

## WARSHIPS REPAIRED

THE WORK OF FIXING THEM UP DONE  
"WHILE YOU WAIT."

The Vulcan Is a Floating Machine Shop, Fully Equipped To Repair Any Damage Done to Sampson's Fleet—Carries Tools and Machinery Worth \$300,000.

The queerest vessel in the United States navy, if not, indeed, the queerest afloat, is the aptly named Vulcan. She is literally a floating machine shop, thoroughly equipped with all the tools and appliances to be found in any shop ashore where the work of repairing machinery to vessels is done. She may not win as much popular glory as her armed sisters, she may not present so gay an appearance, and she may not do such deeds of daring, but she has her mission to fulfill, and she will not be found wanting.

The real heroes of war are not always to be found on the quarterdeck. Did you ever think of the men buried away down in the stifling bowels of the ship, the men who see nothing of the battle, but upon whose efforts the action of the ship entirely depends? That's the way it is with the Vulcan. Her labors will probably be unpraised and unsung, but they will be none the less valuable for all that.

Her mission is to remain with the fleet and repair any damage that may be done to the other vessels. For this work she is thoroughly prepared. Her equipment includes nearly a hundred tons of tools and machinery valued at \$300,000.

If you have ever visited a naval repair shop and can imagine the scene transferred to shipboard, you can get a fairly good idea of what the Vulcan looks like. There are plate bending rolls and punching and shearing machines that can bite through an inch of solid steel. There are lathes for turning castings of nearly any size, there are planers, drills and milling machines of compass enough to meet almost any demand, and there are blowers to supply the several forges and to draw foul air from between decks and send it through the ventilators above. She can even make small rapid fire guns.

There are pipe cutters, bolt cutters, forges and grindstones, and a good sized cupola for the melting of sufficient metal to make a heavy casting. A supplemental electric plant has given excellent lighting facilities throughout the ship, but principally in the workshops situated on what is termed the third deck.

There are also evaporators and distillers of a capacity equal to a daily output of quite ten thousand gallons of water, several times more than the needs of the Vulcan could demand. She has two steam cranes, with ten foot arms that will lead to the hoisting drums amidships and to the cranes to the hatches. These cranes are specially designed for removing weights from the men-of-war and for transferring machinery to the disabled ships. And, lastly, there is a magnificent little foundry for manufacturing castings up to a certain size.

Of course, skilled men are required to perform the work of repairing machinery, and the best machinists and mechanics in the service have been assigned to the Vulcan to perform the work for which it has been fitted out, and this brings to light a condition of affairs quite as unique as is the ship herself. There is no mechanical plant in the country that admits of such a variety of accomplishments as this one. The variety of departments gives the Vulcan more chief petty officers than any other ship known. A dozen such officers is the usual complement for a war ship, but the Vulcan, out of her entire crew of two hundred men, has ninety-two men who have the right to wear double breasted short coats and officer's caps.

No vessel that has yet started out for war has carried such a large complement of well-trained and educated men. The repair ship has on board some of the finest engineers in the country, and among the number is a Providence millionaire and a college professor, who entered the service of their country as soon as it was known that the United States was to have a floating machine shop.

Chief machinists, expert boiler-makers, moulders, brass finishers and electricians; copper-smiths, carpenters, joiners, shipwrights, plumbers—all have the rating of first class petty officers. The Vulcan's captain is Lieutenant Commander Ira Harris who has been general manager of the Chicago Drop Forge and Foundry Company, and of like concerns in Kansas and Cleveland, O.

The chief engineers are Gardner Sims, the head of the Armington & Sims Engine Works, of Providence, R. I., who has thirty of his best mechanics aboard, and Professor Aldrich, of the University of West Virginia, one of the best electrical experts of the country. Frederick C. Neilson, son of Medical Inspector John L. Neilson, United States senior medical officer at Charleston, is an assistant engineer. The leading mechanics have quarters in the old passenger state rooms, and will live very comfortably.

