

**THE WAR SHIP ATLANTA AND HER MAGAZINE.**

Few ships of the new navy have received more attention than has been given to the cruiser Atlanta, which occupies an interesting position on account of having been among the earliest of the ships which could properly be designated as belonging to the navy of to-day. The construction of the Atlanta and the Boston was authorized in 1883, and the contract was signed during the same year. By statute she was to be a ship of about 3,000 tons displacement and was to be of the cruiser type. The Atlanta's armament includes two 8 inch breech loading rifles, one mounted in a barrette forward and another in a barrette aft, the barbets being set, one to port and the other to starboard of the median line of the ship. Her midships is occupied by a superstructure, behind which are placed six 6 inch breech loading rifles, four in broadside, one forward and one aft. The upper illustration shows the deck of the superstructure. It will be understood that the main battery is all situated below this deck. Her secondary battery includes two 6-pounders, two 3-pounders and two 1-pounder rapid firing guns, and six smaller pieces. Our lower illustration shows the scene in the magazine with the ammunition hoisting apparatus at work raising the cartridges in their cases to the deck, while on each side are seen the shelves on which the cartridges are arranged.

Going back to the period of her construction, it is interesting to note the difficulties experienced in those days in completing a ship of war. Large steel castings were not then available, so that her stem and stern posts were forgings made from scrap or bloom, and only a few of the smaller of the moving parts of the machinery were made of cast steel. Her shaft was not made of steel, but of wrought iron with steel pins. The Dolphin, built about the same time, was provided with a steel shaft, provision for which was made in the contracts of the Atlanta, Boston, and Chicago, as well as the Dolphin. The Advisory Board, however, condemned the Dolphin's shaft, and on the responsibility of the contractor it was put in place, only to break upon her trial trip. The contractor thereupon suggested that the contracts be modified, and in the specifications of the four ships "iron" was substituted for "steel" in the construction of the shafts.

An interesting comparison between the Constitution, built in 1797, and the Atlanta, built in 1883, has been made by Lieut. J. F. Meigs of the United States Navy. The Constitution's armament of 24 and 32 pounders, with a total of fifty-four guns, delivered at a discharge 684 pounds of projectiles, while the Atlanta, with her eight guns, can discharge 800 pounds. The Constitution's water-line thickness was about 22 inches of oak, penetrable by guns as good as her own at about 1,000 yards range. The Atlanta's 6 inch guns, on the other hand, at 1,000 yards range, can penetrate a thickness of twenty times that of her side at the water line, which is but  $\frac{5}{8}$  of an inch. This plate of steel is supposed to have the resisting power of the 22 inches of oak of the Constitution, and as Lieut Meigs puts it, "while the defensive power at the water line remains about the same, the later ship has a battery power which, considered with reference to penetration alone, is twenty-five times stronger, roughly." The guns of the Atlanta can penetrate a ship similar to herself, while still hull down on the horizon, if the gunner can but hit the enemy at that distance.

The duty of such a cruiser is to accompany and assist the battle ships, carry information and stores, and attack the enemy's commerce and convoy and guard our own. It is now some seven years since the Atlanta was taken to Gardiner's Bay, Long Island, to have her battery tested. As a result, both the 8 inch gun carriages were disabled and the other gun carriages proved unable to stand the strain put upon them, and the ship herself was shaken up considerably by the explosions. In those days the finer points about gun carriages were not well understood, and the importance of having some elastic material between the gun carriage and the holding-down plates was not realized. In resisting the recoil of a gun, work is done which practically consists of force exercised during a given time or over a given distance. The total work remaining the same, the greater the distance or the longer the time, the less will be the maximum force exerted by the recoil. At present, where gun carriages are bolted to a deck, unless the deck itself has a thick covering of wood, heavy oak planks are inserted between the washer plate under the deck and the deck proper. This provides the requisite elasticity for preventing the force from reaching so high an intensity as it does where the backward plunge of the gun is resisted by metal bearing directly against metal. To-day the Atlanta is a serviceable ship, and she has recently executed, with her ram, a service in the order of peace, by cutting in two a floating derelict, as illustrated in our issue of September 22, 1894.

