

### The New Navy.

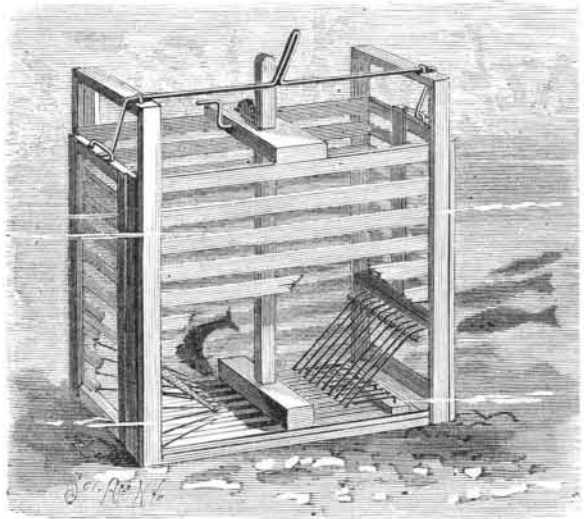
An interesting account of the new American navy is embodied in the annual report of the American Iron and Steel Association. All the vessels for the new navy, except five partly completed iron monitors, are or will be built of steel. After long delay the completion of these monitors has recently been authorized. Their keels were laid in 1874 and 1875. They are armored and double-turreted. Each monitor is to have four 10-inch breech-loading rifled guns in its main battery and several rapid-fire and Gatling guns in its secondary battery. The guns of the main batteries are all breech-loading rifles. Besides the main batteries, each vessel will be equipped with a secondary battery, which in nearly every ship will consist of several small rapid-fire guns, from 6-pounders down, revolving cannon, and from two to four Gatling guns. The vessels recently built or now building are:

Vessel.	Type.	Displacement. Tons.	Main Battery.
Texas .....	Belted.....	6,300	2 12-inch. 6 6-inch.
Maine.....	Belted.....	6,648	4 10-inch. 6 6-inch.
Chicago.....	Cruiser.....	4,500	4 8-inch. 8 6-inch. 2 5-inch.
Boston.....	Cruiser.....	3,189	2 8-inch. 6 6-inch.
Atlanta.....	Cruiser.....	3,189	2 8-inch. 6 6-inch.
Dolphin.....	Dispatch.....	1,485	1 6-inch.
Newark.....	Cruiser.....	4,083	12 6-inch.
Charleston.....	Cruiser.....	3,730	2 8-inch. 6 6-inch.
Baltimore.....	Cruiser.....	4,413	4 8-inch. 6 6-inch.
Philadelphia.....	Cruiser.....	4,324	12 6-inch.
San Francisco.....	Cruiser.....	4,083	12 6-inch.
Yorktown.....	Gunboat.....	1,700	6 6-inch.
Petrel.....	Gunboat.....	890	4 6-inch.
Concord.....	Gunboat.....	1,700	6 6-inch.
Bennington.....	Gunboat.....	1,700	6 6-inch.
Vesuvius.....	Cruiser.....	725	3 15-inch dynamite guns.
First class torpedo boat.....	Torpedo.....	99	8 automobile torpedoes.

The Texas has an armor 12 inches thick and the Maine one 11 inches thick. The other ships are unarmored. The building of a coast defense vessel of 4,000 tons displacement, four additional steel cruisers, and three gunboats has been authorized by Congress. When all the vessels enumerated above shall have been completed, the United States will have a navy of thirty-six iron and steel vessels, all, excepting the five monitors, built on the most approved modern plans. This fleet will consist of eighteen cruisers (including two dynamite cruisers and a cruising monitor), one dispatch vessel, six gunboats, one torpedo boat, seven coast or harbor defense vessels (including the five monitors), two line-of-battle ships, and one training ship. Eleven ships of the fleet, including the monitors and two of the cruisers, will be armored.

