THE MAKING OF PICTURES IN WOOD.

Salem, Mass., counts among its residents a Mr. E. C. Larabee, whose peculiar art it is to make beautiful pictures from bits of wood, so skillfully that even a practised eye cannot always discover what material has been used. In the simplest method of constructing these pictures two panels of wood, a glass table which can be inclined at any angle, and a Fleetwood jig-saw are employed.

A pen and ink drawing of the picture to be reproduced is glued on a panel of wood $\frac{1}{16}$ of an inch thick. To the panel a wood backing of the same thickness is secured. Both pieces of wood are then sawed along the lines of the drawing. The sawed portions of the top piece are then removed, and the spaces thus formed are filled by the corresponding sawed portions of the lower panel. The finer the saw used, the less kerf will there be.

The reproduction of a picture in colors requires the most consummate skill. It is no mean task to arrange several hundred minute pieces of colored wood so that the tints will blend to produce the effect of an oil painting, without the slightest rigidity and without the faintest suggestion that wood has been employed. In order to secure a good effect, Mr. Larabee assures us that he has spent five hours seeking in his collection of rare woods a piece which was inlaid in five minutes.

The wood is not stained or in any way colored, but is employed in its native tints without any preparatory treatment. Much of the wood comes from parts of the world rarely visited by travelers. A certain sacred tree which grows in India and which formerly was employed only in the making of idols has furnished Mr. Larabee with many a precious bit. Rare woods from Cuba, Porto Rico, and the Philippines found their way into a portrait of President McKinley which now hangs in the White House. The "Parisian Street Musician" reproduced herewith is composed of many woods but little known. In the coat, for example, are pieces of Madagascar black ebony; the hat contains striped ebony from the River Congo; the trousers are inlaid with Alabama persimmon; the eyes are composed of English white holly; the cravat and cuffs consist of American maple; part of the vest is of gold and satin-colored babbool from India; the face and hands are of cream-colored olive-wood from Palestine; the shirt is made of cream quince from Massachusetts; the material of the violin-bridge is Cuban pepil; and parts of the trousers are made of ashen gray impee from Manila.

In making a picture ten by fourteen inches in size from four to six dozen imported Swiss saw-blades are worn out, and from six hundred to eight hundred pieces of wood, one-sixteenth of an inch in thickness, used. Often the sawing of the wood exacts the utmost patience on the part of the artist. Cocoabollo, for example, contains a gum which clogs the teeth of the saw so quickly that not more than six cuts at a time can be made. Some of the most beautiful woods are so rich in oil that they must be baked and partly dried in order that the glue may hold.

Governmental Supervision of Forestry.

During the past year considerable work has been done in private tracts under advice from the Division of Forestry of the Department of Agriculture. In October, 1898, an offer was made to give advice and assistance to private owners in handling their woodlands. This year applications were received from owners in thirty-five States, and the total area covered with these applications was about 1,600,000 acres. Sixty students have taken up forestry as a profession under the instruction of the Division of Forestry, and they have been at work in the forests of the various

"A PARIS STREET MUSICIAN"—PAINTING REPRODUCED IN INLAID WOOD.

States during last summer, under the supervision of trained foresters. The results are of great value. All the expenses of the students are defrayed by the government while the men are in the field. The ultimate object is to prepare the students for service in the Forestry Division of the United States government. At the present time the call for experts is comparatively slight, but is increasing with great rapidity.

THE NEW ARMORED CRUISERS OF THE "CALIFORNIA" AND "MARYLAND" TYPES.

No feature of our latest naval programme shows more forcibly the impress of the lessons learned by our late war with Spain than the new armored cruisers now nearly ready for the bidding contractors. Our new battleships are typically fine craft and thoroughly up to date; but it is the armored cruiser that marks most sharply the pace we have cut out for ourselves. The armored cruiser, besides being the eyes and ears of the fleet, will take its place if need be in the line of battle. The "New York" was an advance upon her British prototype; the "Brooklyn" was an improvement; but the "California" and her class are really second-class battleships with armored-cruiser speed, any one of which against the combined batteries now on the "New York" and "Brooklyn" could hold its own with a very fair prospect of giving the two other ships a pretty bad drubbing. Such is the rapid rate of naval development to-day. The six ships in question were provided for by the acts of Congress of March 3, 1899, and June 7, 1900, respectively, three ships being appropriated for at each time; and those of the earlier act are required to be sheathed and coppered, while the last three allowed for were not so specified. Should authority be given to sheathe and copper the latter vessels, the contractors must stand ready to do so.

The general dimensions of the sheathed and coppered ships are as follows:

