# BLOWING UP AS A FINE ART.

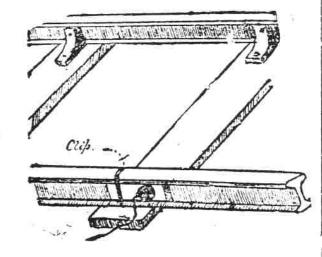
How Gun-Cotton and Other Modern Explosives are Utilized by Military Engineers.

There is probably no branch of modern warfare of which less is known than that which devolves upon the military engineer, and, of that service, the art of handling explosives is one of the most mysterious to the mind of the civilian. To the contemplative mind the fact that a few slabs of gun-cotton can, if properly applied, simply annihilate the work of years, is a satire upon the supposed inmutability of he who builds his house upon a rock.

The military engineer is one of the most important individuals connected with an army, for it is his duty to build up and tear down, to create and to destroy. As the army proceeds upon its march his creative faculty is often called into play. There are bridges of all kinds that must be built, means of communication must be established, and in countless other ways does the army depend for its comfort as well as its success upon the engineering corps that accompanies

The structures that they erect may be for temporary use only, but they must be firmly constructed for all that, and is the same way when they are called upon to wreck the result of the labor of ages the destruction must be effectual.

To the military engineer this question of destruction is one of the most simple problems that he is called upon to face. He knows, almost to a fraction, the amount of damage a slab of wet or dry gun-cotton is capable of doing. He fully realizes that the explosive force of the wet is slightly greater than the dry, but that it is incapable of performing its terble work when in that condition unless



THIS IS THE WIY TO DESTROY A RAILWAT LINE.

fulminate of mercury or some other powerful detonating substance is brought into contact with it. It is for this reason that the bulk of the explosive is carried wet while a small portion is kept dry to be used in preparing the larger pieces for

#### ABOUT THE "COTTON."

Gun-cotton is one of the most interesting of the many strange substances that now play such an important part in warfare. It is one of the oldest of the modern explosives and is often mentioned in stories from the front, but in spite of that there are many persons who have only the vaguest idea regarding its composition and are puzzled to understand why such a terrifically destructive compound should be existing under such a name as "cotton." For the information compound may not be uninteresting.

Gun-cotton was discovered by Schonbein in 1846. The inventor gave it the name of pyroxylin, a word derived from two Greek words meaning "fire" and "wood." It is formed by immersing cotton, tow, linen, sawdust, or any other form of cellulose, in a mixture of equal measure of oil of vitrol and nitric acid.

When the process of manufacture has been carried to this extent no change of form has occurred, but there has been a very marked chemical alteration. A certain number of equivalents of hydrogen are then abstracted and their place is supplied by an equal number of equivalents of peroxide of nitrogen. In undergoing this change the fibre is increased in weight 82 per cent, and acquires new properties.

. The explosibility of pyroxylin has caused it to be used in all kinds of destructive work, and, its use becoming so general, it was found necessary to provide it with a more common name. Pyroxylin was a good word for scientists to use but it was too learned and too awkward for common people to struggla with therefore the more familiar appelation was chosen.

Gun-cotton has many peculiarities, but one of the strangest things about it is that one can light a small piece of the dry substance with a match without danger. There will be a puff of flame and nothing more. If the same amount of the explosive should be placed on an anvil, however, and should then be struck with a hammer it is extremely doubtful if one ever found any remains of either hammer, anvil or experimenter. At the same time it is perfectly safe for a person who knows how to handle gun-cotton to cut it with a knife or saw and this is done, not only in the factories but often by the engineers in the field.

The process of exploding the gun-cotton is very simple as it only requires a small quantity of detonating substance to explode the dry substance and this

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When you experience that deligntful feeling which makes you want to sit down and watch other people work, it's a sure sign that gentle spring is again on deck.



