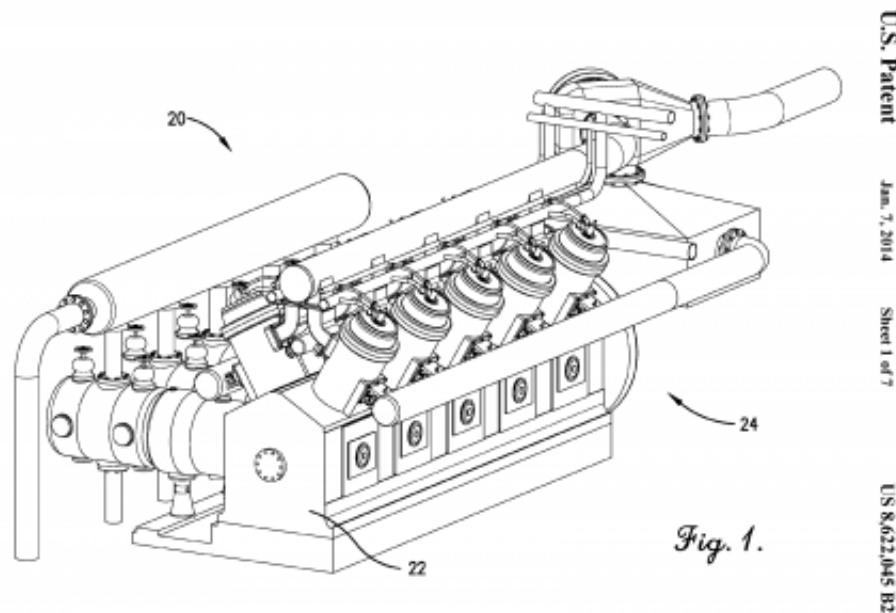


Patented airflow system decreases pollutants from large piston engines

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This is a figure of the air control system from the patent paperwork. Credit: Kansas State University

A patent was recently issued to Kansas State University for a system that controls the airflow to pistons in reciprocating internal combustion engines—engines powered by pistons.

The system enables large-bore, multi-cylinder engines used in trains, pipelines, backup diesel generators and other fields to run efficiently while producing lower levels of [harmful emissions](#) than they do currently.

The patent, "Active Air Control," was issued to the Kansas State University Research Foundation, a nonprofit corporation responsible for managing technology transfer activities at the university. The [patent](#) is for research by former faculty member Kirby Chapman and doctoral graduate Diana Grauer.

The Kansas State University-developed system uses an airflow sensor to measure and control the airflow rate into each piston in real time. Algorithms adjust the [airflow](#) accordingly and equalize the rate in multiple cylinders at the same time. This reduces the levels of nitrogen oxides produced during combustion in the engine.

The air control system offers a low-cost method to control and lower the production of [nitrogen oxides](#) and helps legacy engines meet compliance with EPA 2011 regulations. The system also was designed to fit various engine systems.

Provided by Kansas State University

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