

Our Editorial Correspondence.

WASHINGTON, April 10, 1861.

I alluded in my last letter to the examination of persons who are appointed to places in the Patent Office. This is required by a law of Congress passed in 1853, which provides for a proper classification and examination of the clerical force employed in the several departments. There are four grades of salaries established by this act, viz.: \$1,200, \$1,400, \$1,600 and \$1,800.

This examination is conducted with reference to the duties which are to be required of the appointee. Inwardly chuckling over his successful experiment in office-seeking, the candidate is summoned to appear before the examining tribunal; he begins to realize that Jordan may possibly be "a hard road to travel," and sets about to summon from every corner of his cranium, all those special qualifications which his friends recommended him to possess, for now his mettle is to be tested. The Examining Board, "Whose visages do cream and mantle like a standing pool, With purpose to be dressed in an opinion of wisdom, gravity, profound conceit," proceed to a sort of intellectual tilt with the subject. He must fight his way to the spoils in reserve for him, for it is evident that he is to be handled without mitens.

He is questioned as to his knowledge of the mother tongue—whether he can spell, read, write and compose correctly. The examination in Lindley Murray being completed, he may be expected to tell what he thinks about the reinforcement of Fort Sumter, and to answer all such questions in military science as may be put to him touching the feasibility of that scheme, and as to whether he would shoot from the right or from the left shoulder. He may then be examined in the higher branches of mathematics; one sample question will suffice. "Suppose corn is worth 65 cents per bushel, and you feed a hog three times a day for three months, and sell your pork for \$7 per cwt., how much do you gain by the operation?" Then geography, topography and hydrography, including Maury's wind and current charts, philosophy and law. If the candidate shows proficiency in these learned sciences, he is supposed to be qualified without special reference to the soundness of his theological views. Fearing a little want of sharpness in the candidate, he is asked how he would proceed to survey the Patent Office? Discovering what he regards as a sort of *gum game* in this proceeding, he replies, "I would hire a surveyor to do it!" Lest it might appear as though I am disposed to make light of so grave a subject, I will state that one of the candidates informed me that the two questions I have quoted were actually put to him on his trial. It is reported that one candidate ran aground on the question: if he knew how to manage a certain kind of printing press? It is evidently in the power of this Board to put an extinguisher on the ambition of many youths who seek office.

The new law authorizes the Commissioner to cause to be printed ten copies of the specifications and drawings of each patent. A contract for this work has already been made with Gideon & Co., of this city. The specifications are to be printed in royal octavo pamphlet form, something after the style of the English patents. The drawings are to be traced on linen and attached to the printed specification. The law provides for ten copies; but it was supposed that an arrangement could be made so that the contractor would be able to furnish all such duplicate copies as might be ordered either by Congress or by patentees, upon the payment of a fair compensation for them. As the contract is now given out, this expectation is completely frustrated, and there is some disappointment about it. Five copies of the ten, at least, will be needed for the use of the Patent Office, leaving but five for such disposition as the Commissioner may see fit to make of them. It is to be hoped that it is not too late to correct this difficulty, and I believe the Commissioner will give more attention to it.

As I stated in my last letter, Mr. Harding, who was appointed one of the Examiners-in-Chief, has not accepted the office. I am reliably informed, however, that he has not formally resigned, and may decide to act temporarily, with a view to get the Appeal Board into efficient working order. It deserves honorable

mention that the President selected Mr. Harding solely on the ground of fitness. In spite of this, there is nothing connected with the position that can encourage a well-known patent lawyer to abandon a good practice in order to accept an office with small pay, moderate honors, and severe labors. Mr. Harding, from the fact of being retained as counsel in several important patent law cases, could not act independently in the Patent Office without abandoning his clients unreservedly. He will probably hesitate before he takes a step like this.

Commissioner Holloway, in the meantime, has requested D. C. Lawrence, Esq., who has long been connected with the Appeal Board, to assist Messrs. Hodges and Theaker in their duties. This is certainly a creditable move. It shows that the Commissioner means to take good care of the interests of the Office; at the same time, he recognizes the services of an able and upright officer.

The Patent Office is now supplied with printed copies of all the English patents, except a single one (No. 12,054), which have been granted by that government from 1617 down to May, 1860; and if bound up according to the English system, there will be 408 volumes of specifications and 408 volumes of drawings. Professor Jillson, the accomplished Librarian of the Patent Office, informs me that he intends to reduce the number of drawings.

During my stay here I have made a hurried visit to the navy yard, and was not long in discovering the fact that I was in a busy place. The Ordnance Department, especially, presented a scene of unwonted activity indicative of stirring times ahead. This branch of the service is under the superintendance of Capt. John A. Dahlgren, a brave and gallant man, the inventor of the famous gun which bears his name. He seems to be fully alive to all that relates to solid progress in naval science, properly holding all theories in subordination to rigid, practical tests. Without disparaging the services of a single valuable officer in the navy, I think it but just to say that Captain Dahlgren deserves great credit for his untiring efforts to put our navy in the most efficient condition possible to support the civil power. Mr. Russell, the able correspondent of the *London Times*, whose graphic letters to that journal from the Crimea gave him so much celebrity, recently visited the navy yard, inspecting all its departments with deep interest. Captain Dahlgren gave to Mr. Russell an exhibition of the howitzer drill of this country. The howitzer is a short, light cannon, mounted on wheels, and is generally used for field service, but has been adapted to our navy by the efforts of Captain Dahlgren. It is a most destructive weapon in skillful hands. The shrapnell shells can be fired from the howitzer at the rate of four discharges a minute, projecting by their explosion hundreds of musket balls a distance of nearly 200 yards beyond the longest reach of the shell. Mr. Russell expressed much surprise at the rapidity of the firing.

