

IF WAR SHOULD COME.



THE recent terrible occurrence in the harbor of Havana, which resulted in the destruction of millions of Federal property in the shape of the battleship Maine and the death of nearly 300 sailors, started a great deal of speculation as to the real value of our navy and its relative importance among the naval armaments of the world. It has revived the discussion of what the result of a war between the United States and a foreign nation would be.



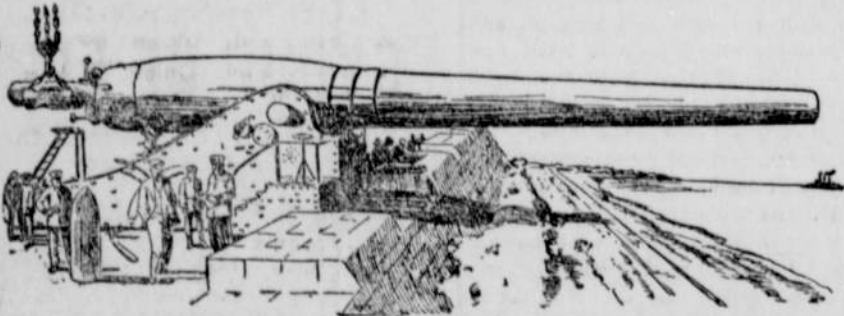
DISAPPEARING GUN AT NEW YORK.

and brought forward the three opinions concerning such matters, viz.—the theory which holds that we have no more use for a navy comparable to that of the great nations of Europe than we have for a standing army like that of Great Britain, Germany, France or Russia; the stand that the money put into our navy would better have been expended in coast defenses; and lastly that opinion which demands that on land and sea we should be equally powerful to any nation on earth.

It is now over half a century since the guns of this country were turned upon a foreign foe, and this long period of peace has inclined a very large proportion of American citizens to the first named course of reasoning. The middle ground position is held by the coast defense theorists. They believe that with our coast defended by modern fortifications and guns we can almost dispense with a heavy navy altogether. The third party believes in the widest possible display of our naval power. At the present time the only country with which we are likely to become embroiled in strife is Spain, and as a war with the Spanish would be largely a naval one it is therefore of interest to consider what the possibilities of such a war might be.

Since the Maine went down numerous reports have been spread broadcast that Spain is now superior to us as a naval power, and many persons have grave fears as to the outcome of a conflict. Let us see. Since 1883 Congress has authorized the construction of seventy-seven war vessels, at a cost of \$134,430,700.10. Sixteen of the vessels have not yet been completed. The vessels authorized since 1883 are as follows: Battleships, first-class, nine; battleships, second-class, two; cruisers, 18; gunboats, 15; harbor defense ram, one; monitors, six; dynamite cruiser, one; torpedo boats, 21; submarine torpedo boat, one; training ships for cadets, two; dispatch boat, one.

Of the sixteen ships of war now under construction, the Secretary of the Navy estimates that all will be completed during the present year except



THE GUN THAT GUARDS HAVANA HARBOR.

the five battleships, which will probably not be ready for service until the latter part of the coming year. It is, therefore, obvious that the United States is not so powerless upon the seas as some would have it understood.

During the past ten years there have been expended yearly on seacoast fortifications and their armaments and for submarine mines and torpedoes the sum of \$40,000,000; our principal seacoast towns have thus been put in condition so that, with the aid of the navy, the country could easily resist the attack of any one of the great naval powers of the world.

