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INVENTION

Current U.S. Patents

A fire fighting unit with tank-like bulldozers operated by remote control can fight fires closer to the blaze than is safe for human firemen—By William McCann

➤ A FIRE TRUCK complete with remote-control fire-fighting bulldozers and tank-tires that carry chemicals for putting out the fire was granted a patent by the U.S. Patent Office.

A large tractor-truck hauls one or more trailers behind it—like a railroad engine pulling its cars. If the blaze is a big one, additional trailers, carrying fire-fighting equipment, can be hooked onto the train.

Two tank-like bulldozers, called "fire cats," sit on a raised platform in front of the truck. When the truck reaches the fire, the platform drops to ground level and the battery-powered "fire cats" dart toward the blaze, squirting their arsenal of fire-fighting chemicals. These mechanical firemen can creep in close to a blaze, where it would be difficult and dangerous for human fire fighters to go.

The giant tires of the tractor-truck store fire extinguishing chemicals. This heavy load on the tires, therefore, gives the truck a low center of gravity, making it stable and able to travel over even extremely rough terrain.

Phil F. Cummins, a fire safety expert from Fort Worth, Texas, earned patent 3,169,581 for the future fire fighter. He assigned patent rights to General Dynamics Corporation, San Diego, Calif.

Called the ACE-system (for air crash emergency), the fire truck has been designed primarily for use at airports but can easily be adapted for regular community

fire equipment, a General Dynamics official said.

This type of system can grow with an airport or community, the official said. As the airport or town gets larger, more trailers are simply added to the system.

Full-scale mock-ups of the truck have already been built and have proved that the system can work. General Dynamics is now trying to license one of the fire truck manufacturers to build it. Advances in fire-fighting equipment in present day airports have not kept up with advances in aircraft, reports Mr. Cummins, the ACE inventor. Newer, well built airplanes and fuels with much hotter burning flames often make it difficult to get passengers and crew out of burning planes, he said.

The ACE system has a boom, with a closed cabin on its tip, resting on the tractor-truck. If a plane should crash and catch fire on a runway, the truck can extend the boom out over the fallen plane. Tools stored in the closed cabin can then be used to cut a hole in the top of the plane to free passengers and crew.

'Eyes' for the Blind

A pocketbook-sized scanner can prevent a blind person from stumbling into obstacles or falling down steps.

The device, which earned patent 3,170,151 for Alexander Roth, Ft. Walton Beach, Fla., guides its blind user by light beams. A beam aimed toward the ground and another aimed toward the ceiling cause a signal from the device when the pathway is clear. If there is obstacle, however, the signal stops.

For a list of registered patent attorneys and agents and other Patent Office information write the Commissioner of Patents, Washington, D.C. 20231, or call 202-967-4058 for specific information.

• Science News Letter, 87:158 March 6, 1965

Do You Know?

Hypergolic fuels burn on contact with each other, eliminating the need for an electrical ignition system.

Eye flutter, dizziness and nausea can result from prolonged exposure to *sounds* above the 142-decibel level, the pain threshold.

A *flagellum*, the part of a bacterium that enables it to move, has been taken apart, broken down into molecules of protein and reassembled in a test tube.

• Science News Letter, 87:158 March 6, 1965

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