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AN IMPORTANT PATENT DECISION BY THE SUPREME COURT.

Section 4887 of the Revised Statutes of the United States, relating to patents, contains the following provision: "Every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term, and in no case shall it be in force more than seventeen years."

In some countries, as, for example, Great Britain, the life of a patent is 14 years; if therefore an invention is first patented there, and afterward patented here, the American patent will only run for 14 years. The term of the American patent is thus reduced by three years, simply because the foreign patent was taken out prior to the American patent.

Various efforts have been made by interested parties to procure decisions holding the meaning of the statute to be that when patents are granted in foreign countries prior to the filing of the application for the American patent, such American patents should expire with the shortest foreign patent.

The lower courts have invariably refused to give this interpretation to the statute; they held to the provision of the text, namely, that the American patent expired with the term of the shortest foreign patent.

The question has now been, for the first time, authoritatively settled by the Supreme Court of the United States, the case being that of the Bate Refrigerating Company, appellant, vs. Sulzberger. Bate applied for his American patent December 1, 1876, and it was granted in November, 1877. But prior to the issue of this patent he took a Canadian patent (July 9, 1877) for the term of five years; also an English patent (January 29, 1877).

The decision of the Supreme Court was delivered by Judge Harlan, on March 4, 1895.

"We cannot," says the Court, "superadd in Section 4,887 of the Revised Statutes the words 'prior to the application' either after the words 'first patented or caused to be patented in a foreign country,' or after the words 'previously patented in a foreign country,' without deviating from the intention of Congress as manifested by the language it selected to indicate its purpose. And the express command of the existing statute is that every American patent for an invention 'previously patented in a foreign country,' that is, 'first patented or caused to be patented in a foreign country,' shall expire at the same time as the foreign patent. No words are used that will justify the Court in holding that an invention patented in a foreign country before being patented here is to be exempt from the operation of the provision limiting the term of the American patent to expire with the foreign patent.

"Was the Bate invention patented abroad before it was patented in this country? If so, the American patent expired with the foreign patent, and therefore the American public became entitled to use the invention from the time the foreign public were permitted to use it. Congress in effect by the existing law says to the inventor in order to enjoy the exclusive use in this country of his invention for the term prescribed by law, 'if your invention has not been introduced into public use for more than two years you may, upon complying with the conditions prescribed, obtain an American patent, and you may, if you can, obtain a foreign patent. But the American patent will be granted on the condition that if you obtain a foreign patent first your invention shall be free to the American people whenever by reason of the expiration of the foreign patent it becomes free to people abroad; but in no case shall the term of the American patent exceed seventeen years.' This we deem to be a sound interpretation of the statute giving to the words used the meaning required by their ordinary signification. In our judgment the language used is so plain and unambiguous that a refusal to recognize its natural meaning would be justly regarded as indicating a purpose to change the law by judicial action based upon the supposed policy of Congress. But as this court well said in Haddon vs. Collector, 5 Wall. 107: 'What is termed the policy of the government with reference to any particular legislation is generally a very uncertain thing, upon which all sorts of opinions are founded by different persons. It is a ground much too unstable upon which to rest the judgment of the court in the interpretation of statutes.' 'Where the language of the Act is explicit' this court has said 'there is great danger in departing from the words used to give an effect to the law which may be supposed to be designed by the legislature. . . . It is not for the court to say where the language of the statute is clear that it shall be so construed as to embrace cases because no good reason can be assigned why these were excepted from its provisions.' Denn. vs. Reid, 10 Pet. 624-627.

"Our answers therefore to the questions certified are that the invention for which United States patent to Bate was issued under the facts stated, was 'previously patented in a foreign country,' within the meaning of those words in Section 4,887 of the Revised Statutes, and that the United States patent to him expired under the terms of that section before the expiration of seventeen years from its date.

"Let it be so certified to the Circuit Court of Appeals."

The Bate appeal case was notable for the great array of legal talent on each side. The General Electric Company, as owners of the Edison electric light patent, and the American Bell Telephone Company, owners of telephone patents, had great interests at stake, and were strongly represented.

Edison's patent for electrical lamps number 223,898, dated January 27, 1880 (application filed November 4, 1879), gave to its owners a virtual monopoly of the great industry of electric lamp manufacture. No one could make an electric lamp without paying tribute. This patent if allowed to run for the full term for which it was granted, namely, seventeen years from its date, would not have expired until January 27, 1897. But prior to the grant of his American patent, to wit, in November, 1879, Mr. Edison obtained foreign patents of less term than the American patent. His English patent expired in November, 1894, carrying down with it the American patent.

