

ANOTHER UNITED STATES CRUISER AFLOAT.

The first one of three 2,000 ton steel cruisers authorized by Congress in 1889 was launched at Baltimore October 28, from the ways of the Columbian Iron Works and Dry Dock Company. She had been previously known as No. 10, but was christened the Detroit, being classified as second rate, the law requiring such vessels to receive the names of cities, although the people of Baltimore had desired to have her named North Point, in honor of the battle fought there in 1814. Of the other two vessels authorized by Congress at the same time, one is being built at the Columbian Iron Works and the other at Boston. The launch was witnessed by a great crowd, and was in every way a success. Among others present were: Commander Willard H. Brownson, who will command her when she goes into commission; Commander Charles H. Davis, Chief Engineers George W. Roche and J. A. B. Smith, Assistant Engineers C. A. E. King and D. W. Redgraves, Naval Constructor Joseph J. Woodward, Mr. Powell, chief draughtsman of the Bureau of Construction, Navy Department, and Ensign William R. Shoemaker.

The Detroit's keel was laid March 16, 1890, and her cost is to be \$612,500, exclusive of armament. She is 257 feet long on the load water line, has an extreme breadth of 37 feet, with a mean normal draught of 14½ feet. Her engines are designed to give her a speed of 18 knots. She is almost identical in displacement with the two Chilean cruisers recently built in France. Congress limited the cost of each of these three vessels to \$700,000 for a guaranteed speed of 17 knots. An allowance of \$100,000 will be made on each vessel should 18 knots be made. The Detroit has what is termed an open gun deck, the poop and forecastle decks being connected by a bridge extending fore and aft. There is extended through the principal part of the vessel a center-line vertical bulkhead, which not only helps to support the water-tight deck, but adds "backbone" to the vessel.

Especially interesting is the coffer-dam protection along the entire machinery space, which is to be filled with cellulose. Cellulose is manufactured from the fibers of cocoanut husks and has the property of absorbing eight times its weight of water. The French government proved by tests that ships built with a lining of cellulose would be practically unsinkable. There will be 500 cubic feet of cellulose in the coffer dams in the Detroit.

Naming the Vessels of the New Navy.

The present law requires ships of the first rate to be named after States and those of the second rate after cities, but there is an existing confusion both as to rating and naming which Congress, sooner or later, no doubt, will modify. We now have State sponsors for the three big battle ships of 10,200 tons each, the Indiana, Massachusetts, and Oregon; for the armored cruiser of 6,648 tons building at Brooklyn we have Maine; for the battle ship of 6,300 tons building at Norfolk we have Texas; for the armored cruiser of 8,150 tons we have New York. To these it is believed will be added California, as the name of the 5,500 ton protected cruiser now known as No. 6, under construction at the Union Iron Works, San Francisco. It is thought that the name Pennsylvania may be given to the triple screw cruiser, No. 12, of 7,400 tons, now building at Philadelphia. She is already nicknamed Pirate, but the statutes do not allow her to carry that as her permanent appellation, and with her rating she must have the name of some State. Her sister ship, No. 13, would, of course, follow the same rule, or otherwise she might be styled the Corsair. The new rules are expected to make all vessels displacing 5,000 tons or more first rates. On this point the Senate and the House agreed in the last Congress; and, furthermore, they agreed that all between 5,000 and 3,000 tons should be second rates. They differed on the method of naming, and the modification of the statute as a whole was postponed. But it is clear why the 5,500 ton cruiser will take the name of a State, and why, on the other hand, the Chicago of 4,500 tons, the Baltimore of 4,400 tons, and the Monterey of 4,048 tons, have

received the names of cities. We have now nine new vessels, ranging from 5,500 tons to 10,200 tons, named or hereafter to be named after States, representing all parts of the Union.

In the next class or rate we have already named after cities the Atlanta and the Boston of 3,000 tons each, the Raleigh and the Cincinnati of 3,183 tons each, the Charleston of 3,730 tons, the Newark and San Francisco of 4,083 tons each, the Philadelphia of 4,324 tons, the Baltimore of 4,400 tons, and the Chicago of 4,500 tons. To these we now find added the Detroit and probably the Mobile of 2,000 tons each, while the third 2,000 ton cruiser building at Boston will also have the name of a city.

