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INFORMATION AS TO THE PATENTABLE NOVELTY OF INVENTIONS.

The list of claims published from week to week in these columns, indicate truthfully the extent of business being transacted at the Patent Office.

It will be observed that inventors are far from being dormant, if they are not as numerous and active, as they were a year ago. Since the first of July we have received a great accession to our subscription list of new subscribers, and for the information of each, 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 contemplating 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 drawing and description or a model of the invention should accompany the remittance. Address—

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HEATING AND LIGHTING CITIES BY THE POWER OF THE TIDES.

Sir Humphrey Davy once remarked that people need have no anxiety in regard to the exhaustion of the coal mines, for long before that was effected some cheap mode would be discovered of decomposing water, and this would furnish an unlimited supply of fuel. This prophecy is already accomplished. If all the coal mines in the world should spontaneously take fire and burn up, it is now in the power of science and art to extract boundless quantities of heat and light from the rivers and seas. By magneto-electric machines water may be decomposed without any expenditure except that of mechanical power, and some recent improvements in these machines, by which their power of decomposition has been greatly increased, have suggested this article.

In a recent number we pointed out the superiority of hydrogen over all other substances for heating purposes, and on page 280, Volume 3, is an illustration of the apparatus by which this gas is produced for the purpose of lighting the city of Narbonne. As hydro-

gen can be obtained in unlimited quantities merely by mechanical power, we have only to make suitable arrangements to avail ourselves of the great forces of nature in order to get all the fuel and light we want, without any current expense whatever, except the trifling one of keeping the apparatus in order.

The tide, as it sweeps through Hell Gate four times in the 24 hours, probably exerts sufficient power to turn enough magneto-electric machines to decompose water and furnish hydrogen for all the mechanical and domestic purposes for which fuel and light are required in this city!

Here is an opening for a discovery which will be eminent among the marvels even of this wonderful age. In place of the enormous expenditure at present incurred for fuel and gas, our steam engines may be driven, and our dwellings may be warmed and lighted by the perpetual and undiminishing power of gravitation.

NEW SIDE-WHEEL WAR STEAMERS.

In addition to the twenty-three screw gun-boats which are now being constructed, Congress passed an act, on the 3d inst., authorizing the building of twelve new side-wheel steamers of light draft, intended for cruising in the sounds and along the southern coast, which is quite shallow for a long distance out from shore. The Navy Department, in conformity with the act authorizing the building of such vessels, has invited proposals, which will be received up to the 5th of next month, so that those who intend to compete for them must be "up and doing," so as to prepare their specifications and submit them for decision, in due season.

The load draft of water must not exceed six feet nine inches. Each vessel is to be armed with two rifled guns of 7,000 lbs. each—one at the bow and the other at the stern; also two 12-pounder howitzers. The vessel must have the capacity of carrying provisions for sixty days; 2,000 gallons of fresh water, and a condenser for distilling water for cooking. It must be schooner rigged, with a rudder at each end, protected by a post.

The Navy Department desires that these vessels shall have the highest attainable speed, and those who propose to construct them must state the speed which they are able to give, with the quantity of coal for that speed, and a sufficient amount must be contained in the bunkers for eight day's steaming. In the construction of these vessels the diversified and original genius of our steamboat builders is allowed considerable range. Certain qualities are demanded for each vessel, the principal of which are light draft of water and great speed. The reputation of successful steamship builders will have due weight with the Navy Department, as bidders, and the name of the engineering establishment at which the machinery is to be made, must be stated by those who apply for the contracts. A guarantee will be inserted in each agreement for the fulfillment of the condition of speed, the quantity of fuel, and satisfactory working of the machinery, &c. These steamers will be required to ascend creeks where schooners of the very lightest draft find access, hence the necessity for having them built with side wheels. The machinery of propellers is less exposed to shot than that of side-wheel steamers, but it is impossible to obtain a light draft and a high speed with a screw. It is well understood by ship builders that a side-wheel steamer of the same capacity as a propeller will draw about three feet less water, hence the advantage of side-wheels for shallow coast cruising.