### AN IMPROVED FISH TRAP.

The accompanying illustration represents a fish trap recently patented by Mr. Elijah W. Jenkins, of Milford, Mo. The frame has slatted side walls and a central cross piece, while in the corner post are held vertically movable slatted end walls, connected to the arms of a rod, the center of which is bent to form a lever, by pressing down upon which the end walls may be elevated to permit the entrance of the fish. Wires are hinged to the inside of the frame in such way that the



JENKINS' FISH TRAP.

fish may swim into the trap under the wires, when the wires will drop down and prevent the escape of the fish. Wire netting and converging wires are also provided on the inside of the frame to prevent the fish from swimming through the trap. To the central cross piece of a false bottom of the trap is pivoted a vertical rack bar, passing up through the upper cross piece, on which is a gear wheel secured upon a crank shaft, by turning which the false bottom and also the two end frames may be drawn up, the slatted end walls being at such time lowered to prevent the escape of the fish. For further information address Mr. G. B. Peter, agent, Milford, Mo.

### THE TOTAL ECLIPSE OF THE SUN AT LICK OBSERVATORY.

Professor Holden, Director of the Lick Observatory, is preparing an elaborate report upon the result of the observations made during the total eclipse of the sun in the latter part of last January. This will be looked for with special interest. We have been fortunate enough to procure one of the photographic negatives made at that time, which we reproduce by photo-engraving process. It is printed as a positive in order that the form and extent of the sun's corona may be represented in black, thus defining more clearly the delicate penciling of the rays of the corona. In a letter published in the *San Francisco Call*, Professor Holden says:

"The first result of the photographs has been to show that the characteristic forms of the solar corona vary every eleven years, as the sun spots and the exhibitions of the aurora borealis vary in frequency. Besides this capital conclusion, the photographs enable us to conclude that the so-called polar rays of the corona can be traced all round the sun's circumference, even at the equator, and thus that we must consider these polar rays (so called) as a special typical form, quite different from the other class of rays which they resemble in appearance, but which are only to be found associated with the equatorial wings and extensions of the outer corona."

"So far as I know, no photograph of the corona has traced these wings further from the center than fifty minutes of arc. Out to that distance they seem to be convergent and to indicate that they quickly come to an end. Mr. Barnard's photographs, however, show faint extensions as far out as seventy-five minutes of arc, and it is evident that the outer corona, instead of quickly terminating, must extend far into space. The pictures show this divergent outer extension in a form like that of a fan, or like the open mouth of a trumpet. This, of course, indicates that the outer corona is in the shape of a huge disk, surrounding the whole sun, with its outer rim much deeper than its inner one. In fact, if the sun were surrounded by a ring of meteorites, the appearances would be much the same as in the photographs." In two photographs the outer corona is distinctly defined as far out as the 95° circle, and may be indistinctly traced as far as 135 to 165 minutes respectively.

### War Ships Launched in 1888.

According to a careful estimate, the number of war vessels launched last year by the naval powers of the world was 60, while more than 100 were building when it closed. England led, with 15 vessels launched and 28 building; France launched 9, and laid down 15; Russia launched 2, and began 10; Germany put 6 vessels into the water, and ordered or laid down 4; Italy launched 10, and laid down 18; Austria launched no vessel, but laid down or ordered 3; Sweden laid down 1; Denmark launched 1, and laid down another; China added 4 vessels to her navy, and ordered or laid down 4 more; Japan ordered 3, and launched 3; the United States launched 6, and laid down 6; Chili ordered a new cruiser in England, and the Argentine Republic contracted for a 4,300 ton ironclad; Brazil laid down a cruiser, and even Uruguay has contributed to the navies of the world, launching a small iron gunboat. The minor powers, like Greece and Portugal, have either contracted for or launched small vessels. Turkey has begun the work of building up her navy, laying down one ironclad and several smaller vessels.

### Increasing Longevity.

Dr. Todd, president of the Georgia State Medical Society, read at the annual meeting of that body, held at Atlanta recently, a paper on "Longevity," which possesses great intrinsic interest and at the same time is gratifying as showing how much medical and sanitary science and a more rational mode of life have done to prolong the human span, and how much better in every way are the conditions of to-day than of those "good old times" for the return of which sentimentalists vainly sigh. The doctor is modest in his claims, making no effort to monopolize in the name of the medical profession credit for a betterment in which so many agencies play parts; but he does claim, and with reason, that the intelligent physician has had much to do with the result, and that the death rate of the various peoples of the globe bears a ratio very nearly inverse to the number of qualified physicians among them. The highest death rate in Europe is that of Russia, ranging from 20 per thousand in Courland and 22 per thousand in the Baltic province, there being many physicians in both districts, to 49 in places where there are but few. But one-half of the children born in some parts of Russia reach the seventh year, and of 1,000 male children only from 480 to 490 reach the age of 21 years, and of these only 375 are able-bodied. Russia, with all its teeming population, has only 15,414

