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Hicks et al.

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(54) **PERFORATED MIXING PIPE WITH SWIRLER**

(56) **References Cited**

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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 155 days.

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(57) **ABSTRACT**

An aftertreatment system may include an exhaust pipe and a mixing pipe. The exhaust pipe may receive exhaust gas from an engine and may include a first portion defining a first longitudinal axis and a second portion defining a second longitudinal axis that is angled relative to the first axis. The mixing pipe may be disposed in the exhaust pipe and may include a tubular portion and a collar extending radially outward from the tubular portion. The tubular portion may include a plurality of openings and a plurality of deflectors. The plurality of openings may extend through inner and outer diametrical surfaces of the tubular portion. Each of the plurality of deflectors may be disposed adjacent a corresponding one of the plurality of openings.

(52) **U.S. Cl.**
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18 Claims, 5 Drawing Sheets

