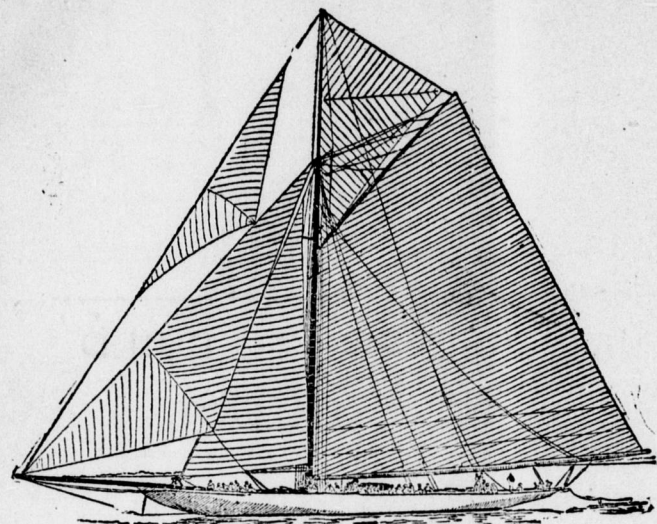


# The Constitution Well Built.

The New Method of Construction Adds Strength and Saves Weight.

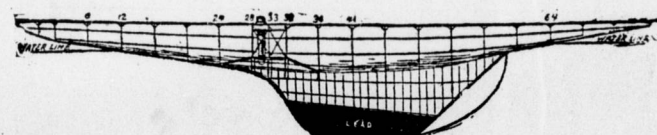
The Constitution, the yacht built for the defense of the America's Cup by the Herreshoff Manufacturing Company, is probably the lightest construct-



CONSTITUTION ON HER TRIAL SAIL OFF BRISTOL.

ed vessel of her size ever built, and it is largely on the lightness of her construction that those interested in the yacht expect she will make her great gains. In model there is very little difference between her and the Columbia. The slight differences made are expected to enable her to carry ten per cent. more canvas than the champion of 1899, which alone should make her very much faster than the older yacht, but with the great gains made in the construction of the hull these gains will be much more than they

tests there were six trials and the final. Eight men participated in each of the trials, and the winners fought out the finals. As this contest is designed primarily to test a man's skill in felling a tree, the log, a great piece of tough wood, six feet four inches in girth, is placed firmly in the ground, as though it were a growing tree. Five minutes before the beginning of the heat the referee's whistle summons the contestants into the inclosure. They are all splendid specimens of physical prowess—thick set, deep



THE CONSTITUTION'S LONGITUDINAL PLAN, SHOWING POSITION OF MAST STEP AND LEAD.

would otherwise be. Those who are interested in the yacht think there is no doubt of her beating the Independence, and they argue that even if the models are the same and each yacht has the same amount of driving power the Constitution, with less weight to drive, will go through the water faster than the Independence, and every one concedes that in the hull the Constitution saves tons in weight over the Independence. The Scientific American gives some detailed drawings of the construction of the Constitution, and shows where the great gains in weight saving are made.

## NEW SPORT FROM ANTIPODES.

Ax and Saw Contests Are Witnessed by Shouting Thousands.

Tasmania may justly claim the credit of having given the world a new sport. In that far-off land, among the men of brawn and might, whose swinging axes have felled the towering forests and converted their trackless depths into flourishing farm lands, has arisen a contest fit for kings; a form of athletic exercise calculated to bring the thrill of delight to all who have an honest admiration for good red blood and the display of mighty muscle systematically trained to do useful work.

The new sport may be designated as "axmanship," and although it is of but recent origin it has already taken the pre-eminence over all other sports.

chested, iron muscled and bronzed from exposure. Each carries his favorite ax, the fullest latitude being allowed in the matter of selection. It is a significant fact that several of the



THOMAS PETTITT, WHO WON THE CHAMPIONSHIP.

saws and axes used this year were the product of American firms. When all is ready the pistol shot sounds and the contest is on.