The real rough rider is the man who rides the river with a twisting, squirming log for a saddle, on which he stands, balancing himself to its every motion. If his coolness fails or his nerve gives way, disaster and death reach out for him.

It's the giving way of the "nerve" which proves fatal to sc many a man, Perhaps he is simply crossing the street, as he has done ten

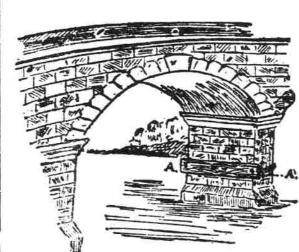
thousand times. He hears a shout, stops, hesitates, gets "rattled" and is run over. When a man finds that his memory plays him false often, when he starts off to get something and forgets what he went for, when he knows he has locked the front door and yet an irritating uncertainty compels him to get up and verify his knowledge, then that man is in danger at any minute when confronted by a triffing danger. He is unnerved.

This condition can be perfectly cured by the use of Dr. Pierce's Golden Medical Discovery. It strengthens the stomach, nourishes the nerves, and purifies the blood. It contains no alcohol, whisky or other intoxicant.

"The reason I delayed writing was because I wanted to wait one year after I had taken the medicine before giving my statement, and now I can send a good, conscientious testimonial,' writes Chas. H. Sergeant, Esq., of Plain City. Madison Co., Ohio. "During the summer and fall of 1896 I became all "run down," nerves were out of order and stomach out of order. wrote to Dr. Pierce for advice. He said I had reneral debility, and advised Dr. Pierce's Golden Medical Discovery, and, thanks to you for your advice, I used six bottles; and since I stopped taking it, about one year ago, I have not taken any medicine of any kird, and have been able to work every day. My appetite is good, I can eat three square meals a day, I do not feel that miserable burning in the stomach after eating, and my blood and nerves are in good shape."

Dr. Pierce's Pellets cure biliousness

has a similar effect upon the wet sub-



ONE METHOD OF BLOWING UP A BRIDGE.

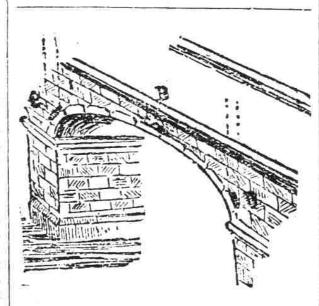
stance providing the flash has been conveyed to it through the medium of the dry cotton. The detonator, therefore, is nothing more than a brass tube with a small quantity of fulminate of mercury at one end, into which a strand of quickmatch is passed.

#### THE EXPLOSION.

One of the courses of study required in the making of a military engineer is that which specifies the best ways to use explosives. For instance ,there are rules for everything and these rules are so specific that the engineer in the field can instantly decide as to the quickest and surest means of wrecking any object that he may be called upon to destroy.

If it is a bridge that is to be wrecked a board is fastened to the centre pier and of such persons a brief description of the | between this board and the masonry of and dangerous results of throat and lung the bridge a layer of gun-cotton is placed. When this is exploded the pier will be split in two parts and the entire bridge holes are dug through the roadway and the gun-cotton is placed in the crown of the arch. When it is fired the arch is split and the bridge falls.

The amount of gun-cotton required to accomplish work of this kind is usually calculated on the basis of about twothirds of a pound for each two feet of thickness and length to be demolished. W. C. Carmichael. Another use to which gun-cotton is



ANOTHER METHOD OF DOING THE SAME THING.

often put is in the destruction of a railroad system, for a comparatively small quantity of the substance will rip up the best railway lines ever constructed, and do the work so thoroughly that the problem of repairing the break is a somewhat serious one. In such cases the charge is placed in the rim of the rail and is secured by a clip. The charge required to destroy a steel rail is one-quarter of a

pound; an iron rail two-thirds of a pound. While gun-cotton is the principal explosive agent used in military engineering its arrangement requires so much delicate preparation that there are occasions upon which its use is impractical. In such cases gun powder or some less delicate explosive is used, but among all these substances there are none that have stood such thorough tests and have given such satisfaction as the old gun-cotton which has been in use for so many years.

