TO MAKE SHIPS UNSINKABLE

Plan Was Tested on Board the North Carolina.

COMPRESSED

Engineer Asserts It Will Buoy Up a Vessel After Collision - Captain Marsh Thinks the Method May Revolutionize Naval Warfare.

A method for keeping water from entering ships through holes by compressed air was tested on board the North Afterward he spoke enthusiastieally of the method. He says it will prevent vessels from going to the bottom following collisions or when hit by torpedoes or mines. He thinks it will revolutionize marine warfare.

The method does not depend on any device or mechanical invention. It is merely an adaptation to the compartments of ships of the science of air pressure as already applied to tunnel building. The young engineer to whom the method first occurred and who helped Captain Marsh apply it to the North Carolina is W. W. Wotherspoon, one of the engineers of the New York subway as well as of the East river and the Pennsylvania tubes.

The method consists of sealing up the compartment in the vessel where the hole is. Compressed air is then forced into it through a tube, which has already been installed and connected with the air compressors of the ves-sel, such as on a battleship are used to expel explosive gases from guns after firing.

Engineer Explains.

According to Mr. Wotherspoon, it takes only from three to twenty pounds pressure a square inch to force out all the water in the compartment to the level of the hole.

The trouble with putting twenty pounds a square inch pressure into a ship's compartment is that it will cause the deck above or sides of the compart ment to buckle, and that is where Mr Wotherspoon's method comes in. in order to keep the decks and bulkheads around the damaged compartment from buckling a lower pressure is used in the adjoining compartments. This, it is said, keeps the deck above and the bulkheads between compartments in

If the water tight compartments of vessels were always really air tight the discovery and use of the new method.

The foregoing and other instances discovery and use of the new method. according to Captain Marsh, would not be so important, but water tight compartments never are really water tight. No matter how tightly a compartment is locked up on a vessel, practical experience always shows, according to Captain Marsh, that the water finds its way into other compartments just as it did in the case of the ill fated Republic.

"If the captain of the Republic had understood the method we have tried today and if the different compart-

Assisted by Mr. Wotherspoon Captain Marsh tried the experiment on a forward compartment on the North Carolina under the protection deck. When the seacocks were opened and the wacompartment the vessel listed to starboard a trifle. Compressed air was then forced into the tank. In about ten minutes after the air pump was started there was no water in the tank.

Captain Marsh's Opinion.

Simultaneously with the exertion of the twelve pound pressure in the supposedly damaged compartment a seven pound pressure was pumped into all the surrounding compartments, thus keeping the decks and bulkheads safe. A three pound pressure similarly was exerted in the compartments next to those in which the seven pound pressure was used.

"This new method will revolutionize the business of ship saving," said Captain Marsh. "When I applied to the navy department recently to be allowed to try out the method I asked it to send me some pipes and air gauges, so that I could connect every compartment on my vessel with the air compressing plant.

When I mas making the experiment this morning the attention of the man at the air gauge wandered for a minute, and a few too many pounds pressure got into one of the compartments. The result was that the deck above began buckling and would have burst had the sailor not noticed what was happening and given the signal to turn the pressure off.

"Every battleship in the navy can make itself practically unsinkable by applying to Washington for \$125 worth of supplies in the shape of pipes and gauges. This new method will permit us in a naval action or after a collision to repair all holes beneath the water line from the inside."

Harvard Plans Great New Library. Plans for a new library building at Harvard to cost \$2,000,000 and provide shelving room for 2,400,000 volumes have been drawn by direction of a committee of the board of overseers.

The mark simply means that an application has been actually filed in the Patent Office. It does not affect an inventor's rights before the Patent Office to manufacture and market his invention after the application is filed and before the patent is grant-ed, but there is no real protection against infringers until the patent has actually issued.

step to be taken, is to obtain the

The extent of profit frequently de-

dollars. These remarks only apply to patents of ordinary or minor value. They do not include such as the telegraph, the planing machine, the first kind will better illustrate cash.

my meaning.
"A man obtained a patent for a slight improvement in straw cutters, took a model of his invention are seen at a glance, evidently anthrough the Western States, and after a tour of eight months return-ed with forty thousand dollars in

cash or its equivalent.
"Another inventor in about fifteen months made sales that brought him patents, sixty thousand dollars, his invention With being a machine to thrash and clean grain. A third obtained a patent for a printing ink, and refused fifty thousand dollars, and finally sold it for about sixty thousand dollars.
"These are ordinary cases of min-

or invention, embracing no very considerable inventive powers, and of which hundreds go out from the Patent Office every year. Experience shows that the most profitable patents are those which contain very little observer of little value."

The Goodyear Rubber patents, the Sewling Machine Patents the Paul

Sewing Machine Patents, the Bell Telephone patents, have brought many millions of dollars to their owners, and are notable instances of the extraordinary value of simple inventions, when of such a nature as to enter extensively into the require-ments of the general public.