Scarcely less exciting is the sawing contest. The log used is the same size



A HANDICAP CHOPPING CONTEST IN FULL SWING.

What the bull fighter is to Spain and Mexico, the cricketer to England, the swordsman to France, the hockey player to Canada, and the football and baseball hero to the United States, the champion axman has become to the brawn loving Australians.

The championship contest or carnival is held yearly in Ulverstone, Tasmania, some time during the first two months of the year, under the auspices of an organization specially formed for the purpose, bearing the title of the "United Australian Axemen's Association."

The entries to the yearly competition are not confined to Tasmania, but

as that employed in the chopping contest, but the time made is much more rapid, for the great saw cuts through the wood much more quickly than the axe can go.

This year for the first time the axmen's and sawyers' championships were won by the same man—Thomas Pettitt, of Sprint, Tasmania. Not only did he win both events, but he also broke the record for each.

In some Italian towns, instead of giving books as prizes in public schools they give savings bank books, with a small sum entered to the credit of the prize winner.

come also from Victoria, New South Wales and New Zealand. Each district has its champion, and among the adherents of these various stars there is the most heated controversy as to the respective merits of each. For months before the great contest these brawny axmen spend all their spare time practicing, until they develop a speed and strength that is little short of marvelous. This year's carnival is conceded to have been the most successful since the yearly meeting was inaugurated.

In the championship chopping con-

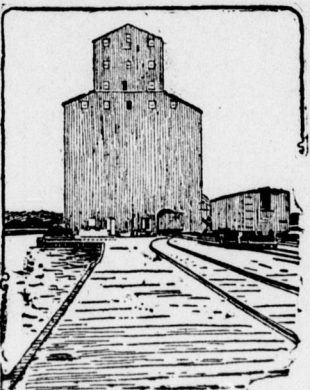
## Hospital For Sick Wheat

Great Cereal Infirmary at Port Arthur on Lake Superior—Wonderful Cures Effected.

The latest thing in the hospital line is an infirmary for sick wheat, where various ailments of the kernel are treated and in many cases a perfect cure is effected.

There is an immense annual loss resulting from wet or diseased wheat. The loss from loose smut alone is at least \$18,000,000 a year. The Department of Agriculture has disseminated a great deal of information among the farmers in regard to the diseases of wheat and the means for bringing about a cure, but not much benefit has resulted from the information. In the large wheat sections of Manitoba and the Northwest the same conditions prevail, and it was with the object of reducing the loss to a minimum that the wheat hospital has been established at Port Arthur, at the northwest end of Lake Superior. Here an elaborate system is in use for restoring diseased wheat to a healthy state. The building is in the form of a large elevator, very similar to the common grain elevators of the United States and Canada. It is supported out in the lake upon crib work, so that vessels may come alongside and carry the cured wheat directly to the East or foreign ports. About 2,000,000 bushels of wheat are treated in the hospital every year.

Where the disease of the wheat is of a very virulent type, it is impossible to improve it in health. Diseases known as "stinking smut" or "bunt"



"WHEAT HOSPITAL," PORT ARTHUR, CANADA.

are beyond all help. In the advanced stages of those diseases the whole kernel is infected with the germ and becomes a mass of spores, which have consumed all the nutritive parts of the kernel, leaving only a thin shell on the outside. When this breaks there is a countless number of germs released, which have a fetid odor and are ruinous to flour with which they come in contact. Kernels that are intact inside the brown skin can be successfully treated, even though they are so black with smut as to be irretrievable as wheat. In addition to this unsanitary or dirty wheat, there are kernels that get the dropsy; that is, they become saturated with water, and are unfit for anything except stock fodder. Sometimes an entire crop will be affected in this way, and it usually proves to be a total loss.

The drying plant of the hospital is capable of treating 6500 bushels per hour. The plant includes a series of frames of perforated metal, through which hot air is forced until the wet wheat is completely dried. The wheat is divided into three classes, depending upon the amount of water it contains, and this condition corresponds to the stage of the disease. "Tough" wheat contains about five per cent. of water, "damp" wheat about eight per cent., and "wet" wheat about fifteen per cent. Normal wheat contains about four per cent. of water. After wheat in any of the stages of the disease receives the treatment given at the hospital, it comes out in a normal condition and ready for the market as first class wheat.