Every woman covets a shapely, pretty figure, and many of them deplore the loss of their girlish forms after marriage. The bearing of children is very destructive to the mother's shapeliness. This can Shapely

Married Women

destructive to the mother's shapeliness. This can be avoided, however, by the use of Mother's fore baby comes, as this scientific linical the symmetry of form. Mother's Friend also obviates all the danger of child-birth, and carries the expectant mother safely through this critical period without pain. It is woman's greatest blessing, and thousands gratefully tell of the great good it has done them. Sold by all druggists at \$1.00 per bottle.

Our little book, telling all about this great remedy, will be sent free to any address by The Bradfield Regulator Company, Atlanta, Georgia.

#### FOR FROZEN FRUIT CREAMS.

In fruit ice creams the following proportions of fruit will be found practically correct: Apricot, use one quart of apricots. These should be pulped through a sieve and added to the compound after it is taken off the fire and when it has become cold. The faice of one lemon should go with it. Banana ice cream needs a half dozen bananas, which should be peeled, ma-hed and beaten until they are a smooth parte. pound of coffee mixed, one-half Java one-quarter Mocha and one-quarter Maracaibo. Have the coffee ground coarsely and put it into the milk and cream, bringing it to a boiling point in a porcelain lined vessel. Allow it to tand until it is cool and then strain through a piece of fine muslin, afterwards adding sugar.

All who suffer from piles win be glad to learn that DeWitt's Witch Hazel Salve will give them instant and permanent relief. It will cure eczema and YOUNG English woman of refineall skin diseases. Beware of counterfeits. Dr. T. C. Smith.

Probably the hardest problems of the average man's existence is getting his own consent to crawl out of bed in the

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The Chinese ask, "How is your liver?" instead of "How do -- do?" for when the liver is active the health is good. DeWitt's Little Early Risers are famous little pills for the liver and bowels. Dr. T. C. Smith.

Don't imagine that men who have a good idea of matrimony necessarily have a good opinion of it.

Ivy poisoning, poison wounds and all other accidental injuries may be quickly cured by using DeWitt's Witch Hazel Salve. It is also a certain cure for piles and skin disease. Take no other. Dr. T. C. Smith.

The truly great hero is the one who acts and lets the people do the talk-

#### Dr. David Kennedys Favorite Remedy CURES ALL KIDNEY, STOMACH

His Eyes Open.

"Have you considered what matrimony means?" asked old Dar la Mark. "Oh, yes," replied young Spendy. "That's why I want to marry your daugh-

ter."-Philadelphia North American.

DOES IT PAY TO BUY CHEA ? A cheap remedy for coughs and colds is all right but you want something hat will relieve and cure the more severe troubles. What snail ou do? Go to a warmer and more regular climate? Yes. if possible; if not possible for you, then will necessarily collapse. If the piers of in either case take the ONLY remedy the bridge are extremely short and thick that has been introduced in all civilized countries with success in severe throat and lung troubles, "Doschee's German Syrup." It not only heals and stimulates the tissues to destroy the germ disease, but allays inflammation, causes easy expectoration, gives a good night's rest, and cures the patient. Try ONE bottle. Recommended many years by all druggists in the world. For sale by

### A Hard One.

Mr. Goodfellow (showing his wife all around his counting house)-And these are the day books.