Minor contrivances of less universal need are still, in some cases, of great worth. An example is seen in Dr. Higgin's Sliding Thimble for umbrellas. This is a little contrivance for pushing umbrella springs and protecting the fingers. The doctor states he received more than one hundred thousand dollars in cash as sold. royalties from his patents. cured American, English, He so-French, German, and other patents at a small cost. His foreign patents have

are significant in showing that good business management is an essential ten very remunerative. element in effecting the introduction and sale of a patent. It is, therefore, often advisable to transfer a share or interest in the patent to some business acquaintance for the purpose of forwarding the introduction of the invention.

How and What to Invent.

inventors, attracted by the adver-ements of lists of "inventions tisements of lists of "inventions wanted," send for such lists and proceed to work on suggestions therein ments of his ship had been equipped with the simple system of pipes, air wealth, little thinking that many of gauges and air compressors we have used the vessel would never have devices already patented, and the sunk," said Captain Marsh. are not in demand.

This is only a scheme to secure patent fees. The inventor has made great progress when he has found a real chance for invention. Ordin-ary common sense teaches that no ter was allowed to rush in and fill the one having valuable knowledge of compartment the vessel listed to star. give such knowledge away freely. Often there are developments in an industry which come to public notice, demanding new inventions.

The way to invent is to keep thinking; and to thought add practical experiments. Examine things about you and study how to improve them. Note all defects in the objects of everyday use about you, and see if you cannot devise some means of overcoming these defects.

Many opportunities may be taken advantage of by noting what is selling well in your neighborhood, or what is in general use or coming in-Try to keep well informed of what is going on.

Hints on the Sale of Patents.

No sooner does any person's name appear in print as the patentee of a new invention, than he receives by mail a shower of letters and circu-lars from a gang of patent knaves. The patentee is invited, if he wants to realize immediately, say one thousand, two thousand, or ten thousand dollars, to send forward to the agent a small advance fee. Thus instead of helping the patentee to obtain money, they begin by drawing money from him; upon this they live and flourish. We are often asked if these imposters, who so pressent all the process of the state of the stat ingly and plausibly claim to be able to sell patents, are reliable, and whether they ever effect sales. We regret to be obliged to say they are unreliable, and we are unable learn of their making any sa sales. There are about twenty-five thous-and new patentees every year, from many of whom these patent sale agents obtain money under false pretenses. pretenses. They busy themselves in writing letters to inventors and in working them up to the remitting point, but have no time left for the drudgery of patent-selling, even if they had any ability in that direc-tion. There is no trickery too low for some of these sellers, and no end to the falsehoods they tell. Another popular method of extracting fees from the unwary is to propose the formation of a stock company. The formation of a stock company. The

There is no special statute covering the use of the stamp "Patent Applied For" or "Patent Pending."

The mark simply means that an application has have means that an application has been declared that have means that an application has have means that are means that an application has been declared to the hard means that are means that are means that an application has have means that are means tha is ingeniously set forth that the stock cannot be sold until the com-pany has been duly incorporated, and the inventor is dazzled by the sum suggested as a proper capitalization of the company, may vary from \$100,000 to \$5,000, 000, according to the nature of the Will it Pay to Take a Patent?

As a general rule, an invention is and is paid in the stock of the comworth little or nothing until the patent is obtained; and until then, no edy is to induce the inventor to employ it is a constant. one is likely to buy. Therefore, the ploy the services of a "lawyer" to sefirst thing to be considered, the first cure the incorporation of the company. The fee for this service is from \$100 to \$250, while the actual outlay on the part of the "lawyer" is pends upon the business capacity of only a small fraction of this amount by his activity will make a fortune from an unpromising improvement, while another, possessing a brilliant invention, will realize little or nothing, owing to incompetence.

In speaking of this subject is Carolina while she was in the Hudson river during the recent mobilization of warships at New York. Captain C. C. Marsh, commander of the North Carolina while she was in the Hudson official report, a chief examiner of elaborately engraved stock certificate the Patent Office says: "A patent, if it is worth anything, when properly managed, is worth and can easily be only gainer by the transaction is the lina, conducted the experiment in personal deliars. These remarks only appear upon which it is printed. The promoter and his colleague, the "lawyer," who has attended to the incorporation such a proposition is made to the inventor, he can generally test the sinand the rubber patents, which are cerity of the promoter by insisting worth millions each. A few cases of upon part payment being made in

If the invention is one of import ance in the arts, or of such a nature that its originality and usefulness tee will be able, without much effort, to make advantageous arrangements for the legitimate sale and introduction. Such are quick-selling

With the slow-selling patents the case is different. There is no easy and royal road to the sale. It requires active effort and constant attention until it is effected. In general the patentee himself is the best to give a striped effect, and for tailor-selling agent, for he is familiar with ed wear two toned wool mixtures the merits of the invention.

known of en effects the sale of a pat-ent. This may be done in various ways: by advertisements in newspa-pers, by cards, circulars, pamphlets, by local and traveling agents.

Advertising should be done by the patentee, in his own name and ad-dress. He thus makes the invention known to the public, receives the di-rect benefit of all replies, and his money does not go into the pockets of swindlers.

