

MANY USES OF EXPLOSIVES

Smithsonian Institute Issues Interesting Bulletin on Making of Munitions.

BIG FACTOR IN WAR AND PEACE

WASHINGTON, Sept. 30.—While several million pounds of powder are being burned weekly on the battle fields of Europe, and destruction is rife on the American manufacture of the same, an article on explosives recently issued by the Smithsonian Institution gives much timely information on the subject.

The paper is written by Major Edward F. O'Hern of the Ordnance department, United States army, and deals with the importance of the so-called explosives and the increasing extent of their use and production, as well as their composition, uses, method of employment, and the results accomplished.

"An explosive," says Major O'Hern, "is a substance in which the molecules are made up of a number of atoms or units rather loosely bound together in an unstable condition, ready to seek new and simpler combinations upon the furnishing of a sufficient motive force to start the operation. This is usually supplied through a primer ignited by a slow-burning fuse, or by a wire heated by an electric current. When started, the heat and shock developed will cause a continuation of the action throughout the mass of the explosive. The enormous power that can thus be developed from a comparatively small quantity of material is indicated by the thousands of fragments into which a twelve-inch armor-piercing projectile was broken by the detonation of a bursting charge about 1/16 per cent of its weight."

Three Classes of Explosives. The author divides explosives into three classes, known as low explosives; detonating explosives; or high explosives; and detonations or fulminates. For all classes the effect of the explosion is dependent upon the quantity of gas and heat developed per unit of weight and volume of the explosive, the rapidity of the reaction, and the character of the confinement, if any, given the explosive charge. The rapidity of reaction varies greatly with different explosive substances and with the manner in which the explosion is started.

Black gunpowder, smokeless powder and black blasting powders are known as low explosives, for certain of which, such as smokeless powder, the explosion does not differ in principle from the burning of a piece of wood or other combustible. This combustion is very rapid, but is a surface action proceeding from layer to layer until the grain is consumed. Such materials are known as low or progressive explosives, although the total power developed through the combustion of a unit weight may be very great and would be destructive unless properly controlled.

High Power Explosives. In high explosives such as dynamite, nitroglycerin, gun cotton, some blasting powders, and most of the "permissible explosives" approved by the United States Bureau of Mines for use in mines where the explosion is liable to occur, the progress of the explosive reaction is not by burning from layer to layer, but the breaking up of the initial molecules gives rise to an explosive wave which is transmitted with great velocity in all directions throughout the mass and causes its almost instantaneous conversion into gas. The velocity of propagation of the detonating wave has been determined for some materials to be more than 30,000 feet per second, or approximately four miles per second; this form of material is used in shells and for bursting purposes. The progressive emission of a gas from a low explosive such as burning gunpowder, produces a pushing effect upon a projectile, whereas the sudden conversion of an equal weight of material into gas, as would happen with a high explosive such as dynamite or nitroglycerin, would develop such high pressure and shattering effect as to rupture the gun.

The action of fulminates is much more brusque and powerful than that of the high explosives. Since they can be detonated by shock or the application of heat, they are used in primers and fuses to start action in both low and high explosives. One of the most important fulminates is fulminate of mercury, which produces a pressure of about 4,000 atmospheres.

Big Factor in History. At no time in the history of the world have explosives played such a mighty part in deciding the destiny of nations as they are playing today in the prosecution of the European war. Their extensive use in the mighty engines of destruction such as the submarine mine, the torpedo and in projectiles thrown from cannon to great distances with marvellous accuracy, is resulting in loss of life and destruction of property on an unprecedented scale.