Officially the Vulcan is described as an engineer's repair ship, but Engineer in Chief Melville, who was responsible for her purchase and transformation, sets the mind at rest as to her position in the navy by calling her a floating machine shop. The Vulcan was formerly the merchant steamer Chatham. Shortly before the war commenced Engineer in Chief Melville recommended to the department that two vessels be acquired which could be transformed into engineer's repair ships and attached to the North Atlantic and flying squadrons.

## THE FIRST WAR TROPHY.

It is the Castilian Flag Which Floated Over the Cavite Forts at Manila.

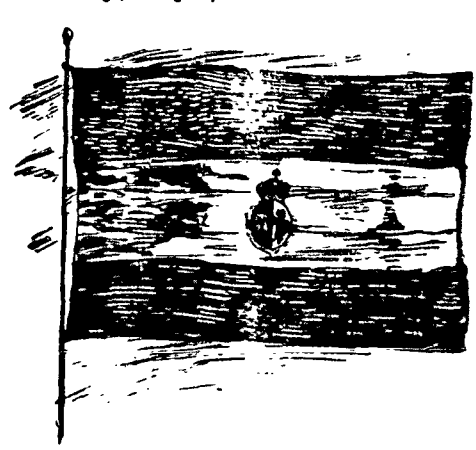
The first war trophy captured from Spain is possessed by Hon. William E. Mason, United States senator from Illinois. It is the Castilian flag which floated defiantly from the heights of the Cavite forts and arsenal at Manila on May 1, in the face of Admiral Dewey's squadron.

After the bombardment and surrender the flag was taken by a body of marines from the Olympia, and shortly thereafter the crew in a body sent the flag to Senator Mason in recognition of his manly and patriotic denunciations of Spanish intrigue and treachery in the destruction of the battleship Maine. The flag, accompanied by the following letter from the Olympia's crew, reached Senator Mason in Chicago:

"United States Flagship Olympia, Cavite, Philippine Islands, May 12, '98. To the Honorable W. E. Mason, Senator, Illinois, United States of America.

"Sir—Please accept the accompanying Spanish flag in the name of the ship's company of the United States flagship Olympia.

"This flag was taken (after the destruction of the Spanish fleet) from the forts and arsenal at Cavite after the bombardment and surrender, Manila Bay, May 1, 1898.



"This is sent as a token of our esteem for your patriotic utterances in Congress with regard to the Maine disaster, which sentiments find a ready echo in the heart of every bluejacket serving under the Star Spangled Banner.

"Very respectfully, your obedient servants.

(Signed for the ship's company).

"J. S. ECKSTROM, Chief Master of Arms.

"W. W. CREAGH, Chief Yeoman."

The flag is ten by fourteen feet in length, having in the center the coat of arms of castile with the lion rampant and the castle tower. The bars are three feet wide, two red, the center being of a faded yellow. The flag is rent in numerous places from pieces of bursting shells and rifle bullets, while the bunting is dimmed here and there by blotches of Spanish blood.

General Miles.

A splendid physique enables Gen. Miles still to enjoy all outdoor sports and exercises. He is a superb rider, sitting his horse with the graceful ease of a cowboy, and a lover of the chase, especially after the big game of the plains; yet he does not disdain, together with his charming wife (a niece of the late Gen. Sherman) to sit astride of the irrepresable wheel, which he has encouraged and popularized for military purposes.