Scouring is the treatment given for smut. The dirty wheat is passed through rapidly revolving machines of metal and the dirt is removed by friction. In one stage of the treatment the wheat is thrown from the top of the elevator to the bottom floor, and the erosion is such that in a few months pine planks, two and a half inches in thickness, will be completely worn out. As a great amount of dust is thrown off from the smutty wheat in this treatment, the employes in the hospitals are compelled to wear face masks. These are made of hard white



ATTENDANT IN A WHEAT HOSPITAL, SHOWING FACE PROTECTOR.

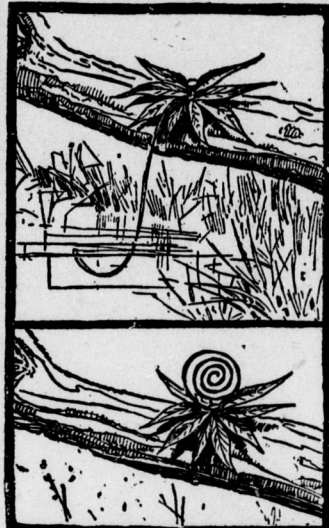
rubber, with holes in the sides, in which are placed small pieces of dampened sponge that absorb the dust as the workmen inhale the air. Over their eyes are worn a large pair

of close-fitting glasses. With this head dress they look almost like divers.

It is said that wheat passing through this treatment is better for milling purposes than the normal wheat, from the fact that a part of the coat, which has to be removed in milling, is removed by the treatment. There is none of it used in the flour mills of this country, however, most of it being shipped to Europe and Eastern Canada.

## Discovery of Extraordinary Plant.

What is probably the most extraordinary plant ever discovered has now been found by E. A. Suverkrop, of Philadelphia, who, during trips to South America, has for some years



been contributing to the collection of his friend, Professor N. E. Brown, of the Herbarium, Kew Gardens, London. The amazing plant which Mr. Suverkrop has now found is an orchid that takes a drink whenever it feels thirsty by letting down a tube into the water, the tube, when not in use, being coiled up on top of the plant.

"One hot afternoon," says Mr. Suverkrop, "I sat down under some brush wood at the side of a lagoon on the Rio de la Plata. Near at hand was a forest of dead shorn trees, which had actually been choked to death by orchids and climbing cacti. In front of me, and stretching over the water of the lagoon and about a foot above it, was a branch of one of these dead trees. Here and there clusters of common 'planta del ayre' grew on it, and a network of green cacti twined around it.

"Among the orchids I noted one different from the rest, the leaves, sharp lancehead shaped, growing all round the root and radiating from it. From the centre or axis of the plant hung a long slender stem about one-eighth of an inch thick by one-fourth inch wide, the lower end of which was in the water to a depth of about four inches. "I at once went over to examine my discovery. Imagine my surprise when I touched the plant to see this centre stem gradually contract and convulsively roll itself up in a spiral like a roll of tape.

"But more surprising yet was the object and construction of this stem. I found on close examination and dissection that it was a long slender flat tube, the walls about 1-32 of an inch thick, cellular in construction, open at the outer end and connected at the inner end to the roots by a series of hair like tubes.

"By subsequent observation I found that when the plant was in want of water this tube would gradually unwind till it dipped into the water. Then it would slowly coil round and wind up, carrying with it the amount of water that that part of the tube which had been immersed contained, until when the final coil wakened the water was dumped, as it were, direct into the roots of the plant. The coil remained in this position until the plant required more water. Should the plant, however, be touched while the tube is extended, the orchid acts like the sensitive plant (mimosa) and the coiling action is much more rapid.

"I found many of these plants, all directly over the water or over where the water had been. In the latter case it was almost pitiful to see how this tube would work its way over the ground in search of the water that was not."