Beginning with black powder, the earliest record of which is actual war was used in the fourteenth century, the author follows the development of powder through its early stages of brown powder to the two principal forms of smokeless powder for military purposes, nitrocellulose and nitroglycerin, stating that the use is quite evenly divided; the United States army and navy, the French army and navy, and the German army using the former, and the British army and navy and the German navy using the latter. He then gives much detailed information concerning the manufacture, life, source of supply and tests of smokeless powder manufactured from nitrocellulose or gun cotton. Following which, subjects relating to life of guns, bursting charges for projectiles, armor-piercing projectiles, high explosive shells, shrapnel, fuses, aeroplane bombs, means of igniting explosives, mines, torpedoes and

Caught Second Game for Phillies



EDWARD BURNS

Pat Moran decided to use Burns behind the bat in the second game of the world's series, to catch for Mayer. Killifer, the first string catcher, is not quite up to

form, owing to a recent injury. Burns is a good receiver and has worked in sixty-four games this season. His batting average is .340, and his fielding average is .960. He bats and throws right handed.

the storage and shipment of explosives in the United States are discussed.

BULGARS READY TO MAKE FLANK RAID ON SERBIA

(Continued from Page One.) The offensive of yesterday against the positions of the allies near Loos were very heavy.

This information was given out by the French war office this afternoon. Other violent attacks on the part of the Germans southeast of Neuville-St. Vaast were completely repulsed. All the French advances of recent date have been maintained.

There has been fairly spirited cannonading in the sector of Lisians as well as at Quehenveres and Nouvron.

A German counter attack last night at the Novarin farm in the Champagne district was checked by the French.

To the southwest of Tathure there has been a violent bombardment attended by the use of suffocating shells.

In the Argonne French batteries put an end to German artillery fire in the sector of St. Thomas.

In the Lorraine district several German reconnaissance have been completely repulsed.

SUES TWO SHERIFFS FOR TEN THOUSAND DOLLARS

MASON CITY, Ia., Oct. 9.—(Special.)—J. H. Anderson wants \$10,000 from Sheriff Joe Gill of Osceola county and Sheriff Max R. Gehrk of Hardin county. As the story reaches here, about a year ago a young woman of Hardin county accused a young man by the name of Anderson of being the father of her child. This Anderson disappeared, as it seems, and later on J. H. Anderson, a brakeman on the Rock Island, with his home at Sibley, was located and, thinking he was the man, he was taken into custody by Sheriff Gill and he was put in jail. When Anderson was taken to Hardin county and confronted the young woman she said that he was not the man. Anderson

felt that an injustice had been done him and he has brought suit jointly against these sheriffs for \$10,000.

DRUNKARD SHOUTS OUT LOUD AT TAB

(Continued from Page One.) who were at the meeting were between 5 and 15 years of age.

Children Are Interested. They paid good attention to the sermon which was a plea for children to become Christians while they are still of tender years. "Billy" used the clay and the brick as a simile to show how habits formed in early life are kept through the later years.

With anecdotes and impersonations of bad boys and good boys and girls he kept the youngsters interested and often brought the childish laughter to their lips.

Paulah Newman, 223 U street, South Side, and Beale Rhyno, 305 Y street, South Side, sang a duet.

Seventy-five children came forward in response to "Billy's" appeal for trail-hitters.

ELMWOOD MAN HURT BY BOILER EXPLOSION

SALEM, S. D., Oct. 9.—(Special.)—Charles Chandler, whose home is at Elmwood, Neb., sustained a broken leg and other injuries and had a narrow escape from death when the steam engine of a threshing outfit exploded on the farm of Charles Clark, near here. Two bones in one of his hands also were broken. In addition he was badly burned and bruised.

When the engine exploded it threw fire from both ends and the force of the explosion was sufficient to hurl the engine backward a distance of about seventy-five feet. The flames spread to four stacks of grain standing nearby and all the stacks were consumed. Chandler was engineer of the threshing outfit.

Apartments, flats, houses and cottages can be rented quickly and cheaply by a Bee "For Rent."

STALKS FOR INDIANS IN CITY

Boy Seeking Redskins in Philadelphia is a Waking Arsenal.

With a prayer book hidden in his breast pocket and a loaded revolver concealed in his blouse, between his shoulder blades, Paul Merrill, 13 years old, came to Philadelphia from Tamaqua, Pa., on his way to spread the fear of God among the Yaqui Indians, who have gone on the warpath. Lordly self-restraint alone kept Paul from shooting up the policeman who took him in tow recently.

Paul was found loitering in the neighborhood of Rittenhouse square early one evening recently by a policeman, who took him to the police station. There it was found that he was carrying a razor in one of his pockets.