It is in the field that Gen. Miles shows himself the truest soldier. Quick, alert, fearless, and untiring, he imparts much of his admirable enthusiasm to all of his subordinates, from whom he exacts and obtains the most thorough and conscientious effort. He has been fortunate, it is true, but even ill luck could never have kept down a man of his capacity, invention and indefatigable energy. The civil war gave him the needed opportunity, and the Hispano-American war no doubt will crown his eventful career with added lustre and lasting glory. His recent study upon the ground of European military systems must have admirably supplemented a long course of professional reading, thought and training. Nowhere, perhaps, has he given greater evidence of his ability for important command than in his prudent insistence upon the invasion of Cuba by a large, fully equipped, well drilled and disciplined army. In this stand so freely criticised The Criterion says his reasons have been military rather than hygienic, and they have been heartily indorsed by authorities no less eminent than Lord Wolseley and the distinguished German experts, Gen. Hoernig, Von Elpings and Boguslawski.

The World's Largest Locomotive. Material has been ordered by the Santa Fe for the largest locomotive ever built. The engine has been designed for mountain climbing, and it is said that the big Player engines and those built for the Santa Fe by the Dickson Locomotive Works will be but playthings when compared with this giant locomotive.

The engine will be built by the locomotive department of the Santa Fe shops in this city. Among its features will be a boiler built of one-inch boiler steel and cylinders whose dimensions will be 12 by 32 inches. It will have no "pops," as they will not be required. No fireman living would be able to build a fire that would create enough steam to burst the boiler of this mogul. The engine will have ten drivers, and it is estimated that it will be able to haul a third larger load than any engine the Santa Fe now has.

It is not known just when this great engine will be completed, as the material for its construction has just been ordered, but it will not be until some time late in the summer or early in the fall.

## CRUISER VESUVIUS.

HER VALUE HAS BEEN CONCLUSIVELY PROVEN.

Naval Officers Who Formerly Doubted New Her Strongest Advocate—Proof of Her Efficiency Given at Santiago—She May Throw Guncotton at Havana's Morro.

Some of those who have not believed in the value of the dynamite cruiser Vesuvius as an instrument of naval warfare are now among her strongest advocates since her wonderfully effective work against the defenses of Santiago. Admiral Sampson reported that the ship had thrown charges of guncotton ashore with the most satisfactory results and that her value in operating against fortifications has been of the highest character.

For years, ever since the completion of the vessel, in fact, the navy has been divided as to her usefulness in war time, and until some practical experiments could be made it was argued that it would be foolish to build more ships of her type. She was one of the early ships completed for the navy and the fastest in the service for many years, but she was always regarded as a failure except by a few officers who had tested her and had the amplest confidence that she would do everything she was designed for.

Her one great defect is her inability to turn rapidly, but this is owing to her extreme length and narrow beam. It is difficult for her to turn in a radius of less than 400 yards, although provided with twin screws. Naval officers have pointed out that another defect is the fact that her three tubes are stationary and can be trained only by the rudder. To train them therefore is sometimes a difficult matter in heavy seas. Down off the Cuban coast, though, the reports show that she has had apparently little trouble in hitting her targets and backing out of range in short order.

No opportunity has been afforded until the present, her advocates say, to prove the real efficiency of the ship, and the trials that have taken place heretofore were of such a nature as to prove nothing except the accuracy of her fire. Several years ago an extended series of trials was conducted off Port Royal and elaborate reports were made to the navy department, and the conclusion reached was that the Vesuvius was not of much value to the navy. Now all officers are willing to admit that she is a wonderfully efficient boat for certain classes of work and that her tubes have done more destruction to the outer harbor of Santiago than a bombardment by the entire fleet could have accomplished in a day. While it is an expensive process of inflicting destruction, the experts agree that it really costs far less than firing many broadsides of heavy shells against fortifications.

The tubes of the Vesuvius are of 15 inches calibre, but she has never yet fired the full charge they are capable of throwing. Sub-calibre charges of 5, 8, and 10-inch projectiles, containing from 200 to 500 pounds of guncotton, were used in the attacks on Santiago's defenses, and it is not regarded as probable that higher charges will be hereafter used by the ship.