## Little Known About Morocco.

Nobody knows what the population of Morocco is. Estimates place it all the way from 2,500,000 to 9,400,000, says a correspondent of the New York Press. A large part of the country is totally unexplored. The French lately have gone in behind Morocco and extended the boundaries of Algiers, so as to take in the Tuat region, a chain of fertile oases through which run the caravan routes. The Sultan has expostulated and is still expostulating, but with no effect so far as can be seen. Morocco is sometimes called the "sick man of the West," but those best informed believe that it is a pretty lively sick man.

## England Fears Timber Famine.

If it were not for the foreign supplies England receives a timber famine would have overtaken the country long ago, because the home-grown supply has not been able to meet a tithe of the demand for long enough, and that only of inferior kinds of timber, says a British agricultural journal. If the foreign supply of fir alone was to fall off sensibly now the whole building trade of the country would come to a partial standstill and the wagon companies would be next to idle.

The steeple of the Cathedral of Antwerp, Belgium, is 476 feet in height, which makes it the highest church steeple in the world.

## DR. TALMAGES SERMON

SUNDAY'S DISCOURSE BY THE NOTED DIVINE.

Subject: The Curse of Speculation—Integrity and Villainy in Wall Street—Lessons Drawn From Gambling Crises Which Have Swept Over the World.

(Copyright 1901.)

WASHINGTON, D. C.—In this discourse Dr. Talmage arraigns the spirit of wild speculation and gives some account of the financial ruin of old days; "Riches xxiii 5." "Riches certainly make themselves wings; they fly away as an eagle toward heaven."

Money is a gold breasted bird with silver beak. It alights on the office desk or in the counting room or on the parlor centre table. Men and women stand and admire it. They do not notice that it has wings larger than a raven's, larger than a flamingo's, larger than an eagle's. One wave of the hand of misfortune, and it spreads its beautiful plumage and is gone, "as an eagle toward heaven," my textbook says, though sometimes I think it goes in the other direction.

What a verification we have had of the flying capacity of riches in Wall Street! And Wall Street is one of the longest streets in all the world. It does not begin at the foot of Trinity Church, New York, and end at the East River, as many suppose. It reaches through all our American cities and across the seas. Encouraged by the revival of trade and by the fact that Wall Street disasters of other years were so far back as to be forgotten, speculators run up the stocks from point to point until innocent people on the outside suppose that the stocks would always continue to ascend. They gather in from all parts of the country. Large sums of money are taken into Wall Street and small sums of money. The crash comes, thank God, in time to warn off a great many who were on the verge of ruin, for the saddest of things is that a great many of the young men of our cities who save a little money for the purpose of starting themselves in business and who have \$500 or \$1000 or \$2000 or \$10,000 go into Wall Street and stand clear of the Wall Street vortex, where so many have been swamped and swallowed.

What a compliment it is to the healthy condition of our country that these recent disasters have in no wise depressed trade! I thank God that Wall Street's capacity to blast this country has gone forever.

Across the island of New York in 1685 a wall made of stone and earth and cannon mounted was built to keep off the savages. Along by that wall a street was laid out, and as the street followed the line of the wall it was appropriately called Wall Street. It is narrow, it is unarchitectural, and yet its history is unique. Excepting Lombard street, London, it is the mightiest street on this planet. There the Government of the United States was born. There Washington held his levees. There Mrs. Adams and Mrs. Caldwell and Mrs. Knox and other brilliant women of the Revolution displayed their charms. There Witherspoon and Jonathan Edwards and George Whitefield sometimes preached. There Dr. Mason chided Alexander Hamilton for writing the Constitution of the United States without any God in it. There negroes were sold in the slave market. There criminals were harnessed to wheelbarrows and, like beasts of burden, compelled to draw or were lashed through the streets behind carts to which they were fastened. There fortunes have come to coronation or burial since the day when reckless speculators in powdered hair and silver shoe buckles doled out the curbstones of Trinity and drove it clear through to Wall Street ferry, and so it shall go if the horses are strong enough to draw the plow.