The electric light industry was thus made free to the public; yet few will deny that a great injustice has resulted to the inventor. To Thomas Alva Edison we are indebted for the modern electric lamp and the incandescent system of electric lighting. Every electric lamp that gleams in every corner of the world is due to the light of his genius, and he deserves well of all the nations of the earth. Although by the terms of the American statute Edison's patent is cut short, it is still within the power of Congress, makers of the law, to revive and extend the patent for an additional term of years. This has been done often, in respect to other patents, but the practice has become obsolete, and probably it were better that it should not be revived. The national legislature might, however, with propriety, bestow upon Edison some token of a substantial character, in recognition of the incalculable benefits he has conferred upon his native land.

Besides the Edison lamp patent, the hopes of several other holders of important patents are crushed by this decision of the Supreme Court. Among them are the Edison patents of 1892, covering the use of carbon in telephone transmitters; also the Berliner patent, all owned by the American Bell Telephone Company. These patents contain broad and sweeping claims.

The American patents for these inventions were not issued until 1892, although they were applied for some 14 or 15 years previously. Their issue was purposely kept back until the original Bell patent had nearly expired; they were then brought forward with the expectation of perpetuating the Bell telephone monopoly until November 17, 1908. But, as the same inventions were patented in Great Britain and other countries long prior to the issue of the American patents, the latter were null when they were granted, and their issue by our Patent Office was, in the light of the above decision, an error.

The Bell telephone monopoly is now brought to an end, so far as basic patents are concerned; and we may soon look for great improvements if not for a complete revolution in the art of electric communication throughout the country. At present it is much more expensive to communicate by telephone with distant places than it is to send telegraphic messages, but the latter consume much more time. For example, our experience is that it generally requires three hours or more to send a telegraphic message from New York to Washington and get a prompt answer back, cost fifty cents; whereas, to convey the same message by telephone and get the answer rarely takes more than ten minutes, but costs \$2.00. The reason of this greater cost is that the Bell Telephone Company is bound by agreement with the Western Union Telegraph Company not to engage in telegraphic business. But this agreement, it is understood, expires this year, and thereafter the Bell Company will be able to throw more fully open to the public its remarkable facilities for telegraphic communication.

Brush's First Arc Light Machine.

At the recent Cleveland Convention the Brush Electric Company had one of the most interesting exhibits. A notable feature of the exhibit was the first arc light dynamo built by Mr. Brush. This is a one light machine, and was built in 1876, at Mr. Brush's residence, and hauled, in the rear of his buggy, to the works of the Telegraph Supply Company, in Champlain Street, where it was set up and run. Later on it was sold to the Viaduct Manufacturing Company, at Baltimore, who operated it regularly for twelve years. During the World's Fair year the dynamo was purchased by the Brush Company and exhibited as a historical relic in Electricity building, where it was shown in operation.

Sir Henry Rawlinson.

Major-General Sir Henry Creswicke Rawlinson died in London March 5. He was born at Chadlington, Oxfordshire, in 1810, and was educated at Ealing School. In 1828 he entered the military service of the East India Company. For six years he served in Bombay and distinguished himself as a sportsman. In 1833 he accomplished the remarkable feat of riding 72 miles in 3 hours 17 minutes. In November of the same year he was sent to Persia, where he held several important positions under the Shah and reorganized the Persian army. As a soldier and diplomat he occupied many important positions with credit to himself and his country; but he owes his fame chiefly to his archaeological researches, which were of pre-eminent importance. Rawlinson and Layard stood at the head of the English school of archæologists. The light which Rawlinson threw upon the cuneiform inscriptions, the barrier hitherto impassable for all European and Asiatic experts, has justified the title with which he has been honored, of the "Father of Assyriology." His researches on the cuneiform inscriptions began in 1835, and in 1837 he succeeded in copying the first column of the great Behistun inscription, and submitted a report thereon to the Asiatic Society in London, on January 1, 1838. The task of copying the Behistun inscription was one of great danger. The cuneiform characters were inscribed on a cliff over 300 feet from the ground. For support the transcriber had to trust himself to a ladder resting on a ledge about two feet in breadth. In 1843 he again made valuable researches on the inscriptions and in 1844 he completed his work on the Behistun inscription. A few years later he was commissioned by the trustees of the British Museum to superintend the excavations at Nineveh and Babylon. The results of these works were afterward published by him as "Outlines of the History of Assyria as Collected from the Inscriptions Discovered by A. H. Layard in the Ruins of Nineveh" and "On the Inscriptions in Assyria and Babylonia."

Sir Henry Rawlinson received many marks of distinction from the British government and from scientific and literary bodies. The University of Oxford conferred the much-coveted degree of D.C.L. upon him. He was a fellow of the Royal Society, a corresponding member of the French Institute, a trustee of the British Museum, the Royal Asiatic Society and the Royal Geographical Society.

High Railway Speeds.