Captain Sigbee is one of the strongest believers in the Vesuvius in the navy next to Lieutenant-Commander Seaton Schroeder, who commanded her for several years. One of the first messages sent to the navy department after the Maine disaster was a request that the Vesuvius be at once ordered to Havana. If there was to be any trouble with Spain it was thought the Vesuvius could do more effective work by tossing several projectiles of guncotton into the city than larger vessels could in a bombardment. The Vesuvius was at once prepared for service.

The German Emperor. William, Emperor of the Germans, has played a not unimportant part in the newspaper representations of the Hispano-American war. The presence of a fleet of German warships in Manila Bay was considered by many as an indication that Germany would not assent to American occupation of the Philippines.

He Walked. Fat Citizen—"You're a pretty small chap to be running an elevator, ain't you, bub?"

The Small Chap—"Yes, I guess I be. They hired me 'cause the darned rope broke so many times with the heavier elevator boys."

And the fat man walked.—Cleveland Plain Dealer.

For the Fourth. "We told little Dick he could choose his own birthday present."

"What did he choose?"

"He said he would take a soda fountain and a bass drum."—Chicago Record.

THE MINISTER'S MISTAKE. As a minister and a lawyer were riding together, says the minister to the lawyer:

"Sir, do you ever make mistakes in pleading?"

"I do," says the lawyer.

"And what do you do with mistakes?" inquired the minister.

"Why, sir, if I large one, I mend them; if small ones, I let them go."

said the lawyer. "And pray, sir," continued he, "do you ever make mistakes in pleading?"

"Yes, sir; I have."

"And what do you do with mistakes?" said the lawyer.

"Why, sir, I dispose of them in the same manner as you do. Not long since," continued he, "as I was pleading, I meant to observe that the devil was the father of lies, but made a mistake, and said the father of lawyers. The mistake was so small that I let it go."

## WON HIS LEAVE OF ABSENCE

It Had Been Refused But He Got It By a Particular Exploit.

There is a young soldier from Binghamton in Captain Hitchcock's company of the First Regiment, New York Volunteers, at Governor's Island, who won a much desired leave of absence one day in a novel way. This young soldier wanted to go over to New York for two days in the worst kind of a way.

Some friends from home, whom he hadn't seen since he marched out of Binghamton with his company nearly two months before, were coming down for a visit and had invited him to spend the time with them. As he hadn't had any leave either at Camp Black or at Governor's Island up to that time, he felt sure that there would be no difficulty in getting it then; and, accordingly, he put in an application for forty-eight hours.

In just one hour he got his application back, marked "Refused." There was no explanation of the refusal, and the young soldier was disgruntled about it and went off to sulk.

The next afternoon there was a heavy windstorm. It blew great guns on Governor's Island, and many things that were not secured were blown out into the bay. The most serious damage done, however, was the snapping of the halyard on the big steel flagpole on the parade ground and the sudden descent to the ground in consequence of the American flag. Officers and men regarded this as an evil omen, and, despite the fact that the wind was still blowing a gale, they ran out on the parade ground to rescue the flag and see what could be done toward fixing the broken halyard.

"I want a man to shin up that pole and fix that rope," said the officer of the day, who was one of the Lieutenants of the company. "Who will do it?"

The first half of the flagpole was solid enough, but up toward the top it was bending in the wind like a slender branch of a tree. It was a smooth climb, too, and it was evident that it would take a pretty good man to make it, and a pretty strong one to hang on after he reached the top. For a moment after the lieutenant called for a volunteer there was silence. Then a soldier stepped forward and said he'd make an attempt.

There was a burst of applause from the others as he tied the end of the rope around his waist. No one who heard him doubted that he could make the climb, as he had served six years in the navy before joining the National Guard. Half way up, the soldier stopped and yelled down that he couldn't go any further.

"The wind's too strong," he shouted. "I can scarcely hold on now."

"Come down, then," cried the lieutenant.

When the soldier reached the ground the lieutenant turned to the men and said:

"Will any other man try it? We must fix it, boys, for the flag can't fly until we do."

