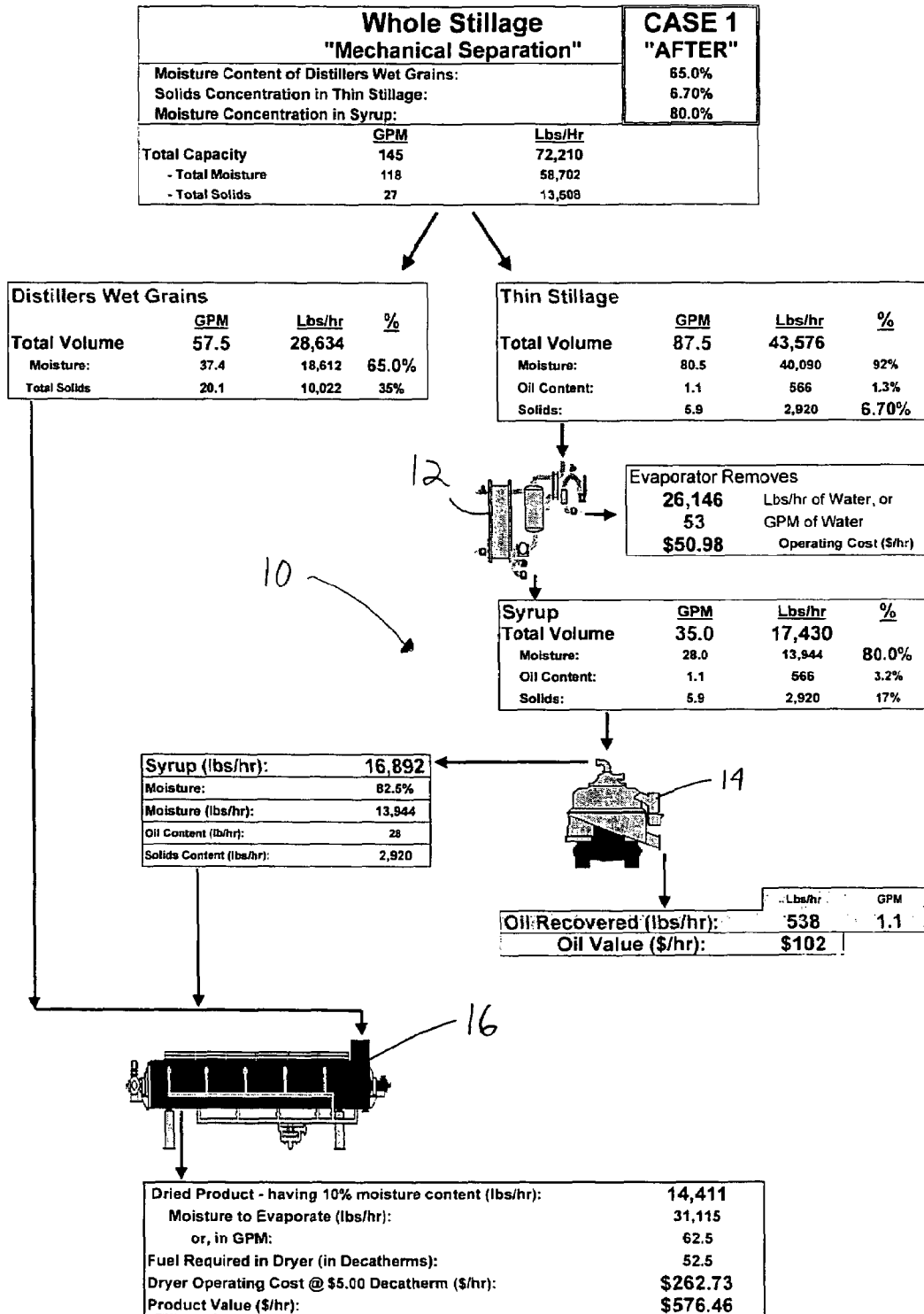


Fig. 2

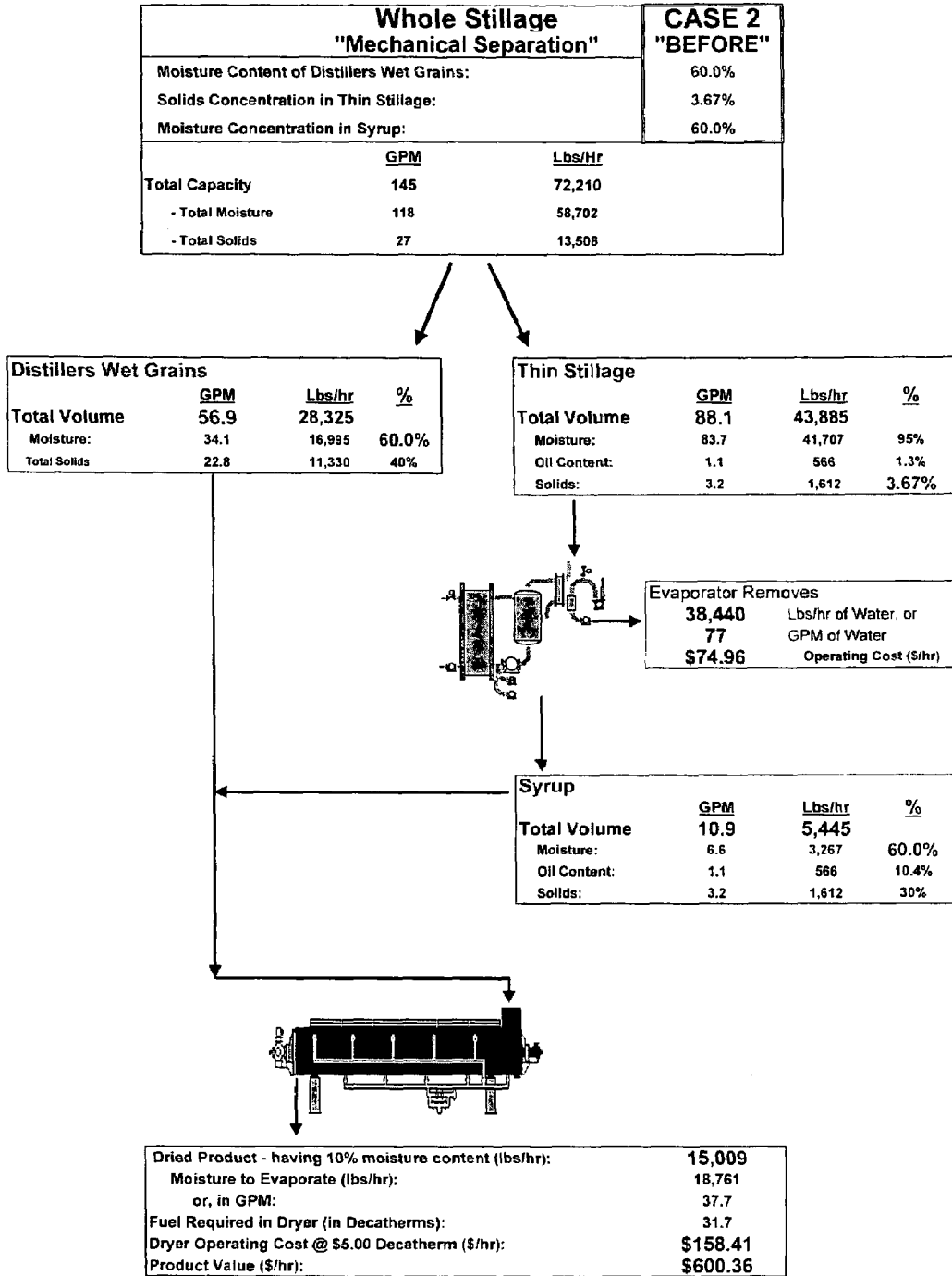


Fig. 3

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