

THE MODERN GUNNER

He is a Wizard, With Science For His Confederate.

WONDERFUL BATTERY WORK.

Amazing Results Achieved by Our Coast Defense Experts and the Bewildering Array of Apparatus by Which Accuracy of Fire is Attained.

The war department makes little notice about the condition of the coast defenses. Such activity as one sees about the fortifications reveals little.

The gunner may have all the knowledge of what to do when a hostile ship appears and know exactly what the ship will do under any given condition.

Hitting the target has become almost an exact science. By mechanical means the striking of a target has become so nearly an infallibility that the ships which tow the floating targets are operated from them by only 600 feet of line.

A hostile warship is seen in the offing. The two surveying instruments are turned upon it from their respective angles, while the gunner takes his place at the telescope attached to the gun.

What is done by the guns in some of our forts is illustrated by what has recently been accomplished at two of the forts along the Atlantic coast.

Battery Parrott, at Fort Monroe, recently was called upon to fire at a moving target at an unknown distance away.

One of the firing tests is called "fire command." In this test the gunners are expected to change the fire from one target to another of the three in the string as directed and hit it with one changing the speed of the fire.

A gunner of the old school would frown if he had suddenly to adapt himself to the new methods in the face of the enemy. Hair line telescopes, surveying instruments, barometers, thermometers, anemometers, weather vanes, tide gauges and stop watches are required to secure the requisite results.

The effect of all of these factors in the combination under all possible conditions has been worked out by experiments and computations and the result utilized in devising apparatus which automatically registers the in-

formation which is essential at such speed that half a dozen half ton shots can be thrown into a ship from a single battery in the space of less than four minutes.

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This permits right and left corrections to be made in sighting the gun after the range has been determined.

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WALKING BANKS.

All Mexicans Carry Large Sums of Money on Their Persons.

A bank to the Mexican is not to be thought of for the handling of small amounts. Almost any Mexican in professional or business life carries on his person anywhere between \$200 and \$500.

The ordinary foreigner in Mexico, whether tourist or business man located here, carries perhaps \$50 to \$100 with him and no more.

One Mexican of the middle class asked another in a casual way if he could change a thousand dollar bill. The other pulled out a wallet from his inside pocket and counted out nearly \$2,000.

One Mexican, who was being reproved for this apparent carelessness and imprudence, replied:

"We do not have any of your American holdups and highwaymen in Mexico. I have known my friends to have their pockets picked for large amounts through their own carelessness as to where they carried their money.

The check idea seems to have taken but small hold as yet upon the citizens of Mexico, especially when small amounts of less than \$1,000 are concerned.

Even the Indians in the street carry amounts of cash that would never be supposed to be in their possession.

Too Much at Stake.

The question for discussion before the debating society that had met in the little schoolhouse belonging to district No. 13 was this:

The debate was fierce and prolonged, but, as frequently happens in such cases, the disputants on one side had informed themselves thoroughly, while the others, relying upon their having the popular side of the controversy, depended solely on their oratory.

"Why did you decide against us?" subsequently asked one of the disputants. "You know we presented good arguments, while the other fellows didn't show any."

An Ode to His Washerwoman. Even in the face of financial embarrassment the Yale student refuses to be downcast, for when the florist threatens suit if his bill is not paid or when in walking through the city streets the student sees his newest shirt adorning the grinning face of his washerwoman's young unhelpful child.

Crudity of diction is not always indicative of crudity of thought. The latter has been longer in the world than language, for the primeval savage was not without the elements of mind when gestures and grunts were his sole means of expression.

Yes, some day in the dim futurity I'll pay it all, I promise thee. And so he will set the whole campus laughing, if not to paying their bills.

MAKING A TIME TABLE

A Peep Into the Chart Room of a Great Railway.

WORKING OUT A SCHEDULE.

Threads and Pins That Enable the Officials to So Place Trains as to Avoid the Danger of Collision and All Unnecessary Loss of Time.

Travelers who consult the ever handy time tables to the arrival or departure of the particular train that is to carry them probably never give a thought to the manner in which a modern time table is made up.