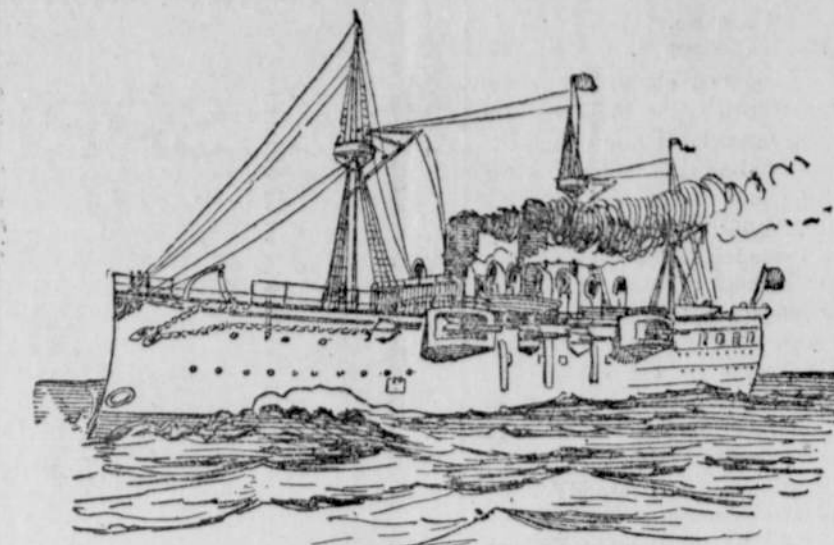
There is no doubt as to which of the two nations, Spain or the United States, is the stronger from a naval standpoint. In ships and armament we have by far the superior navy. While Spain has more men in her navy, we outnumber her in ships, although she includes some splendid cruisers in her list. Like us, she is adding to her navy, replacing the boats she lost in 1895. She is obliged to have this done, however, abroad, as she has no shipyards of her own. Her limited credit has kept back this work, and it is not likely that the boats now under way would be completed even on "rush" orders before two years from now. Then, too, the classifications made in the tables favor Spain, placing boats in the second class of battleships which, although heavier than our sole remaining specimen of that class, could not cope with it.

On paper Spain has about the same number of warships available for

fighting as the United States has on the Atlantic coast, eliminating torpedo-boats, which can operate, by the nature of things, only in home waters. But what about the ships themselves? Spain has only one first-class battleship, the Pelayo; we have in the East the Indiana, Iowa, and Massachusetts. Spain strictly has no battleships of the second grade; we have only one now, the Texas, sister ship practically of the Maine. Spain has one iron and useless monitor, the Pulg-Cerda; we have four of them, matchless fighters—the Puritan, Terror, Miantonomah, and Amphitrite. Spain has six armored cruisers, all of them practically in splendid fighting trim—the Almirante, Oquendo, Carlos V., Infanta Maria Teresa, Princesa de Asturias, and Vizcaya. We have two such vessels—the New York and Brooklyn. For defensive fighting our four monitors are superior to the three armored cruisers which we seem to lack in comparison with Spain, but, allowing that they are only equal, it may be said that in that class the navies of the two nations are of equal strength.

That throws the comparison back to battleships, of which we have four available, three first-class and one second-class, and of which Spain has only one available, the first-class Pelayo. The armament of the monitors and armored cruisers on both sides is practically equal. The armament of battleships is four to one in our favor, and it is the kind of armament that tells true in a naval battle. So much for strictly fighting ships. We have ten, Spain has six. In protected cruisers Spain has not more than fifteen and we have ten available on the Atlantic coast. The armament of our ten, careful calculation shows, is a little more than equal to that of Spain's fifteen.

range. The deadliness of these arms is great enough under those circumstances, as China and Japan know to their cost. What the result would be if several Spanish and United States battleships met in closer quarters may easily be imagined, and it is no exaggeration to say that the chances favor the destruction of nearly everyone engaged.



UNITED STATES STEEL PROTECTED CRUISER COLUMBIA.

