PROGRESS OF OUR IRON CLADS—FOREIGN ARMOR FRIGATES.

The new iron-clad gunboat *Fort Henry* was launched at Corondelet, about three miles below St. Louis, Mo., on the 24th ult. She is 280 feet in length and 40 in breadth. She was designed by Commodore Porter and is similar to the gunboat *Essex*, which is described on page 154 this Vol. Scientific American. The *Choctaw*, another river gunboat, was launched on the 27th ult., from the same yard as the *Essex*, and she has been towed to St. Louis to have her armor plates put on. She is 225 feet in length and is designed to carry a turret with two heavy guns. The *Fort Henry* will carry six heavy guns. Both of these vessels are to be furnished with solid metal bows several feet in length, to enable them to be used for rams as well as gunboats. They are to be lined under the iron plates with prepared india rubber. The experience of the English Naval Commission with iron targets lined with india rubber, has been reported to be very unfavorable to the use of this material. Some defect must have existed in the method of applying the rubber to the targets in England or the rubber used was not properly prepared. The testimony as to the beneficial results of india rubber lining in the gunboat *Essex* appear to be unquestionable. In proportion to the thickness of her plates, judging from the report of Commodore Porter himself, published on page 210 this Vol. Scientific American, she is the best shot-resisting vessel afloat.

A new iron clad of the *Monitor* class was launched at Wilmington, Delaware, on the 27th ult. She is constructed on the designs of Captain Ericsson; will have a revolving turret and carry two 15-inch Dahlgren guns.

There are about 2,000 persons employed on iron clads at the Rowland's Works, Green Point, L. I.; 1,000 at Delamater's Works, this city, and 1,200 at Colwell's Works, Jersey City. The great iron-clad ram of 7,000 tuns burden to be built by W. H. Webb, has been commenced, and Whitney's ram—the *Moodna*—building at the Dry Dock is being pushed forward rapidly. When all the iron clad vessels now building for our navy are completed, we shall have a large and powerful mail-clad fleet. A correspondent of the New York *Tribune* of the 30th ult., states that when all these iron clads are finished we shall have 40, which will probably be a greater number than all the iron clads of the rest of the world.

This may be true, as it covers our river and sea armor vessels. But from statements made in foreign papers we understand that France alone will have 36 iron-clad frigates completed by the end of 1863. England has only four finished at present, namely, the *Warrior*, *Black Prince*, *Resistance* and *Defence*; and there will not be more than six or eight others finished next year. We must not overlook the fact, however, that England, in her great engineering establishments, has the capacity to finish an iron-plated wooden vessel every week. A French writer on naval vessels asserts that the British Admiralty is a sort of fossil institution far behind the age, and unlike the genius of the people.

It seems to us that the designers and constructors of iron-clad vessels in England have committed a great mistake in building their frigates with too great a draft of water. The *Warrior* and *Black Prince* draw no less than 26 feet forward and 27½ feet aft. There are very few ports in the world where such vessels are capable of entering, and very few places where they could be employed for bombardment. They are only fit for deep-sea sailing, and for encounters with other frigates on the ocean. A recent trial of the *Black Prince* was unfortunate in point of speed. She made only 13½ knots per hour, whereas she was expected to make 14½. This is much less than the *Warrior*, yet she is built on the same model, is the same size, and has engines of the same power. The English engineers are puzzled to account for the difference in speed. The *Royal Oak*, a new armor-clad frigate, was launched at Chatham on the 9th ult. She had only three tier of 4½-inch plates (seventy in number) on her larboard and starboard sides, yet she drew 19½ feet aft and 13½ feet forward. When her armor (which requires 230 more plates) is all on, and her armament in, she will draw 24 feet at least, and will also be almost useless except for deep-sea operations.

VALUABLE RECEIPTS.

Lotion for Restoring the Color of Gray Hair.—Take half an ounce of sulphur steeped in alcohol and quarter of an ounce of sugar of lead, mixed with ten ounces of rose water in a phial. The phial should be shaken every time the liquid is applied, which should be every evening with a sponge for about a week at first, then twice a week after the color of the hair is restored. The head should be covered with a close glazed linen cap after this lotion is put on.

Milk of Almonds for the Complexion.—This much admired and harmless cosmetic may be prepared thus: Procure a quarter of a pound of the best Jordan almonds, which blanch by putting them into boiling water for three minutes, and afterward into cold water for the same time, the skin or pellicle will then slip off by pressure between the thumb and finger. The almonds are now to be crushed in a mortar, and rubbed with a quarter of an ounce of the best white or curd soap. Continue the rubbing for a quarter of an hour, during which period gradually add one quart of rose water. When the whole resembles milk strain through fine muslin. It is then fit for use, and may be applied to the skin with the corner of a soft towel after washing. Those who are without a mortar must grate the almonds on a bread grater and rub the ingredients together with clean hands. Fresh rain water, or plain distilled water, will answer in lieu of rose water where economy is studied.

Powder for Chafed Skin.—This preparation is universally applied for drying the skin after washing, especially at the joints, which if left even damp at certain seasons produces chaps and chafing, often followed, if neglected, by inflammation. Violet powder is best prepared by mixing three parts of the best wheat starch with one of finely ground orris root: the latter adds to the drying power of the starch, and imparts at the same time an agreeable odor like that of the violet, hence the name of the mixture. It is also prepared by perfuming starch with essential oils without the addition of orris root; but though the scent of the powder is stronger and, to some, more tempting to use, it is far less beneficial in its application. The scent, acting as a stimulant to the skin, increases rather than abates any tendency to redness. Unperfumed powder is therefore best to use, dusted over the part with a little swan's down, commonly called a puff.

