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### WHAT CAN BE DONE FOR INVENTORS.—ADVICE GRATIS AND ADVICE FOR PAY.

For the information of our new subscribers, we would state that it is the custom, at the office of this paper, to examine models or drawings and descriptions of alleged new inventions, and to give written or verbal advice as to their patentability, without charge. Persons having made what they consider improvements in any branch of machinery, and contemplate securing the same by Letters Patent, are advised to send a sketch or model of it to this office. An examination will be made and an answer returned by early mail. Through our Branch Office, located directly opposite the Patent Office in Washington, we are enabled to make special examinations into the novelty and patentability of inventions. By having the records of the Patent Office to search, and the models and drawings deposited therein to examine, we are enabled to give an inventor most reliable advice as to the probabilities of his obtaining a patent, and also as to the extent of the claim that it is expedient to set up when the papers for an application are prepared. For this special examination at the Patent Office we make a charge of Five Dollars. It is necessary that a model or drawing and a description of the invention should accompany the remittance.

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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### THE PROPOSED NEW IRON GUNBOATS.

The bill which lately passed the Senate appropriating ten millions of dollars for the building of twenty new iron-clad gunboats has been amended and passed in the House of Representatives, raising the appropriation to fifteen million of dollars, and the number of vessels to thirty. The Secretary of the Navy has stated that ten of these gunboats can be built within the space of six months and Mr. Hale, chairman of the Naval Committee in the Senate, stated that Capt. Ericsson had proposed to build four of these boats at a cost of \$225,000 each, and the contract, if made with him, would be fulfilled, as he had already built one which had been constructed and launched within one day of the time specified by the agreement. It was also stated that these vessels were intended for reduc-

ing "harbors of the enemy," but the Navy Department "did not intend to conform to any particular plan for building the boats, but would be guided by experience gained during the progress of the work." The cost for each has been estimated to range from \$360,000 to \$580,000.

The construction of iron-clad gunboats of very light draft, combined with impenetrable hulls, for the purpose stated, is undoubtedly an experimental question with our nautical men. Perhaps no other course can therefore be pursued than to commence building them without adopting a positive plan, and then work up by experiment until a perfect model is obtained. The leading objection to such a course is the great and indefinite expense to which the government may be ultimately subjected. All experience in shipbuilding has been conclusive as to one result, namely, that when original plans have been changed and great alterations in construction made, the cost has prodigiously exceeded all previous estimates. It would be a very injudicious movement, we think, to give out contracts for thirty such vessels, all subject to great alterations.

By such a lavish appropriation as this Congress seems intent upon making amends for past apathy with regard to vital naval interests. Had the advice of the SCIENTIFIC AMERICAN been taken, as given on page 265, Vol. IV. (new series), we would now have had iron-clad vessels in the service capable of defying all the batteries on the Southern coast and New Orleans—the greatest exporting city on the continent next to New York—would have been as truly in possession of the Union forces as Port Royal. After describing the condition of the American Navy in April, 1861, the article alluded to concluded thus:—"No time is to be lost in commencing a ship in proof. Such a vessel would have steamed into Charleston harbor any day and kept up a permanent communication with Fort Sumter, regardless of the fire of the batteries, if they had rained shot and shell upon her, and that without carrying a single gun." Since that period the navy has been vastly increased, but not with a single iron-clad vessel capable of defying casemated forts and also possessing the qualities of a good sea boat.

The new iron-clad brigantine built at Mystic, Connecticut, was launched on the 14th inst, and the Ericsson iron-clad propeller is nearly completed at Green Point. The imperfect designs of the proposed new iron-clad gunboats represent them being duplicates of the Ericsson. Such vessels may prove very efficient as shell-proof floating batteries and answer a most excellent purpose, but we also want a number of iron-clad steamers for the navy possessing qualities not only serviceable for reducing forts, attacking and defending harbors, but which will render them efficient as good sea boats and cruisers when this war is concluded, otherwise they will soon become useless hulks. The attention, therefore, of our naval authorities should be especially directed to the construction of iron-clad vessels of as light draft as possible, of "sea-going qualities" and great steaming power, so as to combine high speed with great strength. Without possessing a high speed a steam frigate is almost useless at the present day, as the vessel which has the highest speed can choose her own distance.

