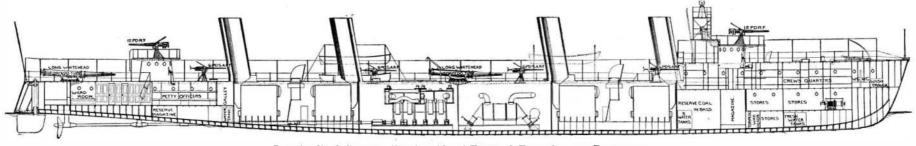
## Scientific American.

## OUR NEW FLEET OF TORPEDO-BOAT DESTROYERS.

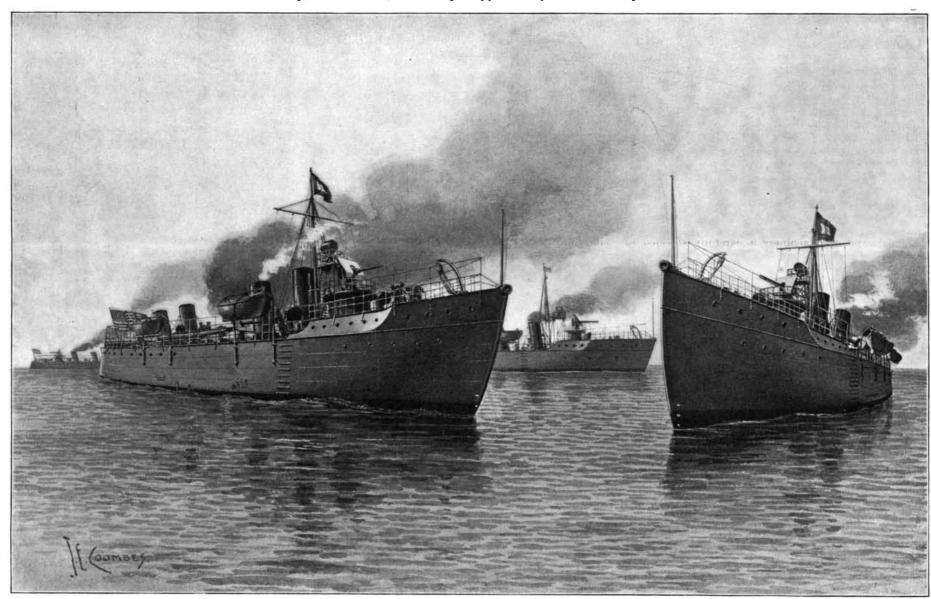
It is only of recent years that the United States government has undertaken the construction of torpedo-boat destroyers on an extensive scale; but thanks to the acts of Congress in the years 1896, 1897, and 1898; we have now either built or building no less than thirty-seven torpedo boats and sixteen destroyers, a total of fifty-three of these formidable little craft. At present we have no torpedo-boat destroyers proper in commission in our navy, the nearest approach to this type being such boats as the "Porter" and the "Dupont," of 165 tons displacement and between 28 and 29 knots speed. There are other vessels much larger than these nearing completion, if not already commissioned, which while they would undoubtedly be capable of accompanying a fleet to sea and are fully as large as some of the torpedo-boat destroyers in other navies, are not listed as such in the official tables of the Bureau of Construction and Repair. Such are the 30-kmot vessels "Bailey" of 235 tons, "Farragut" of named after heroes whose names are associated with the most brilliant episodes of our naval history. It should be noted that the three last named of these vessels, which are being built by the Union Iron Works, of San Francisco, are guaranteed to give a speed of 29 knots with 7,000 instead of 8,000 indicated horse power. Each destroyer will carry on the main deck two torpedo tubes for the discharge of the 18-inch Whitehead torpedo. The armament will consist of two 12-pounder rapid-fire guns carried, one forward and one aft, above the conning towers and protected by shields. There will also be five 6-pounders carried in broadside on the main deck. These vessels will have a length of 245 feet, a beam of 23 feet 7½ inches, and a draught of 6 feet 6 inches. They will be capable of carrying 139 tons of coal closely stowed in their bunkers, and the complement will consist of four officers and sixty men. One excellent feature, which will give them considerable advantage over some of the latest boats that have been constructed for foreign navies, is that in addition

ing about 9 feet. This will considerably improve their speed in steaming to windward in heavy weather. Three of these vessels are being constructed by Neafie & Levy, Philadelphia; two by William R. Trigg & Company, Richmond, Va.; three, as mentioned, by the Union Iron Works, of San Francisco; and one by the Gas Engine and Power Company, Morris Heights, N. Y.

