

water is quickly atrewn with her remains. Various ingenious means have been devised for bringing about this closing of the circuit, one of them being a little cup partly filled with mercury. which, if tilted by a shock, causes the mercury to reach a metal bar. This does the business, and bang goes the mine.

It is interesting just now to consider the fact

derground casemate on shore, which is part of a

fort. Suppose a hostile vessel to approach. Two telescopes are aimed at her from points on shore

some hundreds of yards apart, their lines of sight

crossing, of course, at the spot where she floats

The telescopes are electrically connected with two

bang!-she is blown sky-high.

pointers that move on the table. Moving with the

they must have a fairly expert acquaintance with

A part of the preliminary work of establishing

mine field consists in making soundings. The

depths all over the surveyed area having been

ascertained, wire ropes are measured off into cor-

responding lengths, a heavy leaden sinker (or

anchor) being attached to one end of each, and a

mine to the other end. By this simple means the

sphere of galvanized iron is made to float just as

many feet below the surface as may be desired.

Recently, however, an ingenious "automatic an-

chor" has been contrived, by which, no matter

what the depth, exactly the required submergences

afforded practical demonstration of the usefulness

of such observation mines. But of their destruc-

tive power there can be no question. Many ex-

periments have been made with them in the blow-

ing up of old hulks, and on this side of the water,

not long ago, a miniature ship of war was scat-

tered in smithereens at Fort Totten, N. Y., by a

mine of corresponding size ignited by an electric

that the explosion of a mine containing 500 pounds

of guncotton would at least disable the stoutest

battleship within a radius of 60 feet, if it did not

sink her. In a "field" defending a harbor channel,

each row of galvanized iron spheres is strung

along one electric cable, which is attached to the

sinkers (or anchors) and runs along the bottom.

The rows are connected together by a main elec-

dric cable, to which each mine is joined by a

branch cable that meets it just above the anchor

Thus every mine in the "field" is under direct

control by the apparatus in the casemate on shore

with concrete, and containing all the mechanism

for controlling the mine system. It is connected

by telephone, and otherwise electrically, with the

two observing stations, in which are mounted tho

telescopes already mentioned, for watching hostile

are called "electro-contact" mines are used. They

are much smaller in size, and are commonly ar-

ranged in groups of five or six, which are con-

Sometimes, for the protection of harbors, what

The casemate is an underground room, lined

From such trials the conclusion has been drawn

spark from a distance of a mile and a quarter.

As yet experience in actual warfare has not

for each submarine may be obtained offhand.

electricity and the chemistry of explosives.

telescopes, the ends of the pointers meet on the that the very first employment of a floating mine square corresponding to the one where (over the was at the siege of Antwerp by the Spaniards in mine field) the vessel actually is. A button mark-1585. The besiegers, being able to make little or ed with the number of that square is touched, and no headway in their attacks upon the stout walls of the city, resorted to a novel and unheard-of Small steamers especially equipped for the purstratagem. Loading a ship with a great quantity pose are used in the business of planting these of gunpowder, they set her adrift at a time when mines, and the work being of such great importthe wind and tide would surely bring her up ance, the men who undertake it are highly trained. against the sea wall; and, when she was tolerably Theirs is a branch of the coast artillery which close, two men on board of her ignited a predoes its fighting literally under water, and, apart viously arranged fuse. from the mechanical details of their employment,

The idea worked out, however, in a way not at all in accordance with the plan contemplated. For the sturdy burghers of Antwerp repaired the damage done to the wall by the explosion before the besiegers could take advantage of it, and, adopting the suggestion offered them by the enemy, sent out a similar gunpowder boat under full sail against the Spanish fleet and blew up one of their biggest ships.

In recent news dispatches a good deal has been said about the use of mines on land, for the opportune blowing up of bridges or approaches to fortifleations while the enemy was passing over them. By such means whole regiments are said to have been annihilated. The expedient is by no means new, but the methods adopted are of up-to-date and superior ingenuity.

Suppose, for example, that a piece of road is to be mined. The infernal machine is concealed from view by spreading over it a few inches of earth. In consists in part of a small electric battery, provided with two wires, one of which communicates with a receptacle containing a large quantity of high explosive, while the other runs to an arrangement called a "springboard." When a man or horse steps on the springboard, a piece of metal beneath the latter is brought into contact with a projecting pin, thereby completing a circuit which ignites a fuse

The same idea is easily applied to a bridge In the case of a fort, a system of more scientifically constructed mines may render every approach a waiting volcano, a switchboard inside the defenses enabling the besieged to explode them at the moment when they are likely to kill the greatest number of men.

In modern warfare wholesale killing takes the place of the old-fashioned military murder by retail. Doubtless, as time goes on, "improvements" in this direction will steadily progress. The British and Germans have both been experimenting with means whereby (it is hoped) submarine mines may be set off by wireless apparatus. They are also trying to contrive a submarine "fish torpedo" (resembling the Whitehead) which can be steered from shore to attack a hostile ship perhaps miles from land.

The Whitehead is an Englishman's invention, and is the only kind of fish torpedo used in the British navy. Oddly enough, the similar devil's

contrivance used by the Germans is called (after its originator) the Schwartzkopf-meaning Blackhead. They differ only in minor details, being shaped in imitation of the porpoise, and fired from tubes by charges of compressed air.

GUN

The typical up-to-date torpedo of this description is really a submarine boat in miniature. It is a steel cylinder, 15 feet long, with a conical attachable nose called a "war-head," which contains 200 pounds of high explosive. The main body is a chamber holding air at a pressure of 2,000 pounds to the square inch. This air pressure runs the machinery in the rear part of the cylin der, which actuates a pair of propellers.