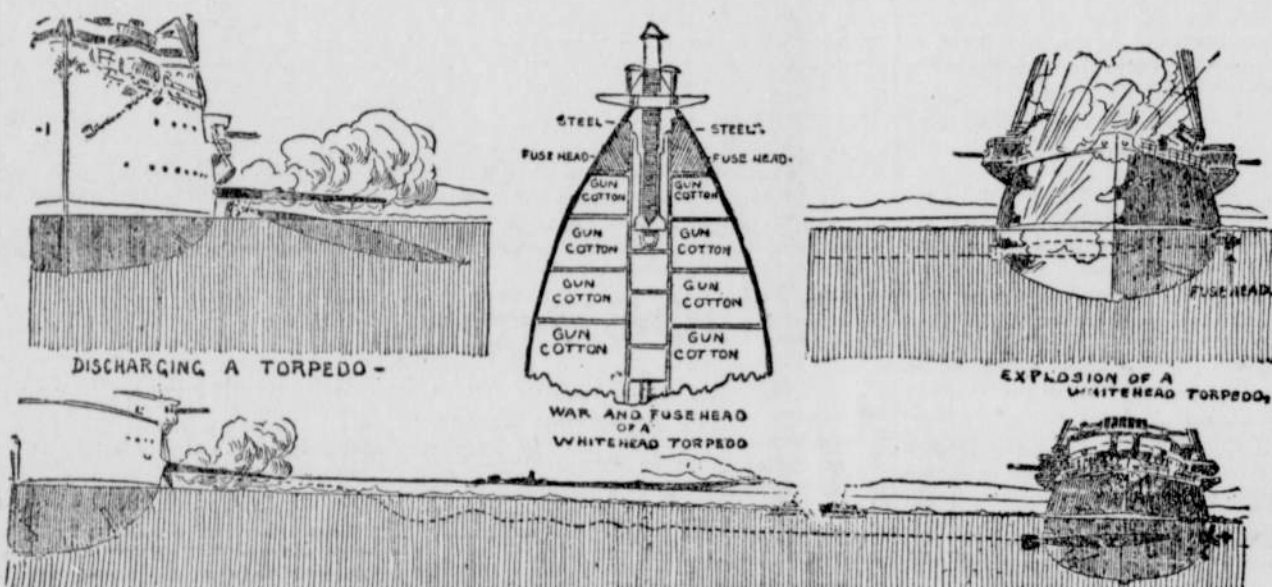
Modern gunnery and armor-making have kept such steps together that no sooner has a plate been invented which would resist the most penetrating projectile of that time than a gun was speedily devised or an explosive discovered which necessitated the invention of a plate of still greater resisting power. This game has gone on, until the modern ship is a gigantic floating hulk, the propulsion of which through calm and known waters is no easy task, to say nothing of its management in heavy seas or during an engagement, where rapid action is necessary. But besides the things visible with

would immediately touch a button, the explosion which followed would completely wreck the warship and would doubtless kill all on board. The work of preparing these mines has been done very secretly, and no one outside of those in charge of the harbor defenses knows where they are. The sunken casemates, too, have been built with caution, and their situation

is not known either. The necessity for this caution is apparent when it is remembered that any interference with the wires by the subject of some foreign nation might disturb the work so that none of the mines could be used.

Another great means of defense is in the big disappearing guns, which work as if they have human intelligence. No fort is necessary for these guns. The gunners are absolutely protected by a big parapet. When the gun is at rest, it, too, is concealed behind the parapet, where it is loaded. When firing becomes necessary ponderous machinery raises the big cannon so that its mouth points over the parapet. In thirty sec-

THE "DEVIL OF THE SEA"—HOW THE TORPEDO DESTROYS.



A Whitehead torpedo fired from an overhead tube and its progress through the water. On striking the water the torpedo is propelled at tremendous speed by its own engine. In the forward portion of the torpedo is carried an explosive charge of 150 pounds of gun cotton. The mass is exploded by a percussion fuse fitted into the nozzle of the weapon. The torpedo would wreck the strongest ship afloat.

Of gunboats Spain seems to have twenty; we have not more than twelve on the North Atlantic coast. Nearly one-half of Spain's gunboats, according to Lord Brassey, the great English authority, are "small steamers from 80 to 345 tons." In the matter of unarmored ships, the commerce destroyers, Spain has a slight advantage in numbers; we have a slight advantage in strength. We could use our torpedo-boats; Spain couldn't get hers over here. We could use our ram Katakhdin and our Holland submarine boat; Spain has no such vessels.