PLATINUM has been drawn into smooth wire so fine that it could not be distinguished by the naked eye, even when stretched across a piece of white cardboard.

**The Clover Mite in Houses.**

The specimens accompanying the letter of your correspondent, L. A. G., looking not unlike minute reddish spiders, are a species of mite which has been called the clover mite (*Bryobia pratensis*, Garman) by virtue of the fact that it is perhaps more common upon clover than upon other plants, though it is found upon very many other kinds of vegetation. Your correspondent is correct in assuming that it is closely allied to the red spider, as it belongs to the same family, and was, indeed, for some time confounded with this last species. It has a wide distribution, occurring throughout the Northern and Central States from Massachusetts to California.

When the mite is abundant its injuries to the foliage of plants is manifest by their turning yellow and becoming seared very much, as in the similar injury from the red spider. The peculiarity in the habits of this mite, described by your correspondent, of entering houses has been experienced and recorded by many other correspondents. In autumn the mites seem to prefer to secrete themselves in the crevices of the trunks and twigs of trees, the latter of which they frequently cover with their rather bright red spherical eggs, which are often so numerous that they give the twigs and branches of the tree a decidedly reddish hue. The use of the kerosene emulsion is advised as a remedy to protect the plants attacked, and the same should be applied to all vegetation adjoining houses which are being invaded by the mites. Spraying with benzine is the best thing that can be recommended for ridding portions of houses of the mite. If precautions be taken against fire, the benzine may be used freely, and the unpleasant odor will soon disappear with thorough airing.

C. V. RILEY.

**Japanese Oddities.**

Japan, which already has its emancipated women, its politicians, its demagogues, and even its anarchists, has, says a writer in the *Revue des Revues*, nevertheless kept intact a host of oddities which, in a certain respect, are stranger still than those of the Celestial Empire. The following are some of them:

While we write from the left to the right, the Japanese write from right to left. In writing, we form horizontal lines, while the Japanese make perpendicular ones. A Japanese book begins where ours ends, and, consequently, when we read a book we turn the leaves from right to left; but the Japanese are forced to turn them from left to right. We make our references at the bottom of the page; the Japanese place them at the top.

The Japanese women are odder than their books. European women show their necks and arms, while a Japanese woman carefully covers the upper part of her body and shows only her feet. A Japanese female is richly clothed up to the age of sixteen or seventeen, but a French female does not begin to dress in style until after reaching this age.

A Japanese belle is a small, very slender woman lost in a large piece of fabric, which permits of a glimpse of nothing but a pair of wild eyes in deep orbits and a vague, indescribable smile. A fair complexion is repugnant to her, and plumpness frightens her. A Japanese Venus would provoke a smile from an Aryan, while a European Venus would doubtless be considered in Japan as a type of a vulgar woman.

Among us it is the chaste women who usually shine by their intelligence, but in Japan intelligence appears to be the appanage of women who lead a more or less frivolous life.

We wear black as a sign of mourning, while the Japanese wear white clothing under the same circumstances.

At our receptions, women always play the first role; they are served first and the best places are assigned to them. In Japan, things are entirely otherwise. The women remain standing while the men are eating. This ceremonial does not apply at soirees, for the simple reason that women in this case are conspicuous by their absence. Woman is the inevitable ornament at our fetes, but in Japan she is treated as an obstacle that works injury to the splendor of the occasion. So woman is dispensed with, to the great satisfaction of all present.

We eat around tables of some size, but the Japanese are served at small tables placed near the wall, and which afford hospitality to but one person. Our servants hand the dishes to us from behind; in Japan they are presented from the front.

We always put the prenomens before the family name, while the Japanese do just the contrary.

We carry children in the arms; Japanese women carry them on the back.

In meeting a person, we turn to the right; but the Japanese turn to the left.

With us, women of different social classes are somewhat distinguished by their toilet; but in Japan every woman, beginning with the wife of the Mikado and ending with the simple workwoman, wears the same style of dress, which differs only in the quality of the material.

