

AUTOMOBILES and STATIC ELECTRICITY

By J. H. W. KERSTON

Do you remember that crackling sound when drawing a hard-rubber comb through your hair, and the hair literally "standing on edge"; or when dragging your feet over a deep-pile rug on a dry, wintry day? What, then, is the explanation of all this?

It is caused by the generation of static electricity on a small scale. The same thing happens on a larger scale, and much more effectively, whenever a glass rod is briskly rubbed against silk, or when rotating rubber tires are brought in close contact with a road surface. And the greater the friction, the "hotter" the spark.

These electrical phenomena are caused by the discharge and equalization of different voltages between different materials. It is not unlike those huge electric sparks — in the form of lightning — that pass from one cloud to another, or to the earth. Now, let us consider what happens with cars and trucks.

As the result of the most exhaustive tests and studies, it has been proven that charges of static electricity amounting to 12,000 volts or more may be found in automobiles and trucks driving along the nation's highways and on city streets.

Possible danger from this source, in starting a fire of gasoline vapor if a spark is discharged, is indicated;

even after a stop of 20 minutes or more there is sometimes no apparent decrease in the accumulated voltage. Many hours may have to pass before the charge is completely dissipated from a stopped car.

It has also been found that a "drag chain," such as is commonly used on the rear of gasoline trucks, and which supposedly prevents a dangerous charge from accumulating, has no noticeable effect because the pavement is not grounded.

The charge comes, apparently, from the transfer of electrons in two materials which are "in contact," but are actually separated by a millionth of an inch or less. This occurs between the tires and the road surface, as well as between shoes and a heavy carpet, when one's body can accumulate a charge sufficient to make a sizeable spark when a finger is suddenly brought near a grounded object. In the latter instance, a charge of as high as 10,000 volts may be accumulated.

Voltages up to 75,000 have been recorded with gasoline and other liquids passing through hose and pipelines, creating a constant source of potential danger.

The friction of rubbing does not produce the charge, but merely establishes more extensive contact between the two materials.



The American Mercury's List

- Animal Farm*, by George Orwell, \$1.75. Harcourt Brace & Co., Inc., 383 Madison Avenue, New York.
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- Asia Aflame: Communism in the East*, by Van Der Vlugt, \$6.00. Devin-Adair Co., 23 East 26th Street, New York.
- Brain-Washing in Red China*, by Edward Hunter, \$3.75. Vanguard Press, Inc., 424 Madison Avenue, New York.
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- Claims of Sociology, The*, by A. H. Hobbs, \$2.75. Stackpole, Telegraph Press Building, Harrisburg, Pa.
- Communism and Christ*, by Charles Lowry, \$1.75 (paper), \$2.75 (cloth). Morehouse-Gorham Co., Inc., 14 East 41st Street, New York.
- Communist Trail in America, The*, by Jacob Spolansky, \$3.50. Macmillan Company, 60 Fifth Avenue, New York.
- Communism Versus the Negro*, by William A. Nolan, \$3.50. Henry Regnery Company, 20 West Jackson Boulevard, Chicago 4, Ill.
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