In the matter of ships and guns, de-

which modern cruisers must contend is the problem of submarine warfare. The invention of Ericsson has been improved upon, both as regards the ability of warships to eject the deadly torpedo itself and the torpedo-boat capable of submerging itself wholly or in part. Inventors all over the world are working upon the submarine torpedo-boats and rams, and, while they have not attained the success of Jules Verne's fancy, it is believed that if they have not already solved the problem it is a matter of a short time till we shall have a boat capable of submerging itself for a time sufficient to do terrible damage to the largest battleship and still not be in sight during the engagement.

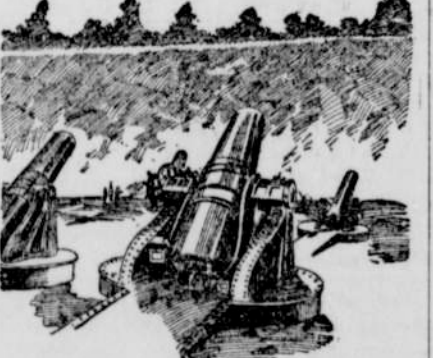
This is not speaking of the established practicability of the sunken torpedo or more to be used in harbors and discharged by electricity from a distance. These last can be utilized for coast defense and are very effective. They could destroy any cruiser anchored or sailing over them, but are only useful under those circumstances.

The war department has guarded with absolute secrecy the plans for all its coast defenses. It is scarcely known outside of army circles that New York is one of the most strongly defended towns in the world. No vessel could get within fifteen miles of the battery without meeting a worse fate than that which befell the Maine.

The entire harbor is thoroughly mined and wires run to underground casemates where the operators work. The harbor is divided into sections and squares each of which is known by a letter or figure. For instance, in case of war, if a Spanish vessel were sighted, word would be telegraphed

ons the gunners have trained the cannon properly, and an enormous projectile is sent flying ten miles over the sea. Woe to the vessel it strikes! Armor has not yet been made strong enough to stand against the shot fired from these enormous machines.

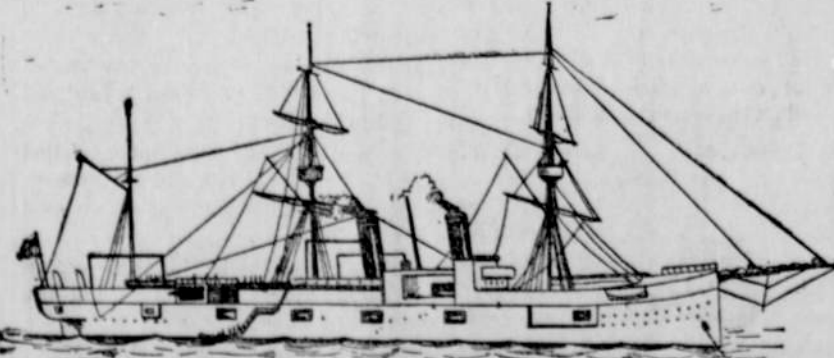
At present the inner harbor of New York is guarded by two 12-inch, three 10-inch and five 8-inch disappearing



SUNKEN MORTAR PROTECTING NEW YORK

guns, as well as thirty-two 12-inch mortars. These are all completed and put in position. Work is now going on for other disappearing guns which will be finished this year. The southern and eastern entrances to the harbor are more fully protected than the inner harbor itself. Here is an armament of 21 12-inch guns on lifts, 15 10-inch and 9 8-inch guns on disappearing carriages, 176 12-inch mortars and many submarine mines operated from five mining casemates.

Most of the work of a defense has been done by the officers at the United States School of Engineers at Willer's



UNITED STATES STEEL PROTECTED CRUISER CHICAGO.

