

cient speed to sustain the torpedo in air, the launching wire would break and the plane take to the sky. U. S. Patent 1,623,121 was granted for the aerial torpedo on April 5, 1927.

It seems that the only new thing that

the Germans have done with their robot bombs is to replace the electric motor and gasoline motor with jet propulsion, which, by the way, was first developed by an Englishman.

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ties of better synthetics within two to four years.

The current tire shortage will be offset, so far as commercial vehicle needs are concerned, by growing production of increasingly better synthetic tires which will give good service but which will demand better care, curtailed vehicle operating speeds in warm weather, and reduced loads, Mr. Hale predicted.

Science News Letter, July 8, 1944

ENGINEERING

Fast Vulcanizing

A new electronic device for tire-repair does the process in only 10 minutes in combat areas. Expected to make postwar tires give 100,000 miles of service.

► A NEW tire-vulcanizing device employing electronic principles has been developed which makes it possible to complete major tire repairs in 10 minutes in combat zones.

This device, which promises to aid in extending the service life of postwar tires to 100,000 miles, was announced by Lt. Col. C. W. Vogt, Chief, Technical Staff of Supply, Transportation Corps, U. S. Army, at the meeting of the Society of Automotive Engineers in Philadelphia.

The 500-pound mobile military unit, designed to effect repairs at any time and replace Army tire-repair equipment weighing tons and taking hours to operate, was developed after reports from overseas revealed the existing equipment was too slow and unsatisfactory.

The device consists of a press ram equipped with an electrode connected with a high-frequency generator, and a press frame. The electronic energy develops internal heat within the tire, similar to the heat created by short-wave dia-

thermy equipment used in medicine. Spot patches can be made in a matter of minutes.

The ram and frame, fitted with cloth bags, which adjust themselves under pressure to the contour of the tire, eliminate the use of heavy, costly molds, and enable repairs to be made on any size tire. The use of internal heat obviates present vulcanizing hazards such as destructive over-heating of the rest of the tire when making a patch.

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Better Synthetic Tires

► WARTIME manufacturing methods promise to produce synthetic rubber tires in the postwar world that are low in cost, and of better quality than those which are being made today, J. E. Hale, of the Firestone Tire and Rubber Company, told the meeting.

He expressed the opinion that engineering and chemistry will develop the use of synthetic rubber, and new varie-

Engine Sludge Prevented

► FOUR STEPS to avoid dangers resulting from the formation of hot engine sludge in motor vehicles were recommended by H. C. Mougey, of Research Laboratories Division, General Motors Corporation, at the national transportation and maintenance meeting of the Society of Automotive Engineers.

The four steps include the application of oil filters to remove the sludge as it forms; adequate temperature control to prevent excessive heat which causes oil oxidation and sludge formation, without permitting engine temperatures to get so low as to form low-heat sludge; frequent crankcase draining to prevent sludge accumulations from becoming too large; and the use of high quality, heavy duty oils that have good resistance to oxidation.

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FINAL DESTRUCTION—An instant after the explosion, the right tip of the Nazi plane is visible (left); and then a few moments later, nothing is left but a flaming ball of fire plunging to the earth.