The license and royalty plan is ofpatentee and a partner or manufac-turer, by which the latter, in consideration of license to make the thing. agrees to pay to the patentee a specified sum upon each article made or

is to commence the manufacture of the article in a suitable locality, and when it is so far under way to exhibit progress and merit, then to sell out the business with license un-der the patent. This method is of-

The patentee may subdivide patent into as many different classes of rights as he chooses, and sell each class by separate agents or otherwise, as he prefers.

Too Pretty a Lake For That, "China gave me many a shock," said

the returned traveler. "but the one that nearly carried me off was administered in the Fuchau district. Out in the country I came across a beautiful little lake drained by a beautiful little river. The scenery was marred somewhat, however, by signs stuck up every few yards at the edge of the lake. I wondered what their import was, and on one of my trips to the lake I took a missionary friend along to translate.
"'Oh, that,' said he. There are not

many of them left in this district. That is a warning that girls must not be drowned in this lake."

"Somehow I could never admire my beautiful lake so much after that, although maybe I ought to have admired it more." -New York Press.

Ponies and Horses.

I have been asked a great many times if ponies are really more intelligent than full sized horses. They certainly appear to be. But the intelligence of any horse will develop under petting and human companlonship, and there is no doubt that other horses, if given the same privileges that ponies enjoy and if their size admitted of their being handled and managed in the same way, would prove equally intelligent .- Outing.

Sheer Waste.

Wife-John, is there any poison in the house? Husband-Yes. But why do you ask? Wife-I want to sprinkle some on this piece of angel cake and put it where the mice will get it. Wouldn't that kill them? Husband-Sure, but it isn't necessary to waste

Stretches Politeness. The Duchess of Blankshire (who has made a poor drive)-A little too much to the right, I'm afraid. Obsequious Professor (who is instructing the Duchess)-Oh, not at all, your grace; the hole has been cut too much to the left.-Golf Illustrated.

Variety.

Blodds-I never knew a woman so changeable as Mrs. Dashaway. Slobbs-I know it. She never even wears the same complexion twice."-Philadelphia Record.

One Way. Wigwag-I never knew such a fellow as Bjones! He is always looking for trouble. Henpecke-Then doesn't he get married?

YOUR SMART SUIT.

Fashion Approves Striped This Winter. Fabrics



FAILORED SUIT OF BLACK AND WHITE STRIPED CLOTH.

Paris is mad over stripes. Even fur coats have the pelts cleverly arranged ed wear two toned wool mixtures showing a stripe in the weave are To make the merits and import-ance of the improvement publicly cloths.

The black and white striped suit illustrated with an overskirt over a black velvet petticoat and coat trimmings of white cloth and black velvet is the last cry in French chic.

How They Manage It In London. Ostrich plumes are as much of a necessity to the London coster girl on her outings as are the pearl buttons to her masculine companion, and the ten a most profitable method of em- big trimmed hats with their drooping ploying patents. This, in effect, in-feathers are familiar in all gatherings volves a sort of contract between a of this class. Many of the girls canof this class. Many of the girls cannot afford to keep their money tied up in useless plumes, and there thrives a brisk industry in the hiring of these feathers. The loan of a single plume for a day costs a quarter, or for a dol In some cases an excellent method iar a gorgeous trio may be had for an outing, to be returned promptly the next morning.

Weather conditions cause the terms to fluctuate somewhat, since a wet or foggy day will take the curl out of the feathers and make recurling nechis essary, for which 'Arriet has to pay an extra quarter.-Tit-Bits.

> Here's Way to Sew Hooks and Eyes To sew on hooks and eyes evenly take needle just the length of the distance apart you want your hooks. Make eyes with double thread by taking two stitches at same place with the width of the hook, buttonhole the stitch and run needle between the material just the length of the needle to make the next, and so on. Sew on hooks a needle length apart and you have them all even.

Gown For the Older Woman. This rich costume was worn recent ly by the grandmother of a bride at a fashionable wedding. The black satin shaped drapery on the skirt keeps the



COSTUME OF BLACK EMBROIDERED GRAY.

lines of the costume straight and narrow without being too extreme in ef fect. The bodice with its embroidery of gray silk and small white beads opens over a chemisette of folded white tulle.

Suicides In Ancient Times. In ancient times the offending hand of a suicide was burned apart from the suicide's body as a special mark of disgrace.

Palmistry. Palmisry was practiced by the ancient Greeks.

Acid Fruits.

Acid fruit should not be eaten with food rich in starch, such as bread and The OLDEST Fire Insurance milk, cereals and meat. They combine well, however, with vegetables and other fruits.

Weather Predictions. Nostradamus, French physician and astronomer, born in 1533, was the first

to publish almanacs containing predictions of the weather.

Pythagoras. Pythagoras first adopted the title of philosopher in 528 B. C.

Lace was known in Venice at an early period. It was not unknown to the Greeks and Romans. To protect the native article its importation into England was prohibited in 1483.

Horseshoeing. Horseshoeing was introduced in 1066 by British King William I.

Low Lying Holland. In Holland one travels by railway through an agricultural country as flat as a lake, with the land below the level of the ocean and in some sections lower than the rivers.

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