Point, New York harbor. Twenty-three officers and 380 enlisted men are stationed at Willer's Point, and their work is mostly with torpedoes and high explosives. Occasionally mines are planted and exploded, just as in regular warfare. Vessels are sent out to try and come without being seen, and mimic war holds full sway.

John Cruise, of Lee County, Iowa, writes to the Rural World as follows: "Have just had some interesting experience with mange or scab on pigs. Lost fourteen out of thirty-six, from dousing them with everything. I heard or read about. Was in despair, until

FARM AND GARDEN



A New Ornamental Asparagus.

One of the best and most attractive house plants of recent introduction is Asparagus Sprengeri, which is rapidly superseding the once so popular smilax for floral decorations. Our engraving shows its graceful form and habit when grown as a pot plant, but it is equally well suited for planting in hanging baskets. Its fronds are frequently four feet long, of a rich shade of green and very useful for cutting, retaining their freshness for weeks after being cut.



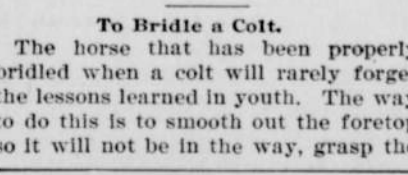
ASPARAGUS SPRENGERI.

As a house plant it has exceeded expectations, as it stands dry atmosphere better than the older kinds of ornamental asparagus, and is not particular as to any special position. It delights in a well-enriched soil, rather light in composition, with plenty of drainage, and grows very rapidly. It is decidedly pretty when in bloom, its little flowers being pure white on short racemes, and the anthers are of a bright orange color. —American Agriculturist.

Wood Ashes for Potatoes.

Of the fertilizers that can be secured on the farm unleached wood ashes make one of the very best that can be used with potatoes, writes N. J. Shepherd, in Nebraska Farmer. They can be applied in the hill or in the furrow broadcast, but it will be an exceptional case when a sufficient quantity can be secured to apply broadcast over the surface. For this reason applying in the hill will prove most economical. The ground can be prepared in a good tilth all ready for planting and the furrows run out and then a small quantity of ashes dropped where each hill is to be planted and stirred in the soil, and upon this the seed can be dropped and covered. Potatoes require potash and phosphoric acid, and this can be supplied with unleached wood ashes, bone dust or bone meal or in a commercial fertilizer with less waste than in almost any other way. If farm or stable manure is used it should always be well rotted and fined and then thoroughly incorporated with the soil. My experience is that applying fresh manure to the soil just before planting furnishes conditions favorable to the development of scab and also in many cases produces a fungus growth of tubers.

To Bridle a Colt.
The horse that has been properly bridled when a colt will rarely forget the lessons learned in youth. The way to do this is to smooth out the foretop so it will not be in the way, grasp the



BRIDLING A COLT.



BRIDLING A COLT.

brow band of the bridle in the right hand and the bit with the left. The bridle is thus held in position, and with the fingers of the left hand entrance to the mouth is made by pressing against the gums between the incisor and jaw teeth. This will seldom fail to cause him to open his mouth, and the bit can easily be put in, but it should not be done suddenly or violently. After the bit is in the mouth the ears should be carefully and gently placed in position. —Iowa Homestead.

Cure of Mange on Hogs.

John Cruise, of Lee County, Iowa, writes to the Rural World as follows: "Have just had some interesting experience with mange or scab on pigs. Lost fourteen out of thirty-six, from dousing them with everything. I heard or read about. Was in despair, until

common sense came to my aid. I figured it out that it was a parasite under the skin, and to cure the pig the parasite must be destroyed. So I mixed up some turpentine and coal oil, half and half, and added quite a bit of sulphur. Then, while the pigs were at the trough, I squirted the mixture all over them, from nose to tail, by means of a machine oil can. Have not lost a pig since, and have not been obliged to repeat the dose."

Barley as Stock Food.

