TANK SYSTEM FOR METHANOL FUELS WITH FIRE PROTECTION DEVICE

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BACKGROUND

In the automotive industry, rising oil prices and stricter emission standards are leading to a trend towards alternative drive systems that are not based on fossil fuels. Methanol can be regarded as a suitable substitute product. Similar to petrol and diesel engines, methanol is used as an energy source in a tank system.

PROBLEM

In addition to functionality, the safety and controllability of this technology play a decisive role. According to the German Insurance Association, there are about 15,000 fires on German roads every year. One of the main causes of vehicle fires is damage to the tank and fuel line, which usually leads to fuel leakage. The present invention aims to reduce this danger for vehicle fires.

SOLUTION

The innovative potential of the invention described here lies in the fact that it represents a method/device which can be effectively used to prevent vehicle fires.

The fire protection system reacts to a signal from the airbag system and triggers a release of water into the fuel tank by means of a return spring. Methanol and water are then mixed in the fuel tank. The resulting product with its material properties falls below the ignition limit of the system, thus preventing a possible fire. The extinguishing of the fire or its origin is therefore realized automatically and without the active use of external aids. Water as extinguishing agent is not used here in the conventional sense to fight flame fronts, but specifically to create a non-ignitable mixture in methanol-based tank systems.

In addition to motor vehicles, the invention could also be useful for pieces of construction equipment or agricultural machinery.
ADVANTAGES

- fire protection acting at the source (tank)
- low technical effort
- non-destructive restoration of the functionality of the tank system after the fire protection device has become effective (if the tank itself hasn't been damaged)

SCOPE OF APPLICATION

Electrical Engineering, Computer Science

SERVICE

The PCT and German patent application is pending. We are looking for companies for commercial use as well as for development cooperations.