Two or three men said that they would do it willingly, if they could, but they were sure they couldn't climb a quarter of the way up. Then the young soldier, who had been sulking because his application for leave had been turned down, stepped forward and said:

"Lieutenant, I made application for forty-eight hours' leave yesterday and it was refused. I want that leave badly, and if you'll promise to get it for me I'll make a stagger at this job. I never shinned up a smooth steel pole, but I have climbed trees, and think I can do this job."

"I can't promise you the leave," said the lieutenant, "but I'll promise to do my best to obtain it for you."

"That's satisfactory," said the soldier, and a moment later he was going up the pole, the end of the broken halyard tied around his waist. He went up very slowly, resting every few feet and finally reached the top. His companions below were too scared to applaud, for the top of the pole was bending first one way and then another in the gale, and it looked as though the young soldier might be blown from his perch any second.

But he wasn't. He was earning that much-desired leave, and he succeeded in slipping the end of the rope through to the pulley block and bringing it down with him. Then he was allowed to haul up the flag himself, while the other soldiers cheered him. Thoroughly exhausted, he went back to his quarters, where, an hour later, an orderly handed him a paper, informing him that, on the recommendation of Lieutenant Blank, seventy-two hours' leave of absence had been granted to him by the Post Commander, Colonel Barber.

## PETER'S BRAVERY.

PROVED IT BY FACING BOTH FIRE AND DYNAMITE.

With Death Threatening the Soldier, Who Two Comrades Cut the Ropes Attaching a Charge of Explosives to a Barge Placed at Sandy Hook.

All our heroes are not on Cuban soil, or on the waters that wash the Cuban shores. Robert Peter, who is a private in Company A, Third regiment, New Jersey volunteers, is the hero of deeds that prove the truth of that statement. Peter longed for an opportunity to have his bravery tested in the midst of actual warfare. He has no fear of sharpshooting or Spanish marksmanship.

Private Peter has come face to face with a dangerous situation, and has demonstrated that he is made of the material that gives us our heroes. During a heavy thunder storm a pier at Sandy Hook was set on fire. At the pier was moored a float loaded with high explosives. Peter realized that a destructive explosion was imminent unless the float was removed to a place of safety. On the pier were two mines, each containing 100 pounds of dynamite, which further added to the danger of the situation.

Peter discovered the fire when the tongues of flame were almost licking the barge. He ran to Lieutenant McGregor, of the Engineer Corps, and breathlessly exclaimed: "Lieutenant, the pier is on fire. The float, with explosives, is fastened there."

"Yes, I know it," the lieutenant replied, "but the fire has made such progress that nothing can be done—"

"Yes, something can be done," Peter replied, saluting. "We can cut the hawsers and set the float adrift."

"That's impossible," the lieutenant replied. "It would mean death to the man who attempted it."

"Can't I have permission, sir?" the private pleaded, "to cut the ropes and save the float?"

Lieutenant McGregor hesitated, and Peter continued: "Give the order, sir, I'll do the job."

"No, I shall give no orders to that effect," the lieutenant replied.

Peter only listened long enough to understand no order would be given and then determined to act. He got Arthur Crowell and Thomas Orrell to come to his assistance.

Peter leading the way, the three men ran onto the pier with open knives in their hands. They threw themselves on the string-pieces and began hacking at the hawsers that held the float. One after another the severed ropes dropped into the water, and the float, released, moved silently out of danger.

Then the three men ran off for their lives. The float was at a safe distance when suddenly there was a terrific explosion. The dynamite bombs had exploded, and the heavens were lighted with a blinding flash. Peter and his two comrades were safe; so, too, was the float and its cargo. They still talk of Peter's bravery down at Sandy Hook, and Lieutenant McGregor is lavish in his praises of the heroism of Peter, Crowell and Orrell.