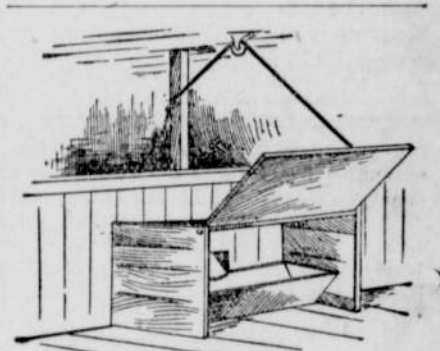
Barley is not extensively grown, yet it is a superior stock food and will grow on soils that will not produce wheat. In England hogs are fattened on barley, and the meat contains more lean than that produced from corn. In feeding pigs as a test barley gave better results than corn, a pound of growth being secured from 3 1/2 pounds of barley, at a cost of 2c per pound, which was better than from any other food. Pigs, however, grow more rapidly than adult hogs. Ground grain proved superior to the unground. In steer feeding both corn and wheat surpassed barley, and with lambs the results were about the same with corn, wheat and barley. Corn and barley mixed gave better results than either alone in some cases. These tests should make barley a favorite where it is not now grown at all.

The Razor-Back Hog.

Recently the Dallas News had from its Fort Worth correspondent the following: "Certain prominent hog raisers now in the city claim that use has at last been found for the hitherto useless razor-back hog. They state that after these hogs have been allowed to run in the bottom for the summer months, subsisting on mast and roots, they can be easily fattened in the autumn by being turned into corn fields where the black-eye pea has been planted between the corn rows, and that although they do not acquire any very great size or weight, their meat, owing to the wild diet during the summer, gives the ham a flavor that equals, if not exceeds, that of the celebrated Westphalia hams of the Black Forest in Germany."

A Safety Pig Trough.

The pig will get into the trough when one wishes to clean it out, and he will put his head under the spout when one wishes to pour in the milk. The device herewith shows how the pig can be kept away from the trough until everything is in readiness for him to eat. The swinging door is closed until the trough has been cleaned and the milk or other food poured in. Then it is raised and all the usual bother obliterated. Have a ring on the rope to avoid the necessity



THE SAFETY PIG TROUGH.

of having to tie it whenever the swinging door is raised.—Orange Judd Farmer.

Water Over Underdrains.

It sometimes happens when severe cold comes before snow and rain that the ground freezes so hard over drained land that when the snow is melted the surplus water cannot at once make its way to the drain beneath. Sometimes in winter these sheets of water will be frozen over, during some cold spell, and while thus covered with ice, the water beneath it will find its way through the tiles and disappear. No harm comes to grass land thus left covered with ice for two or three days. But winter wheat is sometimes winter killed by ice on the edges of the pond, where the freezing of the water catches the wheat plant in its icy embrace, and often snaps the stem where it is joined to the root at the surface of the ground.

Skim-milk Cheese.

There is much more butter fat left in milk after it has been skimmed than is generally supposed. If any one doubts this, let him hold up a bit of skim-milk cheese over a hot fire and see how quickly the fat will exude from it. The toasting of cheese makes it more easily digested, though skim-milk cheese is at the best hard to digest, and cannot be eaten except in very small quantities by persons whose digestion is weak. Bread and cheese naturally supplement each other, as bread is mostly carbon, while cheese, especially that from skim-milk, is mainly nitrogenous or strengthening. Eating foods hard to digest, if the stomach is not at any time overloaded, is a good means of strengthening that organ.

Oats for Young Animals.

There are two reasons why oats are an excellent feed for young and growing stock. They have enough bulk because of their chaff, so that the grain in moderate amounts will not heat or cake in the stomach, and the character of the grain supplies just the nutriment required for growing animals. It takes very little oats per day to keep a yearling calf or a colt thrifty and greatly increase its value after the winter's feeding.

Have Wheels in Their Heads.

When young men tell you they never read experiment station bulletins, that they take no stock whatever in the farm institutes, and, at the same time, they are about to be sold out under mortgage on a farm their old father gave them free of debt, there is something wrong in the brain machinery of those men, and no mistake.—Herald's Dairyman.