

# SCIENTIFIC AMERICAN

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## TORPEDO BOATS FOR THE CRUISER MAINE.

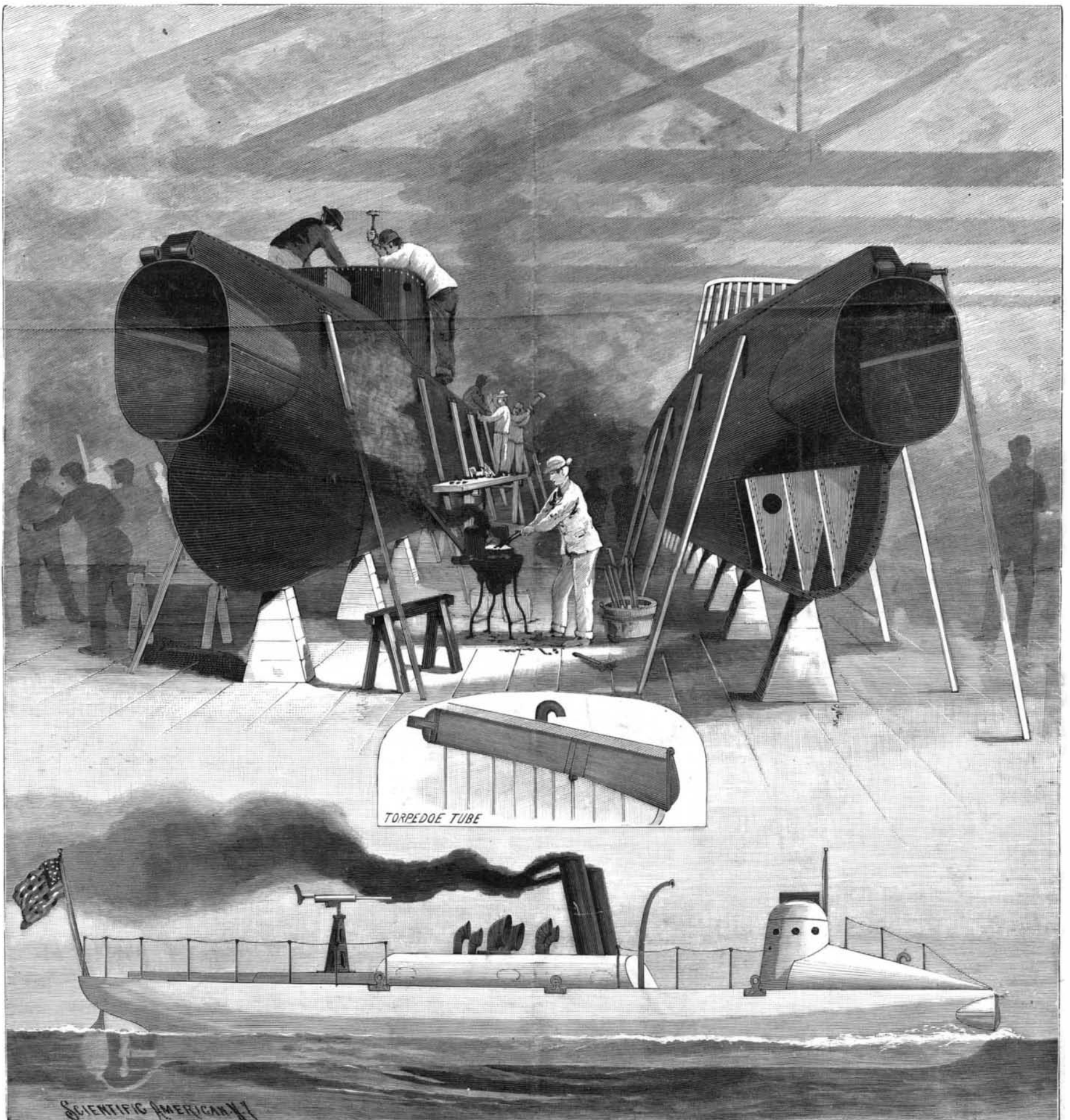
The United States battle ships Maine and Texas, named from States in the extreme north and south of the Union, represent a type of vessel which, although since improved upon, is a very powerful one. When completed, these two ships will embody almost all the modern developments in naval warfare. They are criticised as not being adequately provided with protection against modern rapid-firing guns and explosive shells, because when they were designed these weapons had not attained their present perfection. The Maine is being built at the New York Navy Yard, the Texas at the Norfolk Navy Yard.