First of all, Wall Street stands as a type of this country for tried integrity and the most outrageous villainy. Farmers who have only a few hundred dollars' worth of produce to put on the market have but little to test their character, but put a man into the seven times heated furnace of Wall Street excitement and he either comes out with a coat of hair unsinged, or he is burned into a black moral cinder. No half way work about it. If I wanted to find integrity bombproof, I would go among the bankers and merchants of Wall Street, yet because there have been such villainies enacted there at different times some men have supposed that it is a great financial debauchery, and they hardly dare go near the street or walk up and down it unless they have buttoned up their last pockets or had their lives insured or religiously crossed themselves. Yet if you start at either end of the street and read the business signs you will find the names of more men of integrity and Christian benevolence than you can find in the same space in any street of any of our cities. When the Christian commission and the sanitary commission wanted money to send medicine and bandages to the wounded, when breadstuffs were wanted for famishing Ireland, when colleges were to be endowed and churches were to be supported and missionary societies were to be equipped for their work of sending the gospel all around the world, the first street to respond has been Wall Street, and the largest response in all the land have come from Wall Street.

But, while that street is a type of tried integrity on one hand, it is also a type of unbounded swindle on the other. There are the spiders that wait for innocent flies; there are the crocodiles that crawl up through the slime to crunch the calf; there are the anacondas, with lifted lips, ready to crush the unwary; there are financial wreckers who stand on the beach praying for a Caribbean whirlwind to sweep over our commercial interests. Let me say it is no place for a man to go into business unless his moral principles are thoroughly settled. That is no place for a man to go into business who does not know when he is overpaid \$5 by mistake whether he had better take it back or not; that is no place for a man to go who has large funds in the pocket who is all the time tempted to speculate with them; that is no place for a man to go who does not quite know whether the laws of the State forbid usury or patronize it. Oh, how many men have risked themselves in the vortex and gone down for the simple reason their integrity had not been thoroughly established! Remember poor Ketcham—how soon the flying hoofs of his iron grays clattered with him to his destruction; remember poor Gay, at thirty years of age, aston-

ishing the world with his fortunes and his forgeries; remember that famous man whose steamboat and whose opera houses could not atone for his notorious rides through Central Park with the face of decent New York and whose behavior on Wall Street by its example has blasted tens of thousands of young men of this generation.

I have not so much admiration for the French Emperor who stood on his balcony in Paris and addressed an excited mob and quelled it as I have admiration for that venerable banker on Wall Street who in 1864 stood on the steps of his moneyed institution and quieted the fears of depositors and bade peace to the angry wave of commercial excitement.

God did not allow the lions to hurt Daniel, and He will not allow the "bears" to hurt you. Remember, my friend, that all these scenes of business will soon have passed away, and by the law of God's eternal right all the affairs of your business life will be adjudicated. Honesty pays best for both worlds.

Again, I have to remark that Wall Street is a type throughout the country of legitimate speculation on the one hand and of ruinous gambling on the other. Almost every merchant is to some extent a speculator. He depends not only upon the difference between the wholesale price at which he gets the goods, and the retail at which he disposes of them, but also upon the fluctuation of the markets. If the markets greatly sink, he greatly loses. It is as honest to deal in stocks as to deal in iron or coal or hardware or dry goods. He who condemns all stock dealings as though they were iniquitous simply shows his own ignorance. Stop all legitimate speculation in this country, and you stop all banks, you stop all factories, you stop all storehouses, you stop all the great financial properties of this country.

Sedate England took its chance in 1720. That was the South Sea bubble. They proposed to transfer all the gold of Peru and Mexico and the islands of the sea to England. Five millions' worth of shares were put on the market at £300 a share. The books open, in a few days it is all taken and twice the amount subscribed.

