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Brick et al.

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(54) **FLOW DIVIDER**

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(58) **Field of Classification Search** 418/13, 418/209, 210, 212, 213, 254, 263, 199
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

949,638 A *	2/1910	Stormer	418/212
3,930,763 A	1/1976	Rose		
4,009,573 A *	3/1977	Satz	418/13
4,299,546 A *	11/1981	Stout	418/212
5,037,283 A *	8/1991	Kapur et al.	418/133

5,256,043 A	10/1993	Rose
5,558,509 A	9/1996	Jimov et al.
5,720,603 A	2/1998	Miller et al.
5,758,501 A	6/1998	Jimov et al.
5,906,297 A	5/1999	Cole

FOREIGN PATENT DOCUMENTS

JP	63263284 A	* 10/1988
JP	01211684 A	* 8/1989

* cited by examiner

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(57) **ABSTRACT**

A flow divider for use with fluent materials, such as raw sausage. The flow divider is a combination of at least two housing bodies with chambers defined by elliptical cylindrical sidewalls. Hubs with transverse vanes have necked-down regions at one end that are rotatably mounted in a similarly-sized aperture in an endwall of each housing body. The vanes' tips follow the elliptical cylindrical sidewalls in the manner of a vane pump. Sausage is conveyed from a conventional pump into the inlet of the flow divider, and flows through passages into inlet cavities, one inlet cavity per chamber, through the sub-chambers formed by the space between the vanes, and outlet cavities, one outlet cavity per chamber. The amount of sausage that flows through each chamber is equal due to the driving linkage between the hubs of each housing body.

25 Claims, 6 Drawing Sheets