CARRYING PARCELS IN TUBES.

It is more than thirty years since it was first proposed to convey letters and parcels in vacuo through long tubes operated by a steam engine, but so far as we know, the first practical apparatus of this character exhibited was that of I. L. Richardson, of Boston, which was illustrated and described on page 265, Vol. 8 (old series), SCIENTIFIC AMERICAN. It never was employed on a large scale for public purposes, but it was operated very successfully with a limited model, through half a mile of tubing, if we recollect correctly. Such a mode of expressing parcels is perfectly practicable; the only question in reference to its adoption, is that of the expense incurred in its operation.

In large cities we believe such a system could be maintained with profit, because the tube lines required would be quite short, while the business to be transacted would be large. The Londoners appear to have practical views of this question, as a Pneumatic Dispatch Company has been formed in their city, and our cotemporaries, *The Engineer* and *Mechanics' Magazine*, contain accounts of experiments on a rather large scale, which have lately been made for testing this peculiar mode of transmitting parcels, and an interesting narrative of these experiments will be found upon another page. This system deserves very general attention, as the London experiments afford reasonable grounds for concluding that it will yet become a permanent institution, like railways and the electric telegraph.

If we had such a system in New York, packages could be deposited at various stations throughout the city, communicating by tubes with the principal railroad and steamboat depots, and thus our streets would be delivered from interminable rows of carts and the turmoil and confusion which they cause. Perhaps there is no city in the world that would reap greater benefits from such a system successfully carried out. It would in a great measure, if not entirely, preclude the necessity of constructing either an elevated or a subterranean railway for the relief of Broadway and some other thronged streets.

THAT FORGED LETTER AGAIN.

In our last number we published a letter purporting to have been written by us to some one in New Orleans, respecting a grand patent scheme in the Southern Confederacy. This letter and some comments peculiar to that section first made its appearance in a Southern journal, and has since been copied into some Northern newspapers. We have denounced this letter as an infamous forgery so far as we have been able to follow its track of publication; but as lies always travel faster than the truth, we shall not expect to keep up with it.

If any of our readers should notice the letter referred to in any newspaper that comes under their notice, they will confer a special favor by sending a marked copy to us, in order that we may apply the corrective.

The miserable vagabond who perpetrated this infamous libel upon our loyalty and integrity is no doubt beyond our reach, but if we had him where justice could be meted out to him as he deserves, he would soon find himself in a tight place. Newspapers publishing the letter are guilty of libelling us grossly.

GENERAL McDOWELL'S REPORT.

We presume most of our readers have read the official report of General McDowell of the battle of Bull Run. It is a calm, clear and candid report, and does credit to this brave officer.

Gen. McDowell believed that up to a certain point in the contest that a victory had been won by the Union troops; and furthermore, that if the battle had been fought a day earlier, and in accordance with the plans laid down when the advance of the army began, that his success would have been complete.

The reinforcements that came in from Gen. Johnson's column from Winchester turned the scale of victory in favor of the secessionists—this could not have been accomplished at an earlier date. The statement of Gen. McDowell is fully corroborated by Southern authority. G. B. Lamar, now a secessionist, but formerly President of the Bank of the Republic, in this city, in a letter just published, says:—"The enemy thought, up to 4 o'clock, they had the victory—and so they had; but the opportune arrival of two fresh regiments turned the battle and gave us a glorious victory."

This is good evidence that the Federal troops, though fighting against serious odds, and under the fire of masked batteries, carried the battle up to the point of the arrival of fresh troops from Winchester.

Gen. McDowell's report, and his conduct upon the field, shows that he was a brave and faithful officer, deserving the confidence of the people.

ANIMAL charcoal broken in small pieces about the size of beans, is allowed to be the best filtering medium for water in the world. Ordinary rain water filtered through this medium becomes as pure as distilled water.