

AN INTERESTING PATENT DISCUSSION IN THE SENATE

For several years past the Department of Agriculture has been conducting experiments with a view to promote and increase the production of sugar from cane and sorghum. The more recent of these experiments has resulted in important gains of sucrose by what is known as the diffusion process, which, in brief, consists in reducing the cane by cutters into thin slices, and soaking them in water. The solution is then boiled down in the usual manner.

In this way a larger yield of sucrose or saccharine matter is obtained than by the ordinary process of squeezing between rollers.

In the ordinary process of concentrating the sucrose, much trouble is occasioned by the acidity of the saccharine solution, which caused the inversion of the crystallizable sugar into glucose, resulting in great losses of sugar.

The Department of Agriculture undertook a series of special experiments, having in view the highly important object of discovering a practical mode of preventing the inversion and saving the sugar.

An appropriation of \$94,000 was made to carry on these experiments, at Fort Scott, Kansas, under the general direction of Professor Wiley, a distinguished chemist. On July 19, 1886, the Hon. Norman J. Coleman, Commissioner of Agriculture, appointed Professor Magnus Swenson to be superintendent, to conduct the experiments, under the direction of the chemist.

Professor Swenson set to work most energetically, and it was not long before he hit upon the happy idea of preventing the invertive action of the organic acids in the cane chips upon the sugar during the process of extraction by adding lime to the saccharine or diffusion solution.

The remedy proved at once successful, and the important fact was immediately communicated to the Department of Agriculture by Professor Wiley, who gave ample and deserved credit to Professor Swenson for the suggestion and realization of the experiment. This was in December, 1886.

Very soon after making this new and valuable discovery, namely, on December 29, 1886, Professor Swenson applied for a patent, which, after long lingering in the Patent Office, was finally granted on October 11, 1887, number 371,528.

The discovery of Prof. Swenson appears to be rapidly gaining in importance. It seems likely to prove to be the key to the success of the sorghum sugar industry, and unless his patent can in some way be suppressed, he is likely to be handsomely rewarded for his invention. This is looked upon with horror by many people, who may be required temporarily to pay perhaps the one thousandth part of a cent per pound of sugar for the use of a discovery that may add untold millions of wealth to our agricultural resources.

Complaint has already been made to the Senate, and there seems to be a strong disposition in that body to throttle the patent before it has time to swell into a gigantic monopoly, like the barb fence, the driven well, the telephone or the telegraph, or the Standard Oil Company.

On the 15th of December last, Senator P. B. Plumb, of Kansas, submitted a resolution which was passed after being modified as follows:

Resolved, That the Attorney-General be requested to investigate the issuance of letters patent No. 371,528 to Magnus Swenson, of date October 11, 1887, and if in his judgment the same is invalid upon any ground, or was procured by reason of information obtained from experiments made by the government, and if in his judgment a suit can be maintained in the name of the United States, that he commence suit promptly to have the same canceled or the use of the same by said Swenson or any one claiming under him perpetually enjoined."

Prior to passing the resolution a long discussion took place in regard to the jurisdiction of the Senate, the power of the Attorney-General, etc., in which a number of Senators took part; but only a few members made remarks touching the merits of the invention or the rights of inventors who are in governmental employ, etc.

The only man in the Senate who seems to have had the courage to say a word in behalf of the inventor was the Hon. Wilkinson Call, of Florida.

During the progress of the debate, Mr. Plumb said: "The subject matter of this resolution and the issuance of a patent to Mr. Swenson is of very great importance to the people of this country, because if Mr. Swenson's claim is substantiated it may prove that he has a very important control over the manufacture of sugar from sorghum, the value of which has been demonstrated by experiments made by the government, and the opportunity for the obtaining of this patent having been presented to Mr. Swenson by reason of his employment by the government. I should be very glad, therefore, to have the resolution passed, in order that the Attorney-General may be admonished to do whatever he may find legally within his power in the direction of setting aside the patent at an early day.

"If Swenson has a valid patent, he has it upon a mere technicality. Properly speaking, morally speak-

ing, he has no right to a patent. He was in the employ of the general government; every step of the experiment which resulted in the development of this process was taken by reason of the expenditure of the public money, and except for the expenditure of public money this process could not have been developed, at least at the time that it was."

