Powdermills Encyclopedia Article

Powdermills

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The mechanized manufacture of gunpowder first began about 1435 near Nuremberg, Germany. Until that time the primary ingredients of gunpowder (charcoal, sulfur, and potassium nitrate) were mixed dry and crushed by hand, often during the midst of war. The performance of gunpowder on the battlefield was by no means predictable, and accidents or misfires regularly occurred due to wet powder, too much powder, too tightly compacted powder, or poorly mixed powder.

Technology was greatly improved, however, when it was discovered that by moistening the primary substances, cakes could be formed, dried, and then broken so that grains of differing shapes and sizes would result. This technique was developed in the controlled environment of the powdermill. Not only did the new process reduce the possibility of accidental explosion while mixing, it also helped ensure that proper combustion and propulsion occurred when the powder was packed into guns or cannons and fired.

Through the centuries, the manufacture of gunpowder has become a highly systematized operation. One of the most important developments in production was the added step of glazing, in which the powder is tumbled in large cylinders to remove rough edges. Graphite, a versatile type of carbon, is added at this time to ensure that the individual grains are perfectly sealed and moisture resistant. The grains are then graded by size and repackaged; occasionally they are formed into prisms. The most important gunpowder manufacturer in the United States is E. I. du Pont de Nemours & Company, which began operations in 1802 in Wilmington, Delaware, under the guidance of French-born Eleuthère-Irénée du Pont (1771-1834). Now, a greatly diversified corporate giant, the Du Pont Company traces its fortunes to its ability to supply, both cheaply and efficiently, gunpowder in vast quantities for the purposes of mining and war.

Among important discoveries made by the company during the nineteenth century were soda powder, used for blasting, and cocoa powder, used for added propulsion in large caliber guns. During World War I, Du Pont served as a key supplier of powder, bombs, and other munitions for the Allied forces and also conducted extremely important chemical research. Today the name Du Pont is most often associated with the synthetic material nylon, first developed during the 1930s.