Each ship is to be provided with two small torpedo boats, technically of the third class, and our illustration shows the operations in progress in the building of the Maine's boats. These little vessels are constructed with all the refinements of the shipbuilder's art. They are of steel throughout, with angle frames and butted plates with straps over the joints, all bolts and rivets being hammered flush with the surface of the skin. The plates, which below the water line are galvanized, are all hammered to shape, no plate being rolled to a curve. Much of this shaping is done cold, but where more elaborate work is desired the flanging is done hot. The plans for the boat, as furnished to

the foreman, have the dimensions designated to a 64th of an inch, and up to the present period practically no error whatever in the dimensions has been found, a remarkable tribute to the workmanship of the New York Navy Yard.

The general dimensions of the boat are as follows: Length over all, 61 feet 8 inches; beam, 9 feet 1½ inches; draught, 2 feet 2 inches mean and 3 feet 4 inches maximum; displacement, 12½ tons. Her coal and stores add about three tons to this displacement. Six watertight transverse bulkheads give seven watertight compartments.

The general disposition of parts includes an open



TORPEDO BOATS FOR THE CRUISER MAINE.

cockpit aft. Into this the rudder head enters, so that the boat can be steered from this cockpit if the conning tower has to be deserted.

Along each side of the boat are coal bunkers, which, as far as their diminutive size permits, may be considered protective.

The crew includes the commander, engineer, firemen and two sailors. The Whitehead torpedo, which is used, weighs rather more than 2100 pounds, so that stability as well as a measure of protection to the machinery is secured by placing the weights as low as possible.

The boiler consists of two upper and two lower horizontal cylinders, connected by 440 one inch drawn steel tubes. To prevent corrosion, blocks of zinc are contained in the cylinders connected with each other and by means of a copper wire with the steel of the boiler.

The propeller is 3 feet in diameter and of 39 inches pitch, with an area on the screw faces of 4.1 square feet. There are two feed pumps for the boiler, and these can be connected so as to pump out the bilge.

As regards speed, it is hoped to get about 18 knots an hour at 200 horse power, and it is believed that this can be obtained upon the consumption of 1 1/2 lb. of coal per horse power.

The fiftieth anniversary of the first use of anesthesia for the purpose of relieving pain was commemorated recently in a fitting manner by the Connecticut State Dental Society, at Hartford, Conn.

The First Anesthetic.

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A HORSESHOE to be affixed without nails has been invented.

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DELAYED CASES IN THE PATENT OFFICE. The United States Circuit Court, in the case of the Bell telephone patent of Berliner, filed 1877, and issued in 1891, fourteen years after the application was filed, held in effect that the applicant had purposely allowed the case to be delayed in the Patent Office until the original Bell patent had nearly expired; the object being to enable the Bell Company to have a continuance of its telephone monopoly for seventeen additional years.

We notice that Edison has lately obtained several patents which have for years been pending in the Patent Office. One is for the manufacture of carbons, filed in 1880, fourteen years ago. Another for dynamo regulator, filed in 1881, thirteen years ago. Another for plating metals, filed in 1884, ten years ago. Another for carbon filaments, another for electric distribution, both filed in 1886, eight years ago.

It is evident there is something wrong in the law which thus facilitates and apparently encourages these unconscionable delays. Preliminary litigations, it appears, may be carried on for half a generation before the Patent Office, prior to the grant of a patent.

The remedy is plain. The duties of the Patent Office should be more strictly confined to the sphere specially provided for it by the constitution, namely, the grant of patents, not the determination of judicial questions. These latter should be relegated to the courts where they belong. Interference proceedings and questions of priority should have no place before the Patent Office.

The Seal Industry.

An official report has been published by the Treasury Department recently, confirming the stories of the outrages of pelagic sealing as permitted by the Paris regulations. It appears that the pelagic fleet of the past year has comprised some sixty vessels, which is four less than the fleet of last year.

It has also been found that pelagic sealing is in large measure directed against the mother seals, which, under our laws, were carefully protected. If this destruction continues, it is estimated that the value of the Pribylov Islands will be practically destroyed within the next five years.

The revenue of the Canadian government from this source is rapidly increasing, while that of the United States is diminishing. The United States is moreover at a great expense to provide a large patrol fleet, and the British government, on the other hand, although owning the majority of the sealing vessels, expends very little for police patrol.

Lobster Laws.

The game laws of Massachusetts provide a heavy fine for any one who either catches or sells lobsters measuring less than 10 1/2 inches. Quite recently a large consignment of lobsters to a New York firm were seized in Boston, and the entire lot, consisting of 17 barrels or some 3,323 lobsters, were dumped in Boston Harbor.

It has been found that four hundred tons of top weight must be taken from the new French battle ship Brennus before she can be rendered seaworthy. It will be necessary to remove at least one of her fighting masts, and her upper deck will be almost completely dismantled.