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O. D. MUNN, S. H. WALES, A. E. BEACH.

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FIFTEEN THOUSAND PATENTS SECURED THROUGH OUR AGENCY.

The publishers of this paper have been engaged in procuring patents for the past sixteen years, during which time they have acted as Attorneys for more than FIFTEEN THOUSAND patentees. Nearly all the patents taken by American citizens in FOREIGN countries are procured through the agency of this office.

Pamphlets of instructions as to the best mode of obtaining patents in this and all foreign countries are furnished free on application.

For further particulars as to what can be done for inventors at this office, see advertisement on another page, or address

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BRITISH AND AMERICAN IRON-CLAD SHIPS OF WAR.

The British papers contain glowing accounts of the trial of the *Warrior*, the first armor-clad frigate built for the British navy. This vessel is of 6,500 tons capacity, and her engines are said to be capable of working up to 6,000-horse power. Her broadsides are covered with 4½-inch-iron plates; on the center of the spar deck is a shotproof tower for riflemen, and she carries a small cupola for melting iron to fill shells with molten metal. This is the new method of making red hot shot. The armament of the *Warrior* consists of thirty-four 68-pounders (smooth bore) in the broadside ports, two 100-pounder Armstrong rifled pivot guns on the upper deck—one forward and the other aft; also, three 40-pounders, two 25-pounders, a 26-pounder and a 6-pounder Armstrong, and a 27-pound brass howitzer, all on the upper deck. With 650 men on board, coals, water and full equipment, she drew 25 feet 9 inches of water forward, and 26 feet 3 inches aft, and obtained a speed of 16½ knots per hour. She has proved herself to be the fastest large war vessel afloat, as she is no doubt the most powerful.

The keel for a new iron-clad gunboat was laid at the Continental Works, Greenpoint, L. I., on the 30th ult. Her length, it has been stated, is to be 175 feet; breadth, 40 feet; depth, 12 feet. Above the water line, and to a short distance below it, she will be covered with 6-inch wrought iron plates, and under this with plating 5/8ths of an inch in thickness. She is intended to carry the largest size of Rodman's guns, two of which are to be placed on deck on a revolving fort covered with 8-inch plates.

The Philadelphia *Ledger* states that Messrs. Merrick and Son, of that city, have also received a contract from government to build an iron-clad frigate of 3,500 tons, which is to be completed and ready for sea in eight months. Her length is to be 240 feet; breadth of beam, 58 feet; depth of hold, 20 feet. The iron plates for this vessel are to be 20 feet long, 18 inches wide and 4½ inches thick, and her armament is to consist of sixteen of the largest size of rifled guns.

Counting the Stevens floating battery at Hoboken (the parent of iron-clad ships), the iron-clad gunboat being built by Messrs. Stevens at Bordentown, N. J., and the mailed gunboat now building at Mystic, Conn.,

we have no less than five iron-clad ocean war vessels in progress of construction, beside several iron-plated river steamboats on the Mississippi. We are therefore making considerable progress toward securing an iron-clad navy, although, with but one exception, perhaps, none of these vessels will be first-class; still they may prove very efficient, and answer all the purposes demanded by the exigencies of the times.

In connection with this subject, the Boston *Commercial Bulletin* strikes a chord which excites some mental vibrations of an unpleasant nature. It states that Mr. Donald McKay has been the only practical ship-builder who has directed public attention to the building of iron-clad frigates in America, and he embodied his ideas in a practical form after a careful inspection of the French and English iron-clad vessels. He made a model of an iron-clad frigate and submitted it some time ago, with full specifications, to our naval authorities. "His model," says the *Bulletin*, "was an improvement upon all that he had seen abroad, and those qualified to form an opinion spoke unhesitatingly in its favor; but, for reasons unknown to us, our Navy Department ignored his designs, and gave the iron-cased vessels to other parties to construct." The reason for this course we can perhaps explain satisfactorily. The Navy Department advertised for designs to be submitted for the building of two or three iron-clad vessels, as noticed on page 123 of the present volume of the SCIENTIFIC AMERICAN, and those who submitted specifications in accordance with that advertisement, we have been informed, were awarded the contracts. Nevertheless, it is to be regretted that the government has not availed itself of the ripe experience of Mr. McKay, as it is well known that he made two long sojourns in Europe for the purpose of inspecting the French and British dockyards, and he was admitted into the naval arsenals of those Powers and obtained information respecting the building of iron-clad and other war vessels which no other man in our country possesses.

In connection with this subject, we would suggest that several of our States—especially Massachusetts, New York and Pennsylvania—each build an iron-clad frigate and present them to the Federal government. The States have furnished arms and ammunitions for the army; let them now do something for the navy; and what can they do more to the purpose than build several iron-clad war vessels?

BLUE ARMY CLOTH.

