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**Liu et al.**

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(54) **IMPINGEMENT COOLING OF CYLINDERS IN OPPOSED-PISTON ENGINES**

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See application file for complete search history.

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(57) **ABSTRACT**

A cylinder cooling construction includes a cylinder liner with a sidewall, exhaust and intake ports opening through the sidewall, a bore, and a plurality of feed channels that are formed with and extend along the sidewall from a central band of the cylinder toward the exhaust and intake ports. A sleeve covering the sidewall includes a plurality of impingement jet ports that are arranged in at least one sequence extending around the central band and that are in liquid communication with the plurality of feed channels. An annular member disposed between the liner and the sleeve reinforces the central band. The sleeve further includes an inside surface with spaced-apart annular recesses that with the sidewall define liquid coolant reservoirs in the vicinity of the ports that are in liquid communication with the feed channels. Channels through bridges of exhaust port have first ends in liquid communication with the coolant reservoir in the vicinity of the exhaust port and second ends that open through a portion of an exhaust end of the cylinder.

**5 Claims, 7 Drawing Sheets**