There is also another important point to which special attention should be directed, namely, the qualifications of the persons to whom the contracts for building these vessels shall be given. We trust they will be awarded to responsible parties, who are engaged in the business and who have an established reputation for integrity and the production of good workmanship. Public confidence in the faithful application of such a large sum as fifteen millions of dollars will be completely shaken if the building of such vessels shall be entrusted, through favoritism, to persons of doubtful reputation, and who have little experience in naval engineering.

IMPROVEMENT IN CANDLES.—Steep the cotton wick in water in which has been dissolved a considerable quantity of nitrate of potassa—chlorate of potassa answers still better, but it is too expensive for common practice—by this means a purer flame and superior light are secured, a more perfect combustion is insured, and saffing is rendered nearly as superfluous as in wax candles. The wicks must be thoroughly dried before the tallow is put to them.

### AGASSIZ AS A LECTURER.

Professor Agassiz, though of French descent, is himself a Swiss. He was born May 28, 1807, in the parish of Mottier, in the Pays de Vaud. Having received a very thorough education, his life has been devoted to the study of science. After winning the highest reputation throughout Europe, and securing the friendship of the most learned men, including Cuvier and Humboldt, he came to this country in 1846. He had two objects in view in visiting the United States; one the study of the geology and natural history of the country under the patronage of the King of Prussia; and the other the delivery of a course of lectures in Boston at the invitation of John A. Lowell.

He expected to return to Europe in eighteen months or two years, but in 1847, he met with Professor Bache, the Superintendent of the Coast Survey, and this event changed the whole course of Agassiz's life. Professor Bache invited him to avail himself of the facilities presented by the operations of the coast survey for the further prosecution of his researches. The offer was so liberal and of such vast importance, in a scientific point of view, that at first Agassiz could hardly credit his good fortune; and upon being assured that he might, without difficulty, visit at will every point of the coast in the well-equipped coast survey vessels, from Maine to Texas, and along the whole western coast, he exclaimed that this would decide him to remain to the end of his days in the United States. In the spring of 1848 Agassiz entered upon his duties as Professor of Zoology and Geology in the Laurence Scientific School at Cambridge. Besides his university lectures, he has delivered courses of lectures in different parts of the country, while studying its natural history.

Professor Agassiz is a stout man, with an enormous head, the high and broad forehead corresponding well with the comprehensive and vigorous intellect. As a lecturer he exhibits the methodical arrangement, and the lucid and simple presentation of his subject always characteristic of great men. He speaks with a marked foreign accent, but with a distinctness of articulation which causes, not only every word, but every syllable to be heard in all parts of so large a building as the Academy of Music in Brooklyn.

There is one thing in the style of Professor Agassiz which is a little surprising; we allude to his use, to so large an extent, of Saxon words, in preference to those of Greek and Latin origin. This preference is manifested by all great writers who have learned the English language as their mother tongue, but it is unusual to meet with it in foreigners, especially with classical scholars; because it is so much more difficult for them to learn the words of purely English origin than it is to learn those coming from the Greek and Latin. For instance, when a classical scholar meets with the word *inclined*, he knows its meaning from its manifest derivation, but if he comes across the word *slanting*, he must look for its meaning in the dictionary.

It is therefore somewhat surprising to see a foreigner manifesting the preference for old English words which is shown by Agassiz. This is probably attributable to the circumstance that Agassiz's reading of English has been confined principally to the works of the great writers of the English language, who always discover that they can express their ideas with more strength, and especially more clearness, in the short and pithy words of the Saxon tongue, than they can in the sonorous polysyllables coming from the Greek and Latin.

The style of Agassiz would be improved for popular lecturing if he could draw still more largely from "the pure well of English undefiled." For instance, in the lecture of which a report was published in the SCIENTIFIC AMERICAN last week, if he had used the word, melted, in place of "a state of igneous fusion," he would have been understood by a larger portion of his audience.

FALL IN THE PRICE OF COTTON.—Within a few days since the news of the successes of the Union army in Tennessee has been received, cotton has fallen considerably in price. On Saturday the 15th, it ranged from 28 to 30 cents for middling and good-middling. On the 18th it ranged from 23 to 28 for the same qualities. No less than 1316 bales were received from Liverpool last week.