From an article in the Railroad Gazette we abstract the following: The first famous record of engine 999 was made May 9, 1893, hauling 362,000 pounds of cars and passengers, the engine and tender weighing 204,000 pounds, the total weight of train being 283 short tons. This train ran on that trip 69 miles in 63 minutes, and during this part of the run made 5 miles in 3½ minutes, or at the rate of 85.7 miles an hour on a descending grade of about 20 feet per mile. During the same run one mile was made in 35 seconds, or at the rate of 102.8 miles an hour. The speed was taken between mile posts with a stop watch by the conductor of the train. Mr. William Buchanan, the designer of the engine, who is certainly not a careless man in such matters, accepted this record as accurate. But if there had been an error of a whole second, which might easily have happened, the rate would still have been 100 miles an hour for one mile. We have, therefore, considered it safe to say that this engine has undoubtedly made as fast time as 100 miles an hour for one mile.

Concerning the record of upward of 112 miles an hour we have always had doubts, and yet we have little doubt that that run was made at even a higher speed than the record which we do accept. On May 19, 1893, engine No. 903, of the New York Central, with the same train as was hauled by No. 999, is said to have made five miles on the same ground; that is, on a descending grade of about 20 feet to the mile in three minutes, or at the rate of 100 miles an hour.

Before this time there were five records running from 87.8 miles an hour up to 97.3 on the Philadelphia & Reading and the Central of New Jersey, made in 1890, 1891 and 1892. Three of these records, including the highest one, were made by engine No. 385, a Baldwin four-cylinder compound. There is a circumstantial record of over 85 miles an hour made July 17, 1893, by the compound locomotive No. 680 with a five-car train. A distance of 13.5 miles was run in 9½ minutes, or at 85.25 miles an hour. The grade is broken, but is

descending nearly the whole distance, varying from 6 feet to 37 feet per mile, with a very short bit of rising grade near the end. The times were taken to the nearest half-minute, and they are, therefore, subject to considerable correction, which might easily reduce the average speed to 80 miles. So we do not attach great value to this as an instance of over 84 miles an hour.

There can, however, be no doubt that speeds of over 84 miles an hour are often made by the Philadelphia & Reading and Central New Jersey engines. A practical designer and builder of locomotives in large practice and with a good deal of experience in timing locomotives, says that "between Jersey City and Philadelphia it is a very common occurrence for the engines hauling the Blue Line trains to reach 90 miles an hour, the seconds per mile ranging from 38 to 45. It has been my pleasure to time these engines repeatedly at a rate of 40 seconds a mile, and I have taken indicator diagrams from them at a speed of 92 miles per hour."

Arts and Industries that did not Exist Fifteen Years Ago.

"Right here in the Patent Office you may watch the forward rush of civilization and realize how rapid it is," said Chief Examiner Greely to a writer for the Washington Star. "Probably it has never occurred to you to consider how many arts and industries that are of importance to-day were unknown in 1880. Their creation has given employment to tens of thousands of people and to billions of dollars of capital. If we were thrown back only so far as a decade and a half, we should find ourselves deprived of numerous comforts, and even necessities, as we now regard them, which were not obtainable at all fifteen years ago.

"The self-binding harvester is new since 1880, commercially speaking. It renders possible the gathering of certain cereal crops with a rapidity unapproachable by hand labor. Hundreds of thousands of men would be required to reap the harvests of the great Northwest without the aid of this machine. It has made practicable the raising of crops far larger than could be produced and garnered otherwise. Incidentally food has been cheapened.

"The typewriter was not put on the market until 1883. It seems wonderful that we could have got along at all without it. In eleven years from \$25,000,000 to \$30,000,000 worth of typewriters have been sold. This machine has opened a new field for women's work. It has increased the demand for writers of shorthand very greatly. The quantity of matter actually written has been enormously increased by this invention. It has rendered letter writing so easy that many people now maintain a large correspondence who would write very few letters by longhand. Merchants write more than twice as many letters as they used to, and the volume of the mails has been proportionately augmented.

CABLE AND ELECTRIC ROADS.

"Who, in 1880, had ever heard of a 'gripman' or 'motorman'? The cable and electric roads are new since then. The cost of constructing and equipping them is mainly for labor, and in this way employment has been given to great numbers of men. These novel systems of traction have given work to regiments of honest fellows who now wear uniforms. When horse cars are superseded by electricity or the cable, the number of passengers carried is always greatly increased and more cars are run, requiring a larger number of employes. The labor at the power houses is better paid than at the stables.

"The last fifteen years have witnessed the creation of the electric light, the electric railway, the telephone, and a large variety of industries depending on electricity. The inventions on which they are based have deprived nobody of employment. On the contrary, they have opened entirely new fields and fresh demands for labor. Without the aid of our patent system, which holds out to the inventor the prospect of reward, how many of these new ideas, which represent the forward steps of civilization, would remain without fruit, if not unthought of?

