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Masterson

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(54) **FUEL BURNING SYSTEM AND METHOD**

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(58) **Field of Classification Search**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,327,048	A	1/1920	Kinealy
2,622,017	A	2/1949	Bramhall et al.
3,428,409	A	2/1969	Summers
5,840,246	A	11/1998	Hammons et al.
6,371,756	B1	4/2002	Toohey
6,857,869	B1	2/2005	Sun
2003/0086815	A1	5/2003	Wesley
2006/0057521	A1	3/2006	Kubicek et al.
2007/0264603	A1	11/2007	Ruff

FOREIGN PATENT DOCUMENTS

WO	2009152502	A1	12/2009
WO	2009152504	A1	12/2009
WO	WO 2009/152502	*	12/2009

* cited by examiner

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(57) **ABSTRACT**

A method of preventing clogging of a reusable wick, a method of fueling a reusable wick, and a fuel burning system are provided. The fuel burning system has a melted fuel reservoir, a melting grate, and at least one wick. The melted fuel reservoir is configured to receive a solid fuel. The melting grate is located above at least a portion of the melted fuel reservoir so that fuel melted on the melting grate can be received into the melted fuel reservoir. The at least one wick has an at least partially hollow core forming a burn chamber extending above the melting grate. The wick is spaced from the reservoir so that melted fuel in the reservoir is spaced apart from a bottom of the wick.

21 Claims, 21 Drawing Sheets