Paul looked on with a condescending smile as the detectives drew from his pockets four vicious looking knives, a pocketbook containing \$4, some cards bearing pictures of the holy family and a prayer book.

The detectives thought they had unearthed all the boy's arsenal, and were concluding their search when Detective

Rich accidentally felt a curious lump between his shoulder blades. It proved to be a revolver fully loaded.

At the discovery, some twenty or thirty detectives who had crowded into the room set up a howl. They refused to believe that Paul had not hidden still more weapons on his person until they had examined the linings of his new suit, pored into his mouth, probed his ears and stood him on his head to see if he were sequestering any submarine torpedoes.

Paul was unafraid. He said that his father was a Hungarian laborer, who lived at Tamaqua, and that he had received the revolver from his father, who told him to go west and shoot the Indians, as they were no good, anyway.—Philadelphia Ledger.

DEATH DREAM COMES TRUE

Wife in Her Dream Sees Her Husband Dead—He is Killed by Auto.

Henry Fuschius, a landscape gardener on the estate of General Robert G. Smith at Sayville, L. I., dismounted from his bicycle and put up his umbrella when he was caught in a pouring rain before day-

break in Lakeland avenue on his way home.

While on foot in the road, leading the bicycle with his right hand and holding the umbrella aloft in the left, a big seven-passenger car hit him. Fuschius was knocked thirty feet.

As soon as he could get the big machine stopped, Henry Huntein, who was driving it, got out with a party of friends and picked up the injured man.

A few minutes later John Sweeney of Pat-bogue, came along in an automobile and hurried with the Huntein party and the injured man to a doctor's office. There Fuschius died in a few minutes of a fractured skull.

After word of his death had been telephoned to Mrs. Fuschius, she said she had had a dream in which it appeared to her that her husband was killed. She said she had stayed up late worrying because of her husband's failure to return early in the evening, and after she went to bed remained awake, troubled for some time. When she fell asleep she said her fears shaped her dreams, and after imagining her husband repeatedly in danger, she saw him dead just a second before she was started from her sleep by the telephone bell.—New York Times.

DEAN'S FRIENDS GROOM HIM FOR FEDERAL BENCH

BROKEN BOW, Neb., Oct. 9.—(Special.)—Among the possibilities for the office of federal judge, so his local friends think, is ex-Supreme Justice J. R. Dean, of this city. His friends are for him to a man and are sure he would have been put forward for this position long ago but for the fact that they expected him to be a candidate for the supreme bench next year on a non-partisan judicial ticket. The judge's record, so his friends declare, speaks for itself and he is popular throughout the state. In 1911 he ran ahead of his associates between 1,000 and 2,000 votes. Of a total vote in the state of almost 200,000 he was defeated by less than 1,300 votes, and this at a time when the state was counted largely republican.

Woman Jailed for Proposing. (Correspondence of the Associated Press.) BERLIN, Oct. 9.—A woman in Sagan, Silesia, has just been sent to prison for nine months for making an offer of marriage to a Russian prisoner of war. The prosecuting attorney asked for a sentence of one year.

Use The Bee's "Swapper" column.

The THOMPSON-BELDEN STORE

HOWARD AND SIXTEENTH STREETS

The Electric Brand of House Dresses

\$1.75 Value - - - \$1.00

To best appreciate the full meaning of this special price, come and get acquainted with these House Dresses.

They come in light and dark fast colored percale, stylishly cut and made with a thoroughness that's bound to give you complete satisfaction.



In the Basement Underpriced Apparel Section Monday

Fall Fabrics New Velvets

In All Colors and Black \$1.25 to \$5 a Yard



The completeness of our assortments is very impressive. Important because velvets appear everywhere in Fall Fashions; Wraps and Gowns are made either entirely of velvet or of velvet in combination with other fabrics, and as for trimmings velvets are supreme.

Bring us the material you wish to match, for with our hundred new shades we can surely do it.