"The two most important of very recent inventions are the typemaking machine and the cash register. The latter has already put on the market \$15,000,000 or \$20,000,000 worth of material, the cost of which is mainly labor. Let me not forget to mention in the list of novel industries the manufacture of the bicycle, which is new, commercially, since 1880."

A Wire Rope Tramway at Gibraltar.

A wire tramway is stated to have lately been put up at Gibraltar for connecting the signal station at the top of the rock with the lower town. It takes up all the materials necessary for the service of the fortress in less than five minutes, whereas formerly a whole day was required for cartage by a rough and difficult road. The engine house is erected at the north end of the Alameda, whence start two ropes 320 yards long, which lead to the top of the mountain. A powerful engine gives motion to the ropes carrying the tubes, one of which rises while the other descends. The ropes are calculated for a load of more than 70 tons; but they never have to support more than a twelfth of that weight.

Useful Products from Tar.

J. H. W. Stringfellow's process, London, is as follows: The tar, say 1 ton weight to be treated, is put into a suitable vessel and about 1 per cent of an alkali or other saponifying agent is then added and the compound well mixed with 1 ton of water. Before the water has time to separate from the tar, about one-fifth of a ton of petroleum oil of sp. gr. 0.820 is added and slowly stirred into the tarry compound until the free oil becomes of a reddish color. It will then be found that the compound has been separated into three parts, namely: (1) A red oily extract of light gravity, not miscible in water; (2) a substance of soft unctuous pitch, containing some water and resembling Stockholm pitch in appearance and general characteristics; and (3) a discolored, watery liquor. While the separating action is progressing, the light oily extract and the water can be drawn from the vessel, so as to promote the exudation from the pitch which remains in the vessel. After a certain point of separation has been attained, the exudation of oil from the pitch proceeds very slowly, and, moreover, the last oily extract appears to be of a heavier character; hence it is desirable to draw off the liquid after the stage of rapid separation has terminated and then again after the slow stage has ended. The pitch is now removed to a press to express as much free oil and water remaining in mechanical suspension as may be desired. If the compound of tar, water and oil is taken directly after mixing and before separation has begun, it may be thoroughly mixed with an earthy matter consisting of 1 ton of dried powdered clay and 4 cwt. of dry powdered lime, to form an asphalt corresponding approximately to the natural asphalt used for paving and other purposes. The solid residuum may also be pressed into blocks and used as fuel, for gas making or for firing and other purposes. As these solid compounds contain all the benzene and naphtha of the tar, if desired, a proportion of the volatile matters may be driven off by heat in the usual manner. The red liquor may be treated in stills in the usual way to obtain the various constituents.

Charcoal and Products.

It is proposed by T. Hill Jones to conduct the carbonizing process, to save cost of carriage of the wood, at, or in proximity to, the site of growth of the timber. The wood to be carbonized is stacked in heaps or mounts, covered with turf, and generally plastered over externally with a mixture of earth and charcoal dust. The heap is surrounded with a metal casing, which, for the convenience or portability for transmission from place to place, is constructed in separate pieces, so that it may be readily put together on the spot. Openings are formed in the turf cover for the escape of the vapors into the interstitial space formed by the metal casing. The latter is provided with an outlet for conducting the vapors given off during carbonization to a still head and thence to suitable condensing vessels. The stacks of wood may also be carbonized within a casing of brickwork. Inspection tubes may also be inserted to ascertain the progress of carbonization. By the above mode of procedure the utilization of the products given off during the process of carbonization is said to be secured without impairing the quality of the residual charcoal, the fuel value of which is materially depreciated when the carbonization is carried on in retorts.

The Importance of Guarding the Coast of the United States.

An interesting estimate has recently been made of the wealth and population along the coast of the United States which it would be necessary to defend in the event of war. The Atlantic coast line, exclusive of the Gulf of Mexico, has alone the length of 2,732 miles. The entire coast line of the country, including the Pacific coast, the Gulf of Mexico and Alaska, is 10,376 miles. If, however, the bays and rivers be added, the total will be 90,929 miles. Much of this would not attract an enemy's fleet, and taking simply the outer seaboard, exclusive of Alaska, and not considering the bays and rivers, we have an actual coast of 5,558 miles to be defended. The value of destructible property within the reach of an enemy's guns will be found to be enormous. It has been estimated that in Portland, Boston, New York, Jersey City, Philadelphia, Baltimore, New Orleans and San Francisco, such property would aggregate about \$3,836,000,000. It must be considered, however, that these ports comprise only a part of those which require defense. A list of seaport towns made several years ago showed that about 7,000,000 inhabitants were included in the principal seaport cities. The estimated population of all seaport as well as lake towns is over 16,000,000. Another important consideration is that the United States has a commerce amounting to nearly \$1,500,000,000.

A NEW marking ink pencil has the solid color at one end in the usual manner and at the other end a receptacle for a liquid mordant.