regular physicians, and one surgeon to 100,000 population. The United States, having a doctor of medicine for every 600 population, shows the lowest death rate in the world, England following. The average life expectancy in the United States is now 55 years; in England among the urban population it is 50, and among the ruralists 54 years plus. Russians have a life expectancy of but 28 years, approximately, and Chilians of the same, while in Ellobed, in the Soudan, 23 years is a generation. The average life in the Rome of the Cæsars was 18 years; now it is 40 years. Within fifty years the average in France has increased from 28 to 45½ years, and in the days of Queen Elizabeth the English average was but 20 years. Dr. Todd ascribes the great and progressive change for the better to advanced medical knowledge, better drainage and diet, greater cleanliness, and to vaccination and the use of anesthetics, quinine, and the like. He thinks that quinine alone has added two years to the average life of civilized man. To these agencies should be added the decrease of war, the more lenient laws, and the greater temperance of our day.—*Detroit Free Press*.

### A Partnership Birds' Nest.

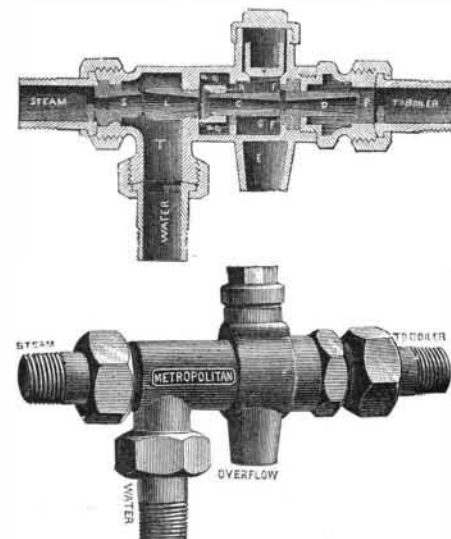
Mr. W. E. Beale writes from Folkington Manor to the *Times*: "On this estate is to be seen a nest which has evidently been built partly by a thrush and partly by a hedge sparrow. The nest itself is of the ordinary size of the thrush's nest. But instead of being lined with mud, it is lined with horsehair, wool, and moss. The birds seem to have been good friends during the laying of their eggs. Recently there were three sparrow's eggs in the nest and five thrush's. But on visiting the nest later, it was found that the sparrow's eggs had been destroyed. The birds appear to have quarreled when it came to the question of which should sit on them, and the thrush asserted its rights, not, however, without a struggle on the part of the sparrow, one of the thrush's eggs being broken, one missing, and three being perfect."

### Woman's Place in Nature.

Mr. Grant Allen propounds in *The Forum* a new view of "Woman's Place in Nature." "The males," he says "are the race; the females are merely the sex told off to recruit and produce it. All that is distinctively human is man—the field, the ship, the mine, the workshop; all that is truly woman is merely reproductive—the home, the nursery, the schoolroom." "This very necessity for telling off at least a considerable number of the women for the arduous duties of human maternity prevents the possibility of woman, as such, ever being really in any deep sense the race. It is human to till, to build, to navigate, to manufacture; and these are the functions that fall upon man." "The males have built up human civilization and have made the great functionally acquired gains in human faculty, while the females have acted as mere passive transmitters of these male acquisitions."

### AN IMPROVED AUTOMATIC INJECTOR.

An injector which is exceedingly simple in operation, and designed for use on any kind of boiler, is shown in the accompanying illustration. In operation it should always be placed in horizontal position, as shown, and the steam and suction pipes supplied with globe valves. Its construction and operation will be readily understood from the sectional view. When an examination of the parts is necessary, it can be readily taken apart



DESMOND'S AUTOMATIC INJECTOR.

with an ordinary monkey wrench and screw driver. This injector, it is said, can be started with 20 pounds of steam, and works up to 145 pounds without adjustment, it being adapted to work up to 200 pounds. It is claimed that a hot suction pipe will not prevent the injector from starting readily, and that severe jarring will not affect its working, its automatic qualities restarting it if the feed is temporarily stopped. This injector was invented and perfected by John Desmond, and is manufactured for Messrs. Jenkins Brothers, 71 John Street, New York City.