As at this time all matters of science connected with the army and navy are interesting, more attention will be given to the subject.

CAVEAT FEES AND APPLICATIONS FOR PATENTS.—The twenty dollars paid into the Treasury on caveats filed in the Patent Office prior to the passage of the new law, will be allowed toward the completion of the application for a patent, but not as the first fee required on the application. Every application for a patent, except for *design* patents, must be accompanied with fifteen dollars in payment of first fee, and on a patent being ordered to issue, twenty dollars more is required to be paid, except in cases where caveats were filed in the same invention previous to the new law, which went into effect March 4th, 1861. In such cases no second fee is required.

A curious anecdote is told of Francis II., late King of Naples. A person having despatches for the Minister of Justice, wandered about Gaeta to find his office. Entering a dismantled building, he saw a man sitting on a pile of papers, who answered his inquiries by saying he was the minister. He then asked where he could find the minister of war. "Here," was the reply, "I am the minister;" adding, "Finding myself betrayed by every one I trusted, I am my own minister of war in the morning, chancellor in the afternoon, and prefect of police at night." It was, indeed, Francis II. himself.

THE POLYTECHNIC ASSOCIATION OF THE AMERICAN INSTITUTE.

[Reported for the Scientific American.]

The usual weekly meeting of the Polytechnic Association of the American Institute was held, at their room, in the Cooper Building, this city, on Thursday evening, April 11, 1861—Mr. Bull in the chair.

BEER COOLER.

Mr. G. B. TURRELL exhibited a model of Baudelot's beer cooler. The wort is caused to descend from one to another of a series of horizontal water pipes connected at the ends, through which a supply of cold water continually ascends, being gradually heated as it rises, so that the boiling wort first encounters a water pipe nearly of its own temperature, and, as it is cooled and descends, passes over cooler pipes. The beer is thus cooled gradually, both by contact and evaporation. The water thus heated may be used for the next brewing.

INCRUSTATION IN STEAM BOILERS.

Mr. H. N. WINANS exhibited specimens of boiler scale, and stated that he had invented a remedy therefor—a powder to be put into the water used. It is a secret preparation, acting first upon the oxyd of iron so as to remove the scale, and afterwards upon the matters held in solution by the water. Whether it would answer for marine boilers he was unprepared to say.

Professor SEELY, after asking questions with regard to the properties of this powder, said that he was not acquainted with any chemical substance possessing the properties claimed for this.

Mr. STETSON remarked that, in consequence of the necessity of frequent blowing-off at sea to get rid of the salt, such a powder could not well be used for marine boilers, the quantity required would be so great.

HYDRAULIC PNEUMATIC INKSTAND.

Mr. ROWELL exhibited this inkstand, there being a reservoir for the ink communicating by two passages with the bowl where the ink is to be used. Whenever the ink, by use or evaporation, falls below the upper passage, a bubble of air enters and an equal quantity of ink enters the bowl through the lower passage, keeping the bowl always supplied at a uniform height.

COMPRESSED AIR FOR RAILROADS.

Mr. FISHER, from the Committee on Carson's Plan of Propelling Cars by Compressed Air, made the following report thereon:

The Committee to whom was referred Mr. Carson's plan of a street rail car to be propelled by compressed air have examined the plan so far as it is developed, and have examined reports of experiments that have preceded Mr. Carson's plans, and respectfully report as follows:—

In 1799 a patent was granted in England to Mr. Medhurst for propelling machinery by compressed air. In 1819, Mr. Murdoch, of Soho, and Mr. David Gordon, made calculations and experiments with a view to propel carriages by compressed air; but were discouraged by the difficulties of compression, which was not then well understood. In 1828, Mr. Lemuel Wright, an American resident in England, patented a plan, and built an air carriage; and a Mr. Morin, in 1829, patented a plan for an air carriage. Mr. Alexander Gordon, in his Treatise on Elemental Locomotion, in 1834, gives his opinion that there was then no plan of air propulsion that could safely be engaged in as a speculation. Since that time there have been trials in France on railways and common roads; but although they have been favorably noticed in newspapers, no permanent results have followed them.

The most successful trials of which there are authentic accounts are those of Arthur Parsey and the Baron Von Rathen, in England, about 12 years ago. Parsey worked on a railway, and attained a speed of 20 miles per hour with a small and imperfect engine, under a pressure of 160 lbs., 200 lbs. being the limit prescribed to him, which is too low for practice. Von Rathen worked with 800 lbs. in his receiver on a common road; and arrived at the conclusion that he could run five miles on a turnpike, or 40 miles on a railway, with one charge. Parsey thought that 20 miles was the useful limit for a charge.

So far as appears, both these estimates are mere opinions, and not based on the high rate of speed demanded on railways, which increases the resistance to nearly double that of the speed attained by Parsey.

A first-class express train consumes five tons of water in a stage of 40 miles. Air being denser than steam in the proportion of 17 to 8, and, so far as your Committee are informed, a cubic foot of steam being equal to a cubic foot of air, it would require 10½ tons of air for 40 miles. The vessel to hold this air, even if welded, must be eight times heavier than the air; hence, 95 tons will be the weight of the charged reservoir for 40 miles; and a cylinder 6 feet feet diameter and 100 feet long would be required for it at the pressure of 1,000 lbs. per inch. This excessive bulk is impracticable; a quarter or third of it is as much as could be allowed in practice; and at least two stops would be required in 40 miles.

To stop and start such a train involves a loss of \$1.20, and \$2.40 for two stops, or six cents per mile, which is three-quarters of the cost of coke on such trains. Besides, the time of passengers is of much greater value than the whole motive power; if the two stops should waste eight minutes, it would waste eight dollars in the time of pas-