Peter was born in Dundee, Scotland, on November 30, 1863. He would have joined the British army when he was seventeen years old, but his parents objected and pleaded with him not to. It was his mother's entreaties that led Peter to say: "All right, mother, I won't join the army, but I would like to become a soldier." It was soon after this that Peter left home. He kept his promise to his mother, and now for the first time he is ready, as a soldier, to meet an enemy.

Peter has faced death three times. His life was nearly crushed out a few years ago when he stopped a runaway, to save from harm, perhaps death, two women who were taking an afternoon drive. Peter has a scar on one of his cheeks. It was caused by a bullet.

Peter is an expert horseman, and acted as orderly to Colonel Lee and Chaplain Glazebrook, who are now at Pompton Plains. He would like to be with the Rough Riders in Cuba. He is a modest fellow and will not believe that anything he has done thus far has exacted any great amount of heroism.

Harbor Defense.

The American naval victories early in the war removed all fear of Spanish invasion which had been felt in the Atlantic Coast cities; but then there was never very great danger. This illustration is of the Zuluiki fifteen inch gun.

THE ZULUIKI FIFTEEN INCH GUN.

This fifteen inch gun, at Sandy Hook, at the entrance of New York Harbor, and is a sample of our coast defense.

On Sentry Duty.

It is related of an Irish recruit on sentry duty at Chickamauga one night that he challenged a figure in the darkness with the usual "Who goes there?" The reply, "The officer of the day," was something he was not prepared for, so he responded, "Then what the devil are you doing out here at night?"

An Irish sentinel of the Fifth Missouri at Chickamauga was sharply reproved by the officer of the day for permitting persons to approach without giving the countersign. The Irishman listened patiently and was then about to walk away when the officer called sharply: "Well, you haven't asked me for that countersign yet." Quick as a flash the soldier thrust his bayonet point uncomfortably close to the officer's breast, while he primly exclaimed: "I have no bayonet countersign, and I don't care about it."

## THE NAVY'S

A Great Task in Building a New Navy.

Close to the water front of the factory in Washington the new battleship is completed, and by the time it has submitted proposals for construction of the big battleship.

monitors recently built for it, ready to test submarine monitors, and was representing the proposed new additions to the navy's fighting strength on the sea. There is no tank in the world equal to this in size, equipment, and complexity of its electrical devices. It is longer and wider than the best owned by foreign countries, and covers an area water fully equal to that of the largest torpedo boats. It looks an immense battleship, and in fact would make an excellent one.

The plan of having a big battleship housed over with brick sides and concrete bottom, in which little models of all new ships to be built for the navy should be tested, was suggested some years ago by Chief Constructor Higginson, who had noted the excellent results obtained in Great Britain and France by testing designs of new ships before their actual lines were decided upon by constructing small models and having them towed through the water at given rates of speed. The resistance offered by the models to the water formed a basis on which close estimates could be made of the probable speed of the actual ships when in service, and faults in design could be readily detected and corrected before the vessels were completed. Two years ago congress appropriated \$100,000 with which to build a tank, and under direction of Constructor Taylor the work has so advanced that it will be available in a few weeks.

When a new vessel is to be built, a model is made of it about eight feet long, one being observed to have the lines accurately moulded. This model is made of wood and covered with a mixture of paraffin and wax, to give it a smooth surface. Running the model through the water, several feet above the water, is an electrical measuring apparatus, to which the model is attached and by which it is drawn through the water at certain speeds. The waves created and their character are noted, and the resistance caused is measured and the effect produced on the water of the vessel are closely watched. When the tests are complete, the design of the proposed vessel are altered to suit them and by this way the designers can estimate accurately the amount of steam power required, and design through the various stages of speed. Models are being made of the time warships, which will be the first of a new tank. It is expected that valuable lessons will be learned from the experiments now being made, and that the results may be made in the new ships.

The Secretary of the Navy. The navy of the United States, the first blow in the war was the

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