The theory of the new rating, not yet authorized by law, makes third rates include everything between 3,000 and 1,000 tons. To such vessels of the new navy could be applied, as in the case of the three 1,703 ton gunboats, Yorktown, Bennington, and Concord, the names of battles in our history. Examples of vessels in the old navy carrying the names of cities are the Lancaster, 3,250 tons; the Pensacola, 3,000; and the Hartford, 2,900. The Omaha, 2,400, will probably see no more active service.

Turning to the smaller vessels of the navy, the existing rules in regard to the President's discretion have produced names no two of which are of the same character, but all appropriate. Thus we have the Dolphin and the Petrel, excellent names for the 1,500 and 885 ton gunboats, each of which is the only one of its type. We have the Vesuvius, a good name for a pneumatic gun-cotton vessel, although hitherto it has not been a Vesuvius in eruption. The torpedo boat Cushing has been very aptly named from the gallant destroyer of the Albemarle, while doubtless torpedo

less a day, always uses more rollers, always wastes more paper and ink. The superior performance of the qualified workman fairly justifies his higher wages. The damage that the machine receives from men who do not know how to handle it is great. Men who cannot keep their presses clean and who are viciously meddling with impression screws, bearers, and rollers, are dear at any price. Upon the pressman, more than any other workman, depends the credit of your office. Clean presswork hides a multitude of sins of composition. A good pressman can protract the life of your type one-half longer than the poor one.

Curious Foundations.

The *Railway Review* tells of a novel method of laying foundations in swampy soil recently employed by an American engineer. The building to be supported was a low wooden one which it was proposed to use for the storage of machinery. Casks were set in holes in the ground along the line of posts and were filled to the depth of about one foot with iron turnings. The posts were placed in the casks, which were then filled with iron turnings compactly rammed in place. A solution of salt and water was slowly poured over the turnings, under the action of which they solidified into a hard mass. The heat of the oxidation of the iron was so great that the posts were charred. This also served to act as a preservative, and to that extent the iron turnings are probably superior to concrete under similar conditions.

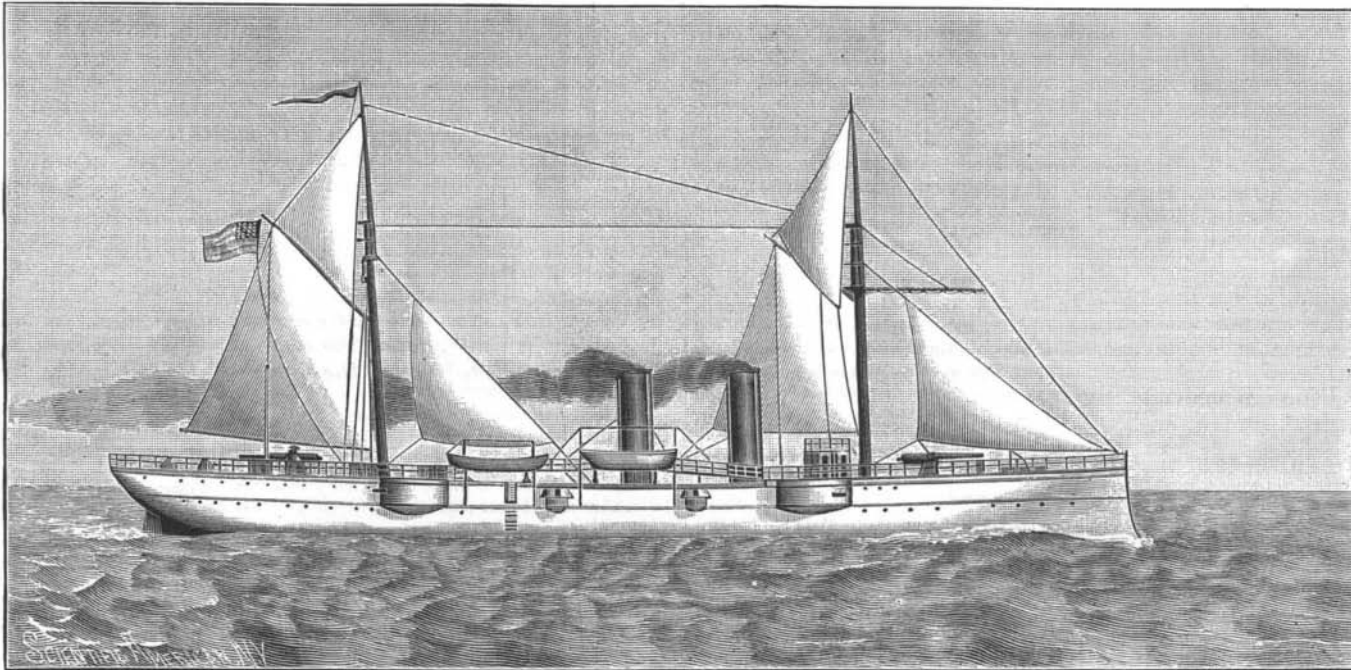
Precautions against Fire and Rats.