The charts are white boards about six feet wide and from two to five feet high. The names of the stations, accurately scaled, are printed on the boards at the side, and from the top of the board many colored strings dangle, more suggestive of a barber's shop than a tool for laying out the path of traffic and commerce.

The superintendents confer regarding the time at junction points on connecting trains and then work out the schedule on intermediate points on a chart of his division.

Horizontally the chart shows 12 midnight on the left side, and there is a line extending across the chart for each five minutes from that time until the full twenty-four hours have been shown.

Westbound trains run down and diagonally to the right. Eastbound trains start at the bottom, run upward and diagonally to the right.

After the chart has been strung a former issue of the time card with pen and ink is brought into use, and the superintendent begins at original terminal, looks at the station line, and whenever any string representing a train crosses this station line he notes the time as shown on the proof of the time card.

To make a successful time card a superintendent must be perfectly familiar with the grade and track conditions and when stringing the thread must allow more time for unfavorable grade, railroad crossing and other unusual stops, so that the running time of the train will be uniform.

Disposing of Her Rival. The president of our club is a wonderfully clever woman.

Double Surprise. The Friend—Your marriage to Sapphead was quite a surprise to me.

The Ex-Widow—Well, I guess it was more of a surprise to him.—Boston Herald.

PAPER WATERMARKS.

Method by Which the Devices Are Imprinted on the Sheets.

The discovery of the watermark was the result of an accident—probably a thousand years ago. Parchment was then made of vegetable pulp, which was poured in a liquid state into a sieve, and the thin layer of pulp that remained was pressed and dried.

These fibers seem to have been twisted reeds, and the mark they left on the parchment took the form of wide lines running across and across diagonally. In those days the watermark was regarded as a blemish since the fiber was thick and coarse and the deep impression made on the paper proved a drawback in writing.

The possibilities of the usefulness of the watermark became apparent by degrees. It was first found to be of service in preventing the forgery of books and manuscripts.

The term "watermark" is in reality a misnomer since the mark is actually produced by wire. Wire is fashioned into the desired pattern, figure or lettering. This is inserted beneath the sheet in the last stages of its manufacture and while the paper is still capable of receiving the impression.

In the manufacture of postage stamps the watermark is of immense advantage as a safeguard. The paper that practices the marks are kept strictly under lock and key.

Symbolism of College Gowns. It has been said that few people, including many university men themselves, have any definite idea of the meaning of the gowns worn by collegiate students.

In America university gowns exhibit much variety, there being a great difference in the various institutions, but all over the country—in fact, all over the English speaking world—certain distinctions hold.

The ordinary bachelor's gown, the first the student owns, is of unadorned black with pointed sleeves and is ordinarily made of serge or other simple black fabric.

A Disciple of Emerson. He stood in the driving slogging rain on a corner contemplating, the curb.

Insurance and Assurance. They were talking, the little group of agents, about the words insurance and assurance, some claiming that the first and some that the second was the better word to use.

Probably there is no nautical term more frequently used than the word "knot." The word is synonymous with the nautical mile, or 6,080.27 feet, while, as every one knows, the geographical mile is 5,280 feet.

What a Knot Is. The effect of all of these factors in the combination under all possible conditions has been worked out by experiments and computations and the result utilized in devising apparatus which automatically registers the in-

AN ALLIGATOR'S TAIL.

The Muscles of This Wonderful Organ Are Like Springs of Steel.

In whales the tail is set transversely instead of vertically. The reason for this is concealed in long ages of evolution. Fishes have always been as they are now, aquatic, but the ancestors of whales and dolphins lived on dry land, where they crawled about on four good feet.

The sting ray and certain other fishes have a sharp, poisonous spine in the tail with which they can inflict a severe wound, but in the case of the alligator it is by sheer brute force that the tail is useful for defense.

When alarmed their first act is to dive for their lives, but when an eagle is making the attack the swiftness of its flight sometimes intercepts the lizard, and the hind leg preys on the hind tail which is the last visible part of the iguana.

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This Time the Lawyer Scored. A lawyer appeared before one of the New York city boards asking that damages be awarded to certain clients because of a change of grade in their street.

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