The steel fish travels through the water at a speed of 40 miles an hour. It can be discharged at a target with as much accuracy as a bullet fired from a gun. Pursuing its course at a depth of 15 feet below the surface, so as to strike beneath the armor of a warship, it is kept automatically at that depth by an ingenious little rudder which turns up if the nose of the torpedo attempts to point downward, or vise versa. Inside the cylinder is a gyroscope, which is started spinning and pointed at the target before the submarine projectile is discharged. Thus, if it tends to turn either to right or left, it is promply brought back into

Until within the last few weeks very little was known through practical experience of the effectiveness of the submarine torpedo as a weapon of war. It has even surpassed expectations. The cost of one of these terrible projectiles is about \$1,500; but, inasmuch as one of them is easily capable of destroying a battleship valued at \$10, 000,000, they may be said to be well worth the money .-

THE NEW JOKER.

"Well, I see the war is all over," announced fellow who was trying to be a contributor. "What do you mean, all over?" replied the fellow he brought along with him as a feeder. "All over Europe!" cried the original comedian, with a shriek of laughter.

THE CAUSE.

"Cholly has a swelled head." "There is one thing only which with reason could give that idiot a swelled head." "And what might that be?" "A good punching."

HEARD IN A BARBER SHOP.

Barber (shaving customer)-Do you know that when the edge of a razor is examined under a microscope it has teeth like those of a saw? Tortured Victim-I don't need a microscope to



OHIO'S "SECOND M'KINLEY"



"The second McKinley," as his friends call him, Frank B. Willis, the new governor of Ohio, is a product of the farm. While he is not "self-educated" in the sense that Lincoln was, Willis toiled hard to help pay his way through school and college. His entire life has been one of toil and endeavor, the conservation of energy not being one of his cardinal virtues.

Willis is a Buckeye through and through. He was born in Lewis Center, Delaware county, December 28, 1872, and worked on his father's farm while attending the common school at Lewis Center and while going through the Galena high school in the same county.

Willis is one of the big men physteally in Ohio politics. His friends take pride in declaring that he has the loudest voice in the state, is a prize hand-shaker and laugher, and that he is absolutely clean in his

private life. In congress Willis, while not classified as a reactionary, has been regular in his party allegiance. In fact, he is regarded as a most cautious man when it comes to questions arising in his own party. It is recorded that as a congressional nominee, seeking re-election from the Eighth district in 1912, he went through the entire campaign without declaring himself as between Roosevelt and Taft.

SOCIAL FAVORITE TO WED

One of the most interesting announcements made in Washington society this season was that of the engagement of Margery Colton and Randall Hagner. Both of them are so thoroughly identified with Washington and have such a wide circle of friends that congratulations were simply showered on them.

Miss Colton is the daughter of the late Col. Francis Colton, and though she has lived a good deal abroad and in the Orient, it has been mostly because her father, or her brother, or whichever member of her family she happened to be living with, was stationed in some far-away post. The Coltons are all army people, and between while Margery has always come home" to Washington.

Mostly she has made her home with her brother, Col. George R. Colton, U. S. A., and as he was stationed in Manila for several years, and was governor of Porto Rico for a while,

Margery, who was chatelaine of his establishment at both these posts, has moved around considerably. Lately she has been living with her brother-inlaw and sister, Commander and Mrs. Archibald Davis (the navy this time, instead of the army) and it is they who make the announcement of the engagement. But whoever she's living with, everyone in Washington knows Margery Colton.

No date has been set for the wedding, but it is announced that it will take place during the winter, and it is bound to be a big affair.





James Sloan, Jr., head of the secret service force at the White House, has been promoted to become chief operator of the Detroit headquarters, one of the most important fields in the service. Mr. Sloan is famous throughout the country for his personal attendance upon Presidents Roosevelt, Taft and Wilson.

"Jimmy" Sloan, who has traveled in every state, and almost every county, in the United States, as the guardian of three presidents, was assigned to duty at the White house 12 years ago. President Roosevelt once said of him that if he had a regiment made up of men like Sloan he could whip several regiments of men. Colonel Roosevelt was so fond of Sloan that he wanted to make the secret service man United States marshall of the Danville district of Illinois, but 'Uncle Joe" Cannon, then a power in the house, had someone else he

wanted for the job. Secretary Tumulty paid Sloan the tribute of saying that no accident has happened to a president of the United States during Sloan's connection with the service, and that he deserves the promotion he has received.

RUSSIA'S LEADING SOLDIER

Grand Duke Nicholas, who is giving such a good account of himself as commander in chief of the Russian armies in the war with Germany and Austria, is a second cousin of the emperor of Russia. He was born in St. Petersburg fifty-eight years ago and since his youth has been conspicuous in the Russian army. He presents a striking contrast in every respect to his father, who was a notorious profiigate. The present grand duke is universally respected. In 1907 he was married to Princess Anastasia of Montenegro.

The grand duke has often been employed on special missions by Emperor Nicholas, who has always reposed the utmost confidence in him.

As in the case of nearly every prominent member of the Russian imperial family, the grand duke has been the victim of several attempts at assassination.

For a number of years Grand Duke Nicholas has been recognized as the foremost cavalry leader of Russia, if not of Europe. He is very tall and a superb horseman. On several occasions during the war between Russia and Japan the emperor was urged to appoint him to the supreme command of the Russian troops in Manchuria, in the place of General Kuropatkin, and the military authorities in Berlin, London and other European capitals have more than once expressed the opinion that the Russian army would have made a far better showing if the emperor had listened to this advice.

