

session of Egypt and the reconquered districts, but that it intends to recover the whole of the eastern Sudan, and that the reconquest is preparatory to an important scheme of industrial development. The fact that Mr. Penfield condemns the occupation on moral grounds does not deter him from giving full credit for the great improvement which has taken place in the condition of the Egyptian people, and the present article, like all his contributions, official or otherwise, on this interesting topic, is both valuable and timely.

It was pointed out many years ago by the African traveler, Sir Samuel Baker, that if the great volume of water in the Nile were controlled, it would be possible to transform the Nubian desert into a vast cotton field, whose harvests would go far to render England independent of the cotton supply from the United States. Already, indeed, the lower Nile valley is a productive cotton field, and under the British occupation the area under cultivation has doubled. The new irrigation works which are continually being constructed enable larger areas to be planted, and the yield is steadily increasing.

The Egyptian cotton has a special value on the market, owing to the exceptional length of its fiber, and last year's crop of 1,100,000 bales was sold for two cents per pound more than was realized for American upland cotton. The Egyptian cotton is extensively used both in Europe and in this country, our importation amounting annually to about 100,000 bales. To this advantage in quality must be added the fact that the Egyptian climate is particularly suitable to the raising of cotton, the average crop being about 560 pounds per acre. Labor, moreover, is cheap, wages averaging only about eighteen cents per day for each hand. With this high yield, high market price and small cost of labor, it is not surprising to learn that about \$55,000,000 are realized from the cotton crop alone. It is probable that a large increase in this amount will result from the increased acreage which is being brought under cultivation on the Nile delta. Mr. Penfield is of the opinion that five years from now the total output from this district will be one and a half million bales—an increase of some forty per cent on the present yield. The revenue obtained from cotton alone suffices to pay the interest on a heavy debt and to carry on the government. It is stated that were it not for the present military expedition up the Nile, there would be an actual surplus in the Egyptian treasury.

The writer of this interesting article points out that the conquest of the Sudan will probably result in the cultivable districts being devoted to wheat raising, and the great tracts of country will once again, after the lapse of centuries, be devoted to husbandry. If this should happen, the great Nile basin will once more become, as it was in the days of the Pharaohs, one of the great granaries of the world. Furthermore, it is stated that, within the last two years, and more particularly since the disastrous war in Cuba, the cultivation of the sugar cane has been taken up in several parts of the Nile valley. The sugar is stated to be of excellent quality, and there was a sufficient amount of it raised last year to increase the wealth of Egypt by about \$8,000,000. The writer states that the area devoted to the sugar cane is likely to be doubled within a short time. It is possible that the Egyptian sugar crop will cut a not inconsiderable figure before long in the statistics of the world's supply.

COMMISSIONER DUELL SWORN IN.

Mr. Charles H. Duell was sworn in as Commissioner of Patents on February 5. The oath was administered by Assistant Chief Clerk W. H. DeLacy, of the Interior Department. After the ceremony Mr. Duell went into conference with Assistant Commissioner Greeley, and the greater part of the day was spent in discussing Patent Office affairs. The new Commissioner promises to be popular, as he is very approachable and has the faculty of making the visitor feel at ease. He said to the representatives of newspapers that he was acquainting himself with the situation and he did not care to discuss the question of the office until he was thoroughly acquainted with the condition of affairs. He referred the newspaper men to Assistant Commissioner Greeley, who said:

"We are deeply interested in the pending appropriation for the support of the Patent Office during the coming fiscal year. The appropriation bill, as reported, provides for a slight increase in the working force of the office, but it is so slight as not to materially affect the conditions, which even now are becoming of monstrous proportions. The new bill, I believe, gives us a new principal examiner, nine assistant examiners and three messengers. We originally estimated for four principal examiners, thirty-six assistant examiners, thirty-five clerks and ten messengers. The Secretary cut this estimate to two principal examiners, eighteen assistants, eleven clerks and fourteen messengers. This matter of additional help is a most serious problem, more important to-day than ever before, and becoming more so every twenty-four hours.