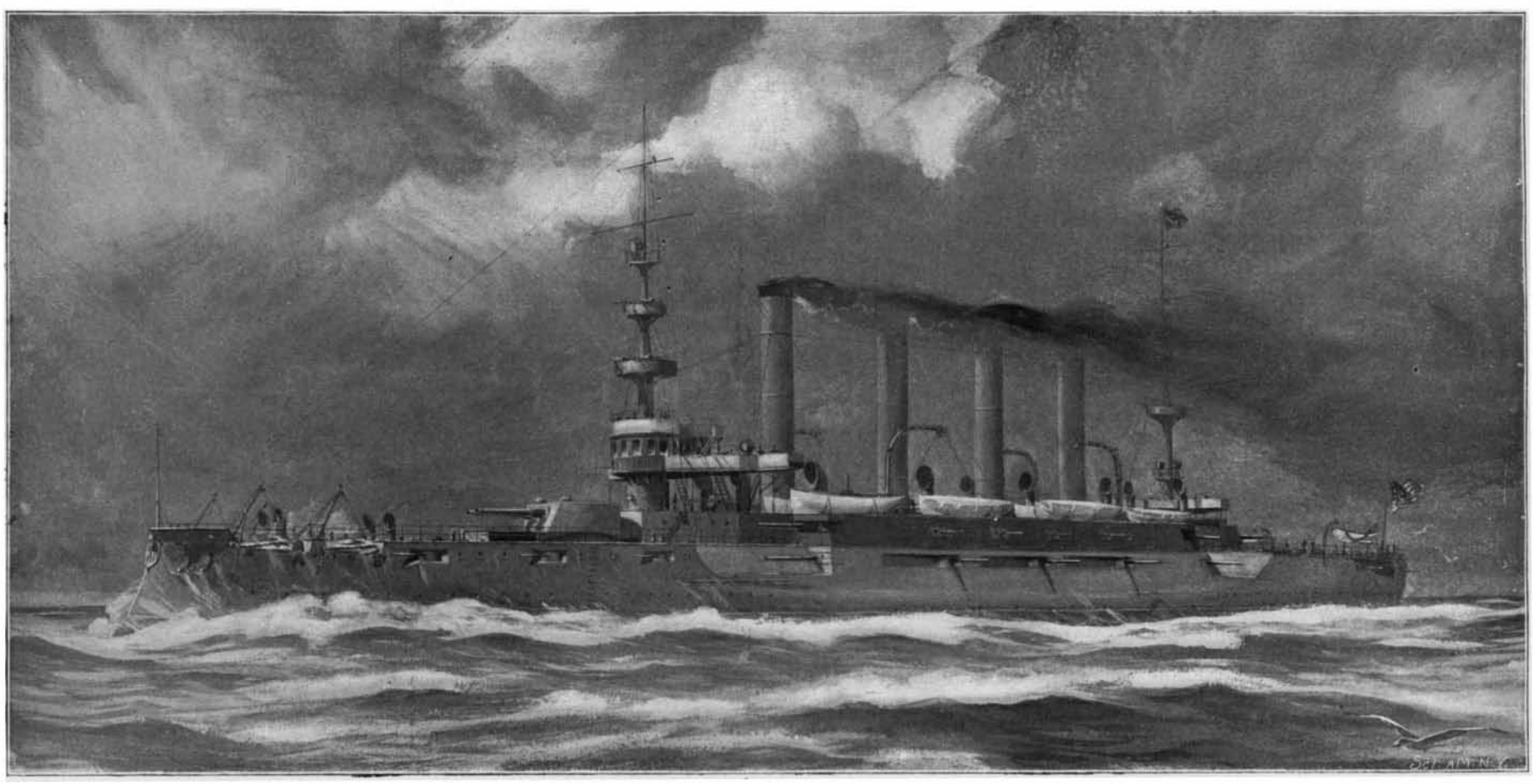
Length on load water-line	502 feet.
Beam, extreme, at load water-line	70 "
Trial displacement, about	13,800 tons.
Mean draught at trial displacement, about	24 feet 6 inches.
Greatest draught, full load	26 " 6 "
Coal carried on trial	900 tons.
Total coal bunker capacity	2,000 "
Feed water carried on trial	75 "
Speed not less than	22 knots.
Maximum indicated horse power	23,000

The only dimensional particulars in which the unsheathed ships will differ from the others are a maximum beam six inches less and a lighter trial displacement by 400 tons; in other respects they are alike.

The ships will have the usual extensive bulkhead system and close water-tight subdivisioning common to all modern fighting ships, and the double bottom will be so arranged that a reserve supply of fresh water may be carried there. The ships will have both docking and bilge keels. The main deck will be the only wooden deck, the others being laid with linoleum; and the use of wood will be restricted to the last degree, all of that within the vessels being fire-proofed.

The fighting positions and the "vitals" will all of them be sheltered behind walls of Kruppized steel, and the arrangement of armor protection will be as follows: First, a water-line belt 7 feet 6 inches wide extending from bow to stern. The belt carries its maximum thickness 4½ feet from the top down, whence it tapers to the armor ledge. For a distance of 244 feet amidships, the armor will have a maximum thickness of 6 inches and a minimum of 5; thence to the bow and to the stern the belt will have a uniform thickness, top and bottom, of 3½ inches. For a distance of 232 feet amidships, above the water-line belt and up to the main deck, the sides will be reinforced by 5-inch armor; transverse bulkheads, turning inboard at the ends of this side armor, will complete the central casemate housing the ten 6-inch guns. These transverse bulkheads will be 4 inches thick. The protective deck will be continuous from bow to stern; on the flat it will be 1½ inch thick and on the slopes 4 inches thick. Above this protective deck, a cellulose belt 3 feet thick will be worked along the sides from one end of the ship to the other. It is required that the water-line armor belt be so placed that at least a foot of it will be out of water at deepest load draught.

The armament will consist of: A main battery of four



Drawing by R. G. Skerrett.

NEW ARMORED CRUISERS OF THE "CALIFORNIA" AND "MARYLAND" TYPES.

Length, 502 feet. **Beam,** 70 feet. **Displacement,** 13,800 tons. **Speed,** 22 knots. **Bunker Capacity,** 2,000 tons. **Armor:** Belt, 6 inches; deck, 1½ to 4 inches; gun positions, 6 inches. **Armament:** Four 45-caliber, 8-inch; fourteen 50-caliber, 6-inch; and eighteen 50-caliber, 3-inch rapid-fire guns; thirty smaller guns. **Torpedo Tubes,** 2 submerged. **Complement,** 822.