Considerable feeling was lately manifested by woolen manufacturers in Boston on account of some large orders which had been given by the Adjutant-General U. S. A. for English army blankets. They protested against sending abroad for such goods, and it was asserted the mills in New England were capable of supplying all the demands of the War Department. This may be true with regard to the capacity of our blanket woolen mills, but unless our military regulations be changed we shall yet have to send to England for large supplies of army cloth. It is well known that dark blue is the chief color required for the coats of the officers and privates of the army and navy, and we do not overstate the number when we say there are not far from six hundred thousand men now wearing military uniforms. The amount of dark blue cloth for equipping this great host will be about four and a half million yards per annum, allowing three coats to each man. This is not putting the allowance too high for men engaged in hard warfare, especially when it is also taken into consideration that a large portion of the army must also be furnished with dark blue overcoats. Can our manufacturers supply this large quantity of cloth? We believe they cannot; and we think they have never manufactured the finer qualities of army cloth. In conversation a few days since with a customer clothier who frequently furnishes suits for many of the highest officers in the regular army, he informed us they always wanted the best cloth, such as maintained a fresh appearance from the day it was put on until it was worn threadbare. The West of England blue broadcloth was usually selected as possessing this quality. Beside the blue coats required for our army and navy, the officers wear dark blue trousers, and so do the entire cavalry. The color of the trousers and overcoats of the infantry soldiers, who are clothed in the United States' uniform, is also blue, but its tone

is quite light. For the entire annual equipment of our army and navy in uniform, we may safely allow one-half the quantity of cloth for trousers that is necessary for coats, thus making the total six and three-quarter million yards of indigo-blue cloth.

Our manufacturers, we are told, cannot obtain a sufficient supply of indigo to dye the amount of wool required for one-half this amount of cloth. Never before have we required so much of this coloring material, and never before was the supply so limited, the stock of the finer qualities being nearly exhausted. A dealer in indigo told us a few days since that he could sell fifty cases of it for every one he has on hand or can get. The East India crops of Bengal and Manilla indigo were greatly reduced last year by disturbances among the cultivators, and the crops in South America were unusually light. These facts and circumstances lead us to conclude that we shall yet have to send to England, which commands such a large share of the world's indigo crop, for very large stores of indigo unless our military regulations are greatly relaxed so far as they relate to permanent colors. We have no hesitation in asserting that durable dark blue colors can be dyed with logwood. They will withstand exposure until the uniforms are worn out, and this should be satisfactory. Such colors are dyed by several "boiling dips" alternately in a weak mordant of sulphate of iron and a bath of logwood until the proper tone is received, then finished with a very weak liquor of blue galls. The color thus obtained will be as permanent as that of common black felt hats, which is well known to withstand sunlight and rain for a long period.

A blue color can be dyed, with logwood, upon wool with a variety of what are called "mordants." By preparing the wool with a sulphate of copper solution, then dyeing it in a logwood liquor, a blue color is obtained which, when new, is not unlike that of indigo, but it is photogenic, and soon fades when exposed to the action of sunlight. A very beautiful dark blue can also be dyed on wool with the prussiate of potash, the muriate of tin and a minute quantity of the nitrate of iron; after which logwood is applied to render the tone deep and rich. However pleasing this color may appear when new, it fades when exposed to sunshine and moisture. A mordant composed of the bichromate of potash and crude tartar makes a very good blue with logwood, but the sulphate of iron and logwood blue is the most tenable color. A logwood blue is neither so beautiful nor so permanent as the color obtained from alkaline indigo, still it will answer every purpose for common army clothing, and effect a saving of at least a million of dollars to the country.

DIFFICULTIES IN CONDUCTING A PAPER— CONTRIBUTIONS WANTED.

A music teacher once wrote that the "art of playing on the violin requires the nicest perception and the most sensibility of any art in the known world." Upon which an editor comments in the following manner:—"The art of publishing a newspaper and making it pay, and, at the same time, have it please everybody, beats fiddling higher than a kite."

It is the ambition of all editors to make their paper interesting to all their subscribers, but owing to the different tastes of their readers, one of the most trying things an editor has to decide is the subjects upon which to write.

A theme with which one person will be exceedingly pleased, another reader, possessing a different taste, will fail to appreciate, while he may be exceedingly interested in some article which the first will entirely overlook, or, having read it, will pronounce it stupid. Thus it is not only difficult but impossible for the conductor of a journal of any considerable circulation to edit it so that every article shall be read with equal interest by all its patrons.

In conducting this journal, it is the aim of the publishers to present as great a variety of useful matter as possible in every number; and, to this end, we solicit contributions from persons engaged in mechanical pursuits, or who, by chance, or study, have made new discoveries in the chemical, electrical, astronomical or geological departments of science.

A GOLD INKSTAND valued at \$3,500 is to be sent from Australia to the great exhibition of 1862.