"Even with the small increase allowed by Congress, we would be better off, if only the appropriation were

made immediately available. But, instead of that, the additional help cannot be utilized until next July, and by that time this office will be seriously behind in its work. To-day our examiners are from three to four months behind in their work, and some divisions are as much as six months behind.

"We have on hand, in round numbers, awaiting action, 13,000 cases, of which number 9,600 have never been looked at. In the next four months our business will largely increase. March, April, May and June have heretofore been the heaviest months of the year, and there is no reason to doubt the record will be kept up. So you see, when July comes around, we will be hopelessly behind. I estimate we will receive in that time 14,000 new cases. So it is easy to understand how important it is to have an adequate force to do the work. It is not generally understood what a large proportion of the government revenue comes from this office. Last year we covered into the Treasury, after paying the running expenses of the office, \$317,135.05, and the books of the Treasurer of the United States show a total of \$5,093,614.23 paid to the general government by the Patent Office after paying all its expenses. The inventors are protesting against the delay. They claim, and very properly, too, they are entitled to prompt and efficient service. The government requires them to pay for the work in advance, and then they are required to wait for months before having their applications attended to. One thing is certain, the efficiency of the Patent Office demands, in the interest of its clients, a suitable force of employees to prosecute the work intrusted to it."

CHANGES IN FOREIGN PATENT LAWS AND PRACTICE.

Political events in 1897 have apparently influenced the patent legislation and the patent practice of several countries, and it is interesting to note that while in some cases the securing of protection for inventions has been facilitated, in others a spirit hostile to foreign inventors is manifested.

Peace having been concluded between Turkey and Greece, both of these countries are naturally intent upon fostering commercial and industrial development. Although no patent law exists in Greece, special grants have been made to protect inventions, and the legislature has lately been found to be more liberally disposed, so that the expense of securing such grants has been reduced to a reasonable figure. Greece, owing to its commercial relations, is one of the most important nations on the eastern Mediterranean, as the Greeks have extensive relations with Turkey in Europe and in Asia and Egypt. Inventions relating to navigation and to mining or quarrying would seem to be particularly adapted for introduction in Greece. Turkey's industrial development is seriously hampered by various ordinances, one of which prohibits the use of electricity in the empire, yet there is a party in favor of modern improvements, and even the government is now making strenuous efforts to stimulate trade. It is to be noted, however, that no patent will be granted in Turkey for improvements in arms or ammunition, or for any machine in which electricity is to be used as the main motive agent.

The courts of Egypt have granted efficient protection to foreign patentees when legalized copies of the foreign patent have been deposited in Egypt, according to certain formalities. If the patent is for a machine, two photographs of the patented article should also be supplied. Since the British occupation, Egypt has developed very rapidly, and its natural resources will undoubtedly enable it to regain, in a large measure, its former importance as an agricultural country. Egyptian cotton is known as one of the best upon the market. The modernizing of Egypt is progressing very rapidly, steam and electric railways being continually extended, and American manufacturers ought to avail themselves of the opportunities thus offered.

The South African Republic (Transvaal) on October 15, 1897, put into operation a new patent law which is extremely illiberal to foreigners. Every applicant for a patent who resides abroad is required to furnish, with the application, a bond or other approved security to the amount of \$500. This is for the purpose of meeting the cost of contesting any opposition that may be made to the grant of the patent. Inasmuch as the government may award costs to the opponent in case he is successful, the expense of contesting an opposition may be very considerable. Of course, in case the patent issues without opposition, or if the opponent has to pay the costs, the security will be refunded. Efforts are being made to secure a reduction of these prohibitive rates.

Japan having in 1897 enabled foreign inventors to secure protection by patents, American manufacturers and inventors have largely availed themselves of the opportunity of strengthening their position in this promising field. The practice of the Japanese patent office in regard to applications made by foreigners has been settled, and the requirements as to novelty are substantially identical with those made in accordance with British patent practice, that is, the application must be filed before the invention becomes publicly known or used in Japan. More particularly, the

application should be filed before a copy of the United States patent reaches the Japanese patent office.