Mrs. Goodfellow-Yes? Now show me the night books. Mr. Goodfellow (mystified)-The night

Mrs. Goodfellow-Yes. Those that you have to work over at night and that keep you down here until 2 o'clock in the

Last fall I sprained my left hip while handling some heavy boxes. The doctor I called on said at first it was a slight strain and would soon be well, but it grew worse and the doctor then said I college, Spartanburg, S. C. Tickets had rheumatism. It continued to grow on sale Jine 1 to 3 inclusive; final worse and I could hardly get around limit June 7. Round trip rate from to work. I went to a drug store and Asheville, \$2.75. the druggist recommended me to try Chamberlain's Pain Balm. I tried it Kansas City, Mo. Tickets on sale and one-half of a 50-cent bottle cured July 1-2; final limit July 9. Round me entirely. I now recommend it to trip rate from Asheville, \$26.50. Rate my friends.-F. A. Babcock, Erie one way for the round trip. Pa. It is for sale by C. A. Raysor.

If a woman tries to practice what her husband preaches she has no time | Vernon, T. P. A., Charlotte, N. C. for gossip.



When a clock is wound up it goesbut it is different with other business.

Neglect is the short step so many take from a cough or cold to consumption. The early use of One Minute Cough Cure prevents consumption. It is the only harmless remedy that gives immediate results. It cures all throa and lung troubles. Children all like it and mothers endorse it. Dr. T. C.

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GENTLEMAN desires board in private family few miles from Asheville for the months of July and August, near river or lake; describe location and give price per week. Address Ashevine Gazette.

ment and some experience in teaching children, including kindergarten methods, seeks engagement. Address M, box 147, Asheville.

HELP is in demand. Those wanting cooks or chambermaids should apply at once, as the season is advancing and the supply of help decreasing. JOHN SMITH, 15 N. Main, 'phone

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WANTED-ACTIVE MEN OF GOOD ch racter to deli r and collect for old established wholesale and exporting house. Bona fide salary of \$900 a year guaranteed with expenses References exchanged. Enclose self-adstamped dressed envelore WHOLESALERS AND EXPORT-ERS, Third Floor, 331 De "born st., Chicago.

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FOR RENT-A new four-roo cottage and two acres pasture; 1 1-2 miles out, on Lookout Mountain street railway. Apply to C. S. Cooper, 39 S. Main st.

nished seven-room house, with all modern conveniences and electric state in the union. lights; near street car line; only five minutes' walk from Cou square. Apply at No. 8 Grady st., or Wilkie & LaBarbe

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FOR RENT-One boarding house, 12 rooms, all modern conveniences and electric ligh ; on newly paved street. Also one seven-room cottage, one furnished and one unfurnished fl : modern conveniences. Apply to O. D. Revell, 32-34 Paton ave.

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#### Dr. David Kennedy's Favorite Remedy

on the other hand, is an absolutely safe and harmless medicine for all diseases of the Kidneys, Liver, Bladder and Blood. It contains no minerals in any form, no dangerous stimulants, no mercury or poison. It contains vegetable juices only. Invalids and children can take it with perfect safety. It is a grand medicine for aged people, who are growing weak as the years pass by. |For all distressing forms of Kidney Troubles and for stubborn Constipation it is

incomparable. It goes deep and cures.

Wm. Brown, of Danbury, Conn., had Kidney Trouble the very worst way. He could not sleep, and had to get up constantly during the night. Urine passed from him involuntarily in the daytime also. Two or three bottles of Dr. David Kennedy's Favorite Remedy restored his Kidneys to per-

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#### TRIAL BOTTLE FREE.

TRY THIS TEST.

Send your name and address to the DR. DAVID KENNEDY CORPORATION, Rondout, N. Y., mentioning this paper. You will receive by return mail, absolutely free, a trial bottle of Favorite Remedy and a pamphlet containing valnable medical advice, such as everybody needs.

Put some urine in a glass tumbler and let it stand 24 hours. A sediment at the bottom, or a milky, cloudy appearance indicates that the kidneys are in a dangerous condition and that Favorite Remedy is badly needed. Healthy urine is clear and does not stain linen.

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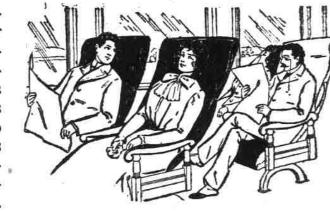
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