The "Hopkins" and the "Hull." which are being built by the Harlan & Hollingsworth Company, Wilmington, Del., are somewhat smaller vessels. They have about the same length, a foot more beam, and 6 inches less draught with a displacement of 408 tons. They are to achieve 29 knots with 7,200 indicated horse power, and the bunker capacity will be 150 tons, the armament and the complement of officers and crew being the same as for the "Bainbridge." The "Lawrence" and the "Macdonough," which are being built by the Fore River Engine Company, Weymouth, Mass., are the smallest vessels of the fleet. They will be of 400 tons displacement and they are to achieve a speed of 30



Longitudinal Section, "Bainbridge" Type of Torpedo-boat Destroyer.



THE NEW FLEET OF UNITED STATES TORPEDO-BOAT DESTROYERS.

Name of Class, "Bainbridge." Displacement, 420 tons. Speed, 29 knots. Armament, two 3-inch 12-pounders, five 6-pounders. Torpedo Tubes, two 18-inch Whiteheats. Coal, 139 tons. Complement, 64. Date, 1899.

273 tons, "Goldsborough" of 247.5 tons, and the "Stringham," a large boat of 340 tons, which is expected to develop 30 knots with a total horse power of 7,200.

The accompanying illustrations will make our readers familiar with the appearance and internal construction of the sixteen torpedo-boat destroyers of the "Bainbridge" class, which were authorized in May in the year of 1898. The contracts for these vessels were let in the fall of the same year and the contract date of completion lies in the early months of the year 1900. All of them conform closely to the accompanying diagram in the general arrangement of the engines, boilers, armament, etc. There are minor differences which are indicated in the subjoined table.

Nine of the destroyers are of 420 tons displacement and will develop speeds of 28 and 29 knots with 8,000 indicated horse power. They will be known as the "Bainbridge," "Barry," "Chauncey," "Dale," "Decatur," "Paul Jones," "Perry," "Preble," and "Stewart," being

to their relatively large size they are provided with a long forecastle deck which gives them an extreme freeboard forward of 14 feet, the freeboard amidships be-

| Name.      | Number of Vessels. | Length. | Веаш.   | Draught. | Displacement, Tons. | Horse Power. | Speed, Knots. | Bunker Capacity. | Torpedo Tubes.    | Armament.                       |
|------------|--------------------|---------|---------|----------|---------------------|--------------|---------------|------------------|-------------------|---------------------------------|
|            |                    | Ft.In.  | Ft.In.  | Ft.In.   |                     |              |               |                  |                   |                                 |
| Bainbridge | 9                  | 245     | 23 71/2 | 66       | 420                 | 8,000*       | 29            | 139              | 2- <b>1</b> 8 in. | 2-12 pdr.,                      |
| Hopkins    | 2                  | 244     | 24 6    | 60       | 408                 | 7,200        | 29            | 150              | "                 | 5–6 pdr.<br>2–12 pdr.           |
| Lawrence   | 2                  | 2423    | 22 3    | 6 21/8   | 400                 | 8,400        | 30            | 115              |                   | 5-6 pdr.<br>2-12 pdr.           |
| Worden     | 3                  | 248     | 23 3    | 60       | 433                 | 8,300        | 30            | 232              |                   | 5-6 pdr<br>2-12 pdr.<br>5-6 pdr |

\* The "Paul Jones," "Perry," and "Preble" are to indicate 7,000 horse

knots with 8,400 indicated horse power. The coal capacity will be less, namely, 115 tons; particulars of the armament and the complement will be the same as for the other vessels. The largest of the fleet will be the "Truxton," "Whipple," and "Worden," building by the Maryland Steel Company, at Sparrows Point, Md. They will be 248 feet in length, 23 feet 3 inches beam, and on a draught of 6 feet they will have a displacement of 433 tons. They will have the large bunker capacity of 232 tons—a very valuable feature—and they are to make a speed of 30 knots with a development of 8,300 horse power.

These destroyers when completed cannot fail to produce a favorable impression. Their size, roominess, coal capacity, and powerful armament, and above all their good sea-going qualities, and high speed, will place them in the very front rank of this type of vessel.

In the year 1898 no less than \$425,000,000 was invested in Great Britain alone in electrical enterprises.