China grants no patents, but nevertheless protects foreign inventors who have obtained patents in their own country. To secure this protection, certain formalities have to be complied with, and the patentee must establish his right by filing duly certified copies of his patent and any other documents proving his title. There is no doubt that China will soon enter upon a period of modernization similar to that which has brought Japan into such prominence, and already we hear of considerable activity in railway construction and in the starting of new factories, such as spinning mills. The competition of British, German and Japanese manufacturers upon the Chinese market is very keen, and American exporters will do well to secure protection for inventions which otherwise might be controlled by their foreign competitors.

TWO INTERESTING DISCOVERIES IN ITALY.

Two discoveries have just been made in Italy, one in Rome and one in Florence, which are of the utmost importance. Signor Marucci, the archæologist, has discovered an imposing wall painting in the Palace of Tiberius on the Palatine Hill. It is considered that this picture will prove an important addition to Christian history. The painting evidently represents the preparation for the crucifixion. Around the cross are soldiers bearing ladders and under each soldier is written his name. Among them will be found Pontius Pilate. The figures are 5½ inches high. The inscription consists of fifteen lines, of which five have been deciphered. It contains the name "Christus." The Pope was immediately informed of the discovery, and Signor Marucci will shortly publish a monograph on his discovery. When all of the mediæval and modern buildings have been cleared off from the Palatine, it is probable that other important discoveries will be made.

A fresco by Ghirlandajo in the Orgnissanti Church, at Florence, has been discovered in the ancient Vespucci Chapel, which contains a portrait of Amerigo Vespucci. Students of art history have for a long time believed that the fresco was lost when the chapel was white-washed in 1616, though it was perfectly well known that it had existed at one time. It is mentioned by Vasari, who says, "Domenico (Ghirlandajo) has portrayed the likeness of Amerigo Vespucci, who sailed to the Indies." A contemporaneous portrait of this important personage in the history of the discovery of the new world promises to be another one of the artistic sensations of Florence like that of Botticelli's "Pallas" two years ago.

THE SAFE DEPOSIT BUSINESS IN ANCIENT ROME.

We are inclined to consider that safe deposit vaults are entirely an invention of the nineteenth century, but this is not the case. In 1885, during the building of the quarter of Testaccio, in Rome, which was the region of the public granaries, an official advertisement was found for leasing a "horrea," or public granary, under the empire of Hadrian. The advertisement is given in Prof. Lanciani's interesting work, "Pagan and Christian Rome," as follows:

"To be let from to-day, and hereafter annually (beginning on December 13): These warehouses, belonging to the Emperor Hadrian, together with their granaries, wine cellars, strong boxes and repositories.

"The care and protection of the official watchmen is included in the lease.

"Regulations: I. Any one who rents rooms, vaults or strong boxes in this establishment is expected to pay the rent and vacate the place before December 13.

"II. Whoever disobeys regulation No. I, and omits to arrange with the horrearius (or keeper-in-chief) for the renewal of his lease, shall be considered as liable for another year, the rent to be determined by the average price paid by others for the same room, vault or strong box. This regulation to be enforced in case the horrearius has not had an opportunity to rent the said room, vault or strong box to other people.

"III. Subletting is not allowed. The administration will withdraw the watch and the guarantee from rooms, vaults or strong boxes which have been sublet in violation of the existing rules.

"IV. Merchandise or valuables stored in these warehouses are held by the administration as security for payment of rental.

"V. The tenant will not be reimbursed by the administration for improvements, additions and other such work which he has undertaken on his own account.

"VI. The tenant must give an assignment of his goods to the keeper-in-chief, who shall not be held responsible for the safe keeping of merchandise or valuables which have not been duly declared. The tenant must claim a receipt for the said assignment and for the payment of his rental."

Many of the temples were also used for the keeping of money, jewels, plate, etc. Of course, the temples were constantly watched, and on this account were safe from thieves. Official weights and measures were also kept in the temples.