CONTINUED PROGRESS OF AMERICAN INVENTIONS IN EUROPE.

The following inventions have been recently patented in England, through the Scientific American Patent Agency. The popularity of American inventions in Europe, is fully portrayed by the jurors' flattering report on the products exhibited at the great National Fair now holding in London:—

Improvement in the Construction of Reversible Seats.—Patentee, Dr. Thomas Rainey, formerly of the city of New York, but now residing at Rio de Janeiro, Brazil. This invention relates to a mode of constructing seats suitable for carriages, steam vessels and other uses, so that the inclination of the back may be reversed at pleasure. The seat has a rocking motion, and as the back is reversed, the inclination of the seat is also changed, inclining backward, suitable for lounging; or it may be brought to a level position for use at table.

Improvement in the Construction of Boots and Shoes.—Patentee, Edward Heaton, of New Haven, Conn. A metal shank is attached directly to the insole, and the shank portion of the outsole is dispensed with; thus effecting considerable economy of leather, and making the boot or shoe more durable and easy to the foot.

Improvement in the Condensing Apparatus of Steam Engines.—Patentee, Francis B. Stevens, of Weehawken, N. J. The essential feature of this invention is the combination of a surface or external condenser, placed between the side pipes and the ordinary condenser of a steam engine, with a cooler for cooling the water from the hot well, this cooler being placed between the hot well and the ordinary condenser; so that the steam, after being partially condensed by the ordinary condenser, is then further condensed by means of the injection of the cooled water from the hot well into the ordinary condenser.

Improvements in the Construction of Grain and Grass Harvesters.—Patentees, Edwin P. Russell and Porter Tremain, of Manlius, N. Y. This invention relates to an improvement in the sickle-driving mechanism, which permits the sickle and finger bar to conform to the inequalities of the ground; the seat and reel being also adapted to the modification.

Improvements in Rotary Engines.—Patentee, John B. Root, of New York city. Engravings would be required to give any idea of this invention. The engine is in practical operation in this city, and works to the satisfaction of its owners, and is said to effect great saving in fuel. We shall publish engravings of this invention before many weeks.

Improvements in Artificial Teeth.—Patentee, Samuel S. White, of Philadelphia. This invention consists in fixing teeth in vulcanite by means of metal pins, having heads in those ends which project from the teeth before they are fixed in their place.

Improvements in Pumps.—Patentees, Calvin and George M. Woodward, of New York city. The body of the pump is bored through transversely to receive cylindrical valve chambers, in which the valves are fitted; thus allowing the valves to be easily introduced and taken out.

Improved Arrangement of Fire Escape.—Patentee, Aaron Shute, of Flushing, L. I. A flexible ladder is attached to a balcony in front of the house, and folded into a box in such a manner that it may be readily dropped before the windows by pulling a rod which passes through all the floors. This invention is coming into use in this city.

Improved Hoisting Apparatus.—Patentees, James Doyle and James Christison, both of New York City. This is a novel arrangement of a chain pulley and winch, which would require engravings for its explanation. But it is one of the best inventions which has come to our knowledge for some time.

MISCELLANEOUS SUMMARY.

A Wonderful Specimen of art in Jewelry.—A jeweler exhibits in the World's Fair at London, a most accurate miniature portrait of the Queen, composed of distinct brilliants almost as fine as diamond dust, and of which more than 2,000 are required to complete the likeness, small as it is. Another jeweler contributes a necklace of diamonds, worth nearly half a million of dollars.

Value of a Candle Box of Dirt.—The Masonic and Highland mining companies, at West Ravine, Cal., according to the *Democrat*, took from their claims in one week, over 800 ounces. From a candle box full of dirt, they washed out $120. The Primrose Quartz company's mill, at Hog Canon, took out $10,000 in 30 days' run.

Commodore Goldsborough has on board his flagship, the *Minnesota*, a complete printing press and apparatus, by means of which he strikes off copies of all his orders, letters and dispatches for the seventy vessels of his fleet, thereby economizing time and labor, and avoiding errors.

The University of Michigan, at Ann Arbor, has an annual income of $40,000, from funds accruing from the sale of lands granted by the United States Government. The catalogue of this Institution, for the last year, showed an attendance of 500 students.

There are no less than 384 vessels built and being built for our navy. Their total tunnage is 371,665 tuns; guns 434. Of these there are 13 iron-cased gunboats built, and 40 new river and sea gunboats of different sizes in different stages of progress.

It is said that when a Frenchman has to wait, he smokes; a German meditates; an Italian sleeps; an Englishman takes a walk; an American invents some new contortion of the limbs, and tries to put his feet higher than ever.

There are no less than eight hundred persons, men, women and children, employed at the United States Arsenal at Watertown, Mass., in the preparation of cartridges, and in the manufacture of other munitions of war.

Coal which could have been bought in this city three months ago for $4 50 per tun, is now selling at $7 50. The chief cause of this great rise in its price is said to be a combination of the Pennsylvania coal companies.

During the present season 691 boats left Cumberland, Md., carrying 74,235 tuns of coal.