In a communication to the *New York Evening Post*, Mr. A. W. Page makes the following excellent suggestions: One could not contrive a more perfect system of arranging a quantity of lumber to have it burn quickly than by using it to construct a modern house. The open spaces in the outside walls between the boarding and plastering, and in the partitions and between the floor timbers, form a perfect network of flues. If a fire starts in the lowest part of the house, those flues, with the shavings and chips usually left there, carry the fire to the attic and roof instantly; or if it starts above, the coals and fragments of fire fall down through those flues, thus spreading the fire very rapidly.

The suggestions that I have to offer as an improvement are, let the lining floors in each story extend to the outside boardings, and lay one course of brick in mortar on the floor between the studding; refuse or broken brick or small stones will answer; fill in inside the partitions in the same way if necessary, not forgetting to stop at all openings around steam and other pipes and every other place where a mouse would be liable to go or gnaw through. A little care and eight to twelve dollars will cover the cost in an ordinary house. At greater expense more might be done as a protection against fire. If the house is plastered before the finish is put on, it is a good plan to plaster down to the lining floor on the outside walls, and, in fact, all of the walls, instead of plastering to grounds six or seven inches from the floor.

A Medal Worth Having.

The gold medal which was presented to Professor Virchow, of Berlin, on the occasion of his seventieth birthday, recently, weighed nearly six pounds, and represented a value of about \$500, in pure gold. Mme. Virchow received a silver, and each of the Professor's children a bronze replica of the medal. The obverse shows the bust of the Professor, with the legend: "RVDOLPHVS VIRCHOW. POMMERANVS CIVIS BERO-LINENSIS: AETAT LXX." On the reverse is an allegorical group representing the genius of investigation, winged, and carrying a flaming torch in the left hand, while with the right he lifts the veil of Isis. At the foot of the Isis column is a table with the representation of the Berlin Pathological Institute. In the background Science, on her lap an open volume, is seen contemplating a skull, while around her are other pathological emblems. The inscription on this side is "Omnis cellula a cellula."

**THE NEW STEEL CRUISER DETROIT—2,000 TONS.**

boat No. 2, now building at Dubuque, will be as fitly christened. For the Naval Academy practice vessel the name Bancroft has been suggested, and very appropriately, in view of the great work done by Secretary George Bancroft toward founding the Naval Academy. Finally, names are yet to be selected for the two 1,000 ton gunboats building at Bath.

Printers' Profits.

Mr. Theodore L. De Vinne, in an address to the National Editorial Association, made the following remarks:

... The cost of presses is a serious expense, but if they can be kept fairly employed there need be no loss. As a rule, presswork is the profitable branch of the business. It is the composition room that is the great sinkhole. It is in types and wages of compositors that the profits of the house are lost.

... When an office is small and can afford to buy but one or two presses, they should be of the best. A printing machine which can print a newspaper only and which cannot print a book form; that will print a poster and will not register for colors; that will print an ordinary pamphlet and that has not strength enough nor inking rollers enough to print wood-cuts—that machine is an expensive press, even if it does cost \$1,000 or \$2,000 less than a perfect machine. I know from experience that it takes a long time to earn \$1,000 on one machine, but I know also that one can lose the chance of earning that \$1,000 in delays and bad work in attempts to get on with a poor machine. A machine that can do any kind of work from a poster to a wood cut is always a cheap machine.

Good machines call for good men. It is a mistake to allow a machine which costs thousands of dollars to be managed by an incompetent pressman. The incompetent man always does from three to ten tokens