A European woman may paint her lips, use beauty

spots, pencil her eyebrows, powder her face, or employ rouge; but if she does she will carefully try to conceal the fact. A Japanese woman does all this, and perhaps a little more, but she shows herself very proud of it and endeavors to make it appear that her beauty is the product of her art! And yet such art is not her own.

With us, it is usually the duty of the maid to embellish her mistress; but in Japan this task is relegated to the hair dresser, and while the massagists of women must always be blind, the hair dresser must have his eyes wide open in order to worthily respond to his title of "painter of the living," to use the Japanese expression.

And there is another difference, too, and one that does honor to the pretty Japanese women. Women in all European countries exhibit a special predilection for some foreign language. French women speak English and English women speak French, Russian, etc. A Japanese woman speaks nothing but Japanese. It is to her, moreover, that the Japanese language owes all the progress that it has made in the last century. She was of old forbidden to study the Chinese language, which was considered as the exclusive monopoly of men. The Japanese women took hold of their native tongue, and are present at the head of the literary movement of their country. Madam Murasaki is not the only one who has contributed to the development of this flexible tongue and exotic literature, for, in addition to her, there are at least thirty writers and philosophers in petticoats who are laboring for the greatest glory of the Japanese renaissance.

There is still another trait of character that distinguishes the Japanese from us Western people. We speak like true debauchees, while the Japanese abstain from immoral language and prefer to it more or less immoral acts.

The Japanese women, while competing with men, from a political and literary standpoint, have abandoned to them the monopoly of vice. So adultery on woman's side is almost unknown in Japan. What European country could say as much?

**Exhibition of Mexican Products.**

The Mexican department of the Pan-American Commercial Exposition was formally opened in New York last week. The exhibit is interesting in many ways. It furnishes plenty of evidence of the progress Mexico is making in the direction of mercantile production. Of the natural products the displays of opals and the tecali, or Mexican onyx, are especially beautiful. The most notable of the ancient Mexican industries are perhaps the feather pictures (a distinctively Mexican art), the gold embroidered hats, costing \$50 and \$75, the gorgeous serapes, and the carved woods. The more recent industries include beer brewing, the manufacture of castile soap from the coquito aceite, a fibrous plant peculiar to Mexico, and of a wonderful bleaching soap made from the maguey aloe, the cultivation of coffee, the manufacture of calicoes, meltons, chevots, tweeds, and cottons in great variety, and the manufacture of valuable harness. The exhibition gives evidence of the presence of valuable natural resources, and of an energy and ingenuity seldom credited to our sister republic.

**A Rat Causes an Electrical Fire.**

A singular accident occurred recently to the electric lighting system of Baltimore. The lights of a large portion of the city suddenly went out with no apparent cause, many connections were burnt out, and the switchboard was found to be badly damaged. It was finally discovered that the trouble was caused by a rat which had chanced to step from one copper terminal to another, thus short circuiting the current. The rat's body was wet at the time, thus making it a good electrical conductor. It is estimated that 2,700 volts passed through the little animal, a sufficient voltage to produce 1,000 horse power. The rat's hair was burned off and the body had become rigid as if frozen. This accidental connection of the terminals caused a sheet of flame to spring from one set of terminals to the others, which burned off the rubber insulation of the wires, leaving them exposed, and set fire to the wood-work near them. It was found necessary to replace all the wires on the switchboard before the circuit could again be operated.

**Interrupted Trial of the Ericsson.**

The torpedo boat Ericsson was recently taken to Stratford, Conn., for a preliminary speed trial on the Long Island course. All went well with the boat until, when nearing the finish, the piston rod belonging to the low pressure engine broke, and this mishap was followed by the breaking of the flanges. The starboard engine was completely crippled and the Ericsson was brought to New London by the port engine. Just previous to the accident, her propellers had been running at 420 revolutions per minute, which is equivalent to 24 knots per hour. At the moment the rod gave way it was making 410 turns per minute. The accident will delay the final trial considerably, since the broken parts must be made in Dubuque, where the Ericsson was built.