Excitement following excitement until all kinds of gambling projects came forth under the wing of this South Sea enterprise. There was a large company formed with great capital for providing funerals for all parts of the land. Another company with large capital—£5,000,000 capital—to develop a wheel in perpetual motion; another company with a capital of £4,000,000 to insure people against loss by servants; another company, with £2,500,000 capital, to transplant walnut trees from Virginia to England; then, to cap the climax, a company was formed for "a great undertaking—nobody to know what it is." And, lo! £600,000 in shares were offered at £100 a share; books were opened at 9 o'clock in the morning and closed at 3 o'clock in the afternoon, and the first day it was all subscribed. "A great undertaking—nobody to know what it is!"

An old magazine of those days describes the scene (Hunt's Magazine). It says: "From morning until evening Change alley was full to overflowing with one dense, moving mass of living beings, composed of the most incongruous materials and in all things save the mad pursuit whereof they were employed utterly opposite in their principles and feelings and far asunder in their stations in life and the professions they follow. Statesmen and clergymen deserted their high stations to enter upon this great theatre of speculation and gambling. Churchmen and dissenters left their fierce disputes and forgot their wranglings upon church government in the deep and hazardous game they were playing for worldly treasures and for riches which, if gained, were liable to disappear within an hour of their creation. Whigs and Tories buried their weapons of political warfare, discarded party animosities and mingled together in kind and friendly intercourse, each exulting as their stocks advanced in price and grumbling when fortune frowned upon them. Lawyers, physicians, merchants and traveling men forsook their employment, neglected their business, disregarded their engagements to whirl along in the stream, to be at last engulfed in the wild sea of bankruptcy. Females mixed with the crowd, forgetting the station and employment which nature had fitted them to adorn, and dealt boldly and extensively and, like those of whom they were so much distinguished, rose from poverty to wealth, and from that were thrown down to beggary and want, and all in one short week and perhaps before the evening which terminated the first day of their speculation. Ladies of high rank, regardless of every appearance of dignity and blinded by the prevailing infatuation, drove to the shops of their milliners and haberdashers and there met their stockbrokers, whom they regularly employed and through whom extensive sales were daily negotiated. In the midst of the excitement all distinction of party and religion and circumstances and character were swallowed up."

But it was left for our own country to surpass it all. It is but thirty-seven years ago we have the highest mountains and the greatest cataraacts and the longest rivers, and of course we had to have the largest swindle. One would have thought that the nation had seen enough in that direction during the morous multicauls excitement, when almost every man had a bunch of crawling silkworms in his house, out of which he expected to make a fortune. But all this excitement was as nothing compared with what took place in 1864, when a man near Pittsburg, Penn., digging a well, struck oil. Twelve hundred oil companies call for a billion of stock. Prominent members of churches, as soon as a certain amount of stock was assigned them, saw it was their privilege to become presidents or secretaries or members of the board of directors. Some of these companies never had a foot of ground, never expected to have. Their entire equipment was a map of a region where oil might be and two visals of grease, crude and clarified. People rushed down from all parts of the country by the first train and put their hard earnings in the gulf.

A young man came down from the oil region of Pennsylvania utterly demented, having sold his farm at a fabulous price because it was supposed there might be oil there—coming to a hotel in Philadelphia at the time I was living there, throwing a \$5000 check to pay for his noontide meal and saying he did not care anything about the change! Then he stepped back to the gas burner to light his cigar with a thousand dollar note. Utterly insane!

The good Christian people said, "This company must be all right, because Elder So-and-so is president of it, and Elder So-and-so is secretary of it, and then there are three or four highly respected professing Christians in the board of directors." They did not know that when a professed Christian goes into stock gambling he lies like sin. But alas for the country! It became a tragedy, and a thousand millions dollars were swamped. There are families to-day sitting in the shadow of destitution who but for that great national outrage would have had their cottages and their homesteads. I hold up before the young men these four great stock gambling schemes in that order of magnitude men will go smitten of this passion, and I want to show them how all the best interests of society are against it and God is against it and will condemn it for time and condemn it for eternity. Do not dwell upon the frenzied speculations in Wall Street last month. You have enough remembrance of that financial horror. I only want you to know that it was in a procession of monetary disasters, some of which have passed and others are to come.