Remarkable Abundance of Fashionable Silks

At \$1.00 to \$2.00 a Yard

Wanted silks at popular prices, crepe de chines, beautiful plaids and stripes, all in the new dark rich tones, satin de luxe (extraordinary value at \$1) in the most beautiful line of shades; chiffon taffetas, Faille Francais and new novelties.

Broadcloths & Gabardines Favored

These are the two most popular materials for suits and dresses this season, especially in navy blue, African brown, Russ green, and black—all favored shades are included.



Redfern Corsets

Poise, that sense of power in repose which comes from perfect self-control, is as much a matter of body as it is of mind.

The first and most important step in acquiring poise is to make your body beautiful and comfortable, and poise will come from self-forgetfulness, and this is largely the result of proper corseting.

To be sure there are corsets and corsets, but the model that we cheerfully recommend is a Redfern—a scientifically designed corset—the most perfect example of the art of corsetry that this season's creations show.

Redfern Corsets

We can with a Redfern develop the figure of a young girl into healthful, graceful lines; and we can give the woman of mature lines a youthful figure through the proper fitting of a Redfern Model for that type of form.

Ask to Be Fitted—\$3 up.

B'anket and Bedding Week—Exceptional Values

ALL WOOL PLAID BLANKETS, size 70x80, soft lofty finish and sturdy weave, beautiful plaids in tan, gray, pink and blue, handsomer as well as warmer, at \$7.00 a pair

WOOL NAP BLANKETS in gray, tan and fancy plaids, large double bed size, heavy quality, \$1.50, \$2, \$2.50 and \$3 a pr. HEAVY BLEACHED SHEETS, 81x99, 85c values, at 63c each

COMFORTERS FOR WINTER, filled with best of pure white cotton, covered with a fine quality of silkoline, in pretty floral and Persian designs—\$1.50, \$2.00, \$2.50, \$3.00 and up to \$4.50.

SCALLOPED PILLOW CASES, 45x36, made from a good heavy quality bleached casing, 25c values, at 18c each



To make new patrons of our HAIR GOODS, we have arranged a particularly important sale for Monday only, including these decided values:

24-inch Switches of Natural Wavy Hair \$3.00
28-inch Switches of Natural Wavy Hair \$5.00
All-around Transformations of Natural Wavy Hair \$4.50
Tourist Nets, Real Human Hair, large size \$10.00
Hair Goods—Third Floor.

STEINWAY

Grand and Upright Pianos

For Homes of Culture and Refinement

Style V Upright, mahogany case \$500

Vertegrand Upright, ebonized case \$550

Vertegrand Upright, mahogany case \$600

Style M Grand, mahogany, art finish \$750

Other Steinway Grands in stock at \$800, \$900 up to \$1,250

Steinway Pianos are ever in perfect accord with artistic and cultured surroundings.

AN EXTRAORDINARY OFFER

To Musicians and Music Students on

STEINWAY UPRIGHT PIANOS

The Steinway business is done on a big and beneficent scale. It has led the development of music everywhere, disclosing hidden talent and furnishing the greatest medium for its expansion. Furthering this progressive spirit, we have determined to place the STEINWAY PIANO within the reach of our artist friends and music students who may have found our terms too high. For this purpose, we have decided to sell a limited number of

NEW STEINWAY UPRIGHT PIANOS

In beautiful Mahogany or Ebonized Case at \$500, \$550 and \$600, on terms of \$15.00 First Payment, then \$10.00 Per Month.

All Pianos sold at the factory cash prices.

If you cannot call, write for catalogue and full information.

Schmoller & Mueller Piano Co.

Exclusive Steinway Distributors for Nebraska and Western Iowa, 1311-1313 Farnam Street, Omaha, Nebraska.

Green Gallie

DR. J. W. BALEY

SANATORIUM

Leeds, Neb.

This institution is the only one in the central west with separate buildings situated in their own ample grounds, yet entirely distinct, and rendering it possible to classify cases. The one building being fitted for and devoted to the treatment of non-contagious and non-mental diseases, no others being admitted; the other Rest Cottage being designed for and devoted to the exclusive treatment of select mental cases requiring for a time watchful care and special nursing.

Thompson, Belden & Co.

THE FASHION CENTER OF THE MIDDLE WEST