# SCIENTIFIC AMERICAN

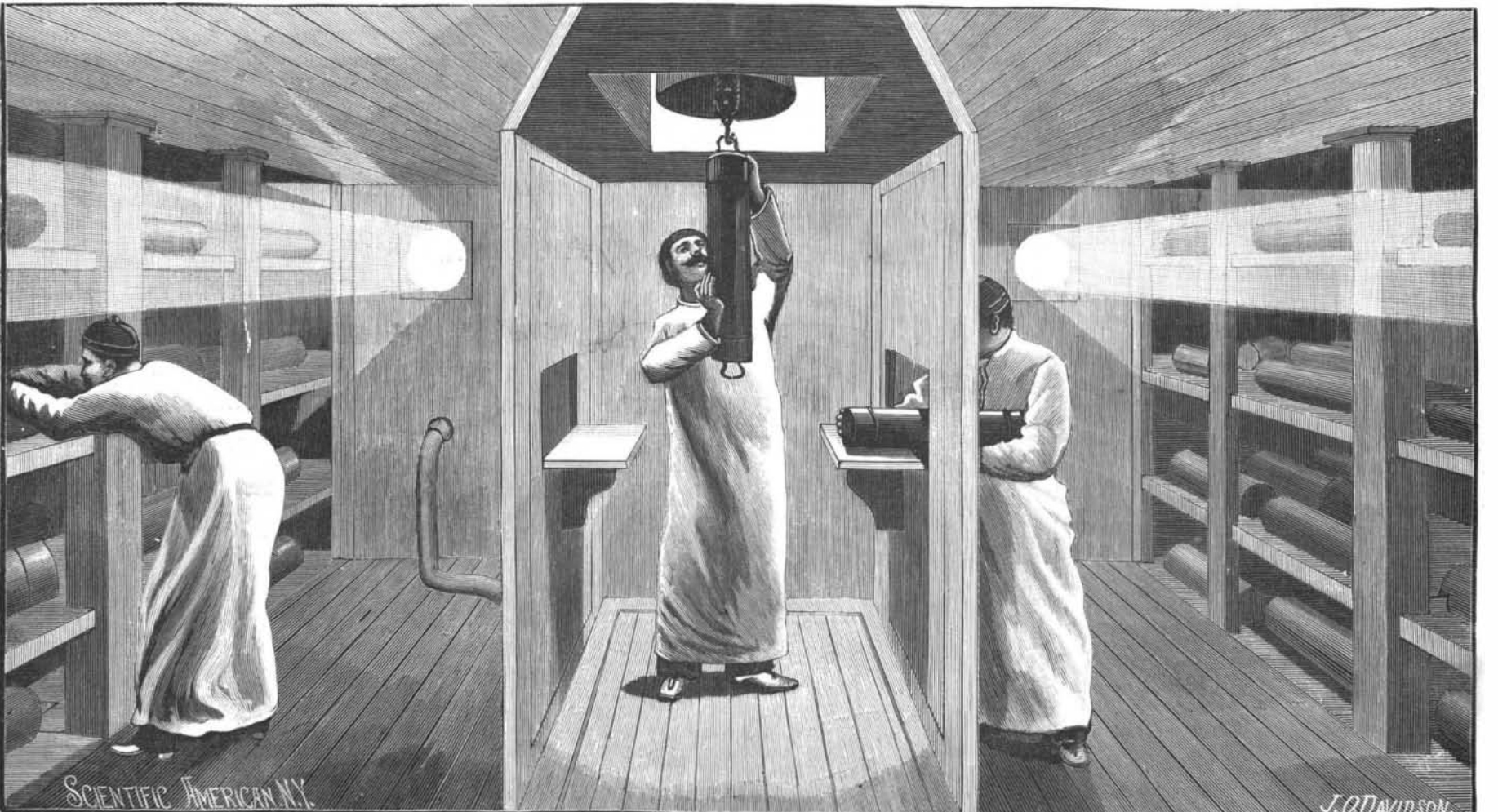
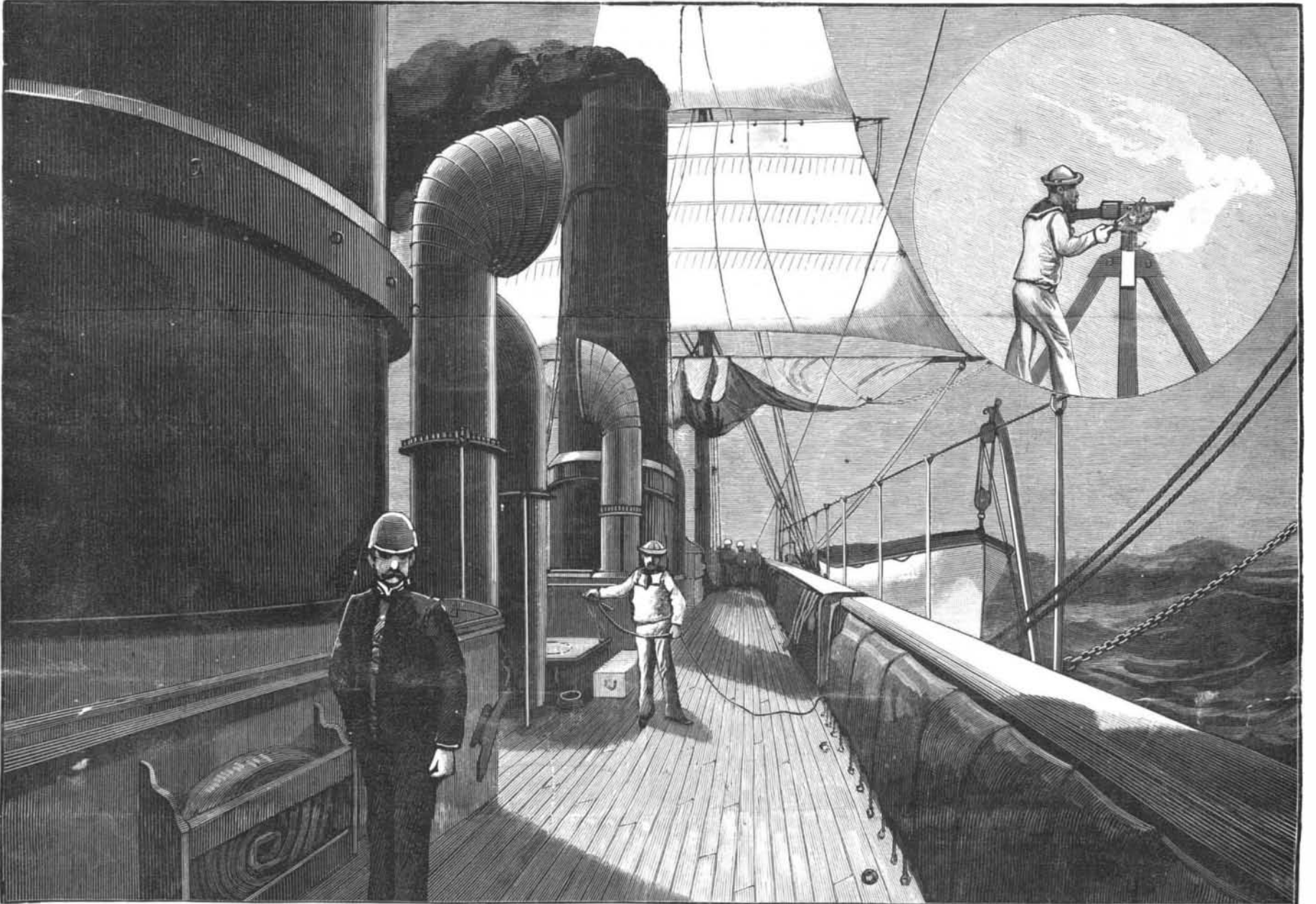
[Entered at the Post Office of New York, N. Y., as Second Class matter. Copyrighted, 1894, by Munn & Co.]

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURES.

Vol. LXXI.—No. 24.  
ESTABLISHED 1845.

NEW YORK, DECEMBER 15, 1894.

[\$3.00 A YEAR.  
WEEKLY.]



The Deck above the Midship Superstructure.

The Magazine and Ammunition Hoist.

A Rapid Firing Gun.

THE UNITED STATES CRUISER ATLANTA.—[See p. 375.]