The Hon. J. B. Beck, of Kentucky, said: "From very long experience and observation here, I have found that whenever we constituted a board, whether it was to examine into guns, or ships, or anything that the government wanted, or even to a canceling stamp for the Post Office Department, and when we furnished them the money and all the facilities for making the investigation, and without our money and without the facilities furnished by us they would have had no idea of the suggested matters in the nature of improvements that they afterward patent; and thus we are constantly handicapped by men who have obtained all the information that enabled them to take out their patents through the means and instrumentalities that we have furnished, and through the money we have put into their hands for the purpose of doing it. If there is any way of breaking that up, I want to break it up.

"If I were to go over the history of the last twenty or thirty years of inventions that have been claimed by men who have been the trusted officers of the government to make improvements for the use of the government, in guns and in the machinery that we have needed, it would be found that a very large majority of the patents have been taken out by men who were in our employ, and who obtained the information to take them out by the means furnished by the government, and the information elicited under the investigations made with the money of the government. It can do no harm for us at least to get the opinion of the Attorney-General as to what our rights now are, so that we may guard against these abuses by law, if need be, in the future."

Mr. Call said: "I think there is a great deal of doubt whether the resolution ought to pass. I should be very willing to vote for a general law authorizing the Attorney-General to bring suits in all cases where there is reasonable cause to believe a patent invalid; but to declare that he shall bring suit to invalidate this patent because the inventor discovered the invention while in the service of the United States, or on the broader ground contained in the amendment, on account that it was in the course of experiments made by the United States, seems to me utterly illogical. Neither fact affords any ground whatever for declaring the patent invalid. Shall we limit the human mind in discoveries to facts which have not been elicited by government investigation? Why is not an invention as meritorious, why are not the operations of the intellect in discovering some great mechanical principle of benefit to mankind because the facts on which the intellect operated were discovered in the course of experiments made by the government and at its expense? The invention is of as much service, and has as much right, and is as commendable, and ought to be as much encouraged, if he discovers some great benefaction from facts elicited by the government as from any other source. The government has no claim on his thought, on the operations of his intellect, and I think the ground of this resolution therefore is entirely erroneous.

"This resolution declares, so far as the Senate has power to do so, that a man in the employment of the government who makes a new discovery of some law of nature, of some process heretofore unknown, shall not have the advantage of it, simply because he is in the employ of the government, and that all his intellectual faculties belong to it outside of the special purpose for which he is employed. I shall vote against it. A poor man's talent is all that he has, and the government does not need to take that away from him."

Mr. George.—"Suppose this discovery is made in the process of experiments carried on by an employe of government with the government's money, then what?"

Mr. Call.—"It does not make the slightest difference. The government does not buy the man's brain for anything but the special purpose for which it employs him, namely, for his use of the already ascertained laws of mechanical operation which may be used. It does not contract with him that whatever new discoveries may be made in the vast field of nature shall be compensated for by his employment to use those already known and discovered. There is no such contract, and there ought to be none. If a man discovers some great and new principle, some great benefaction to mankind, shall it be said because it was done with the government's money that that was contemplated in the contract? Certainly the proposition denies itself; the proposition that when a man contracts with the government to render a specific service he also contracts for all new discoveries in the unknown realm of nature which may be made by him.

"The government is a poor paymaster at the best, and invention will not be promoted by denying the inventors all benefit from their inventions. On the contrary, the power of monopoly, the power of money, will be promoted by the principle of securing the sale of a man's genius before he has made an invention.

"The Senator from Kentucky said that he had known for many years men in the employ of the government using the government's money in its experiments, and then obtaining a patent for some new invention that had been discovered in the course of their employment. If any such patent has ever been issued, it has been by the fraud of the Interior Department or their ignorance. The law has always been to the contrary. The law has always been that a discovery once used anywhere is a dedication to the public. The invention must be new and unused, and not put in service, or a patent cannot be obtained for it."

Hon. Henry M. Teller, of Colorado, said: "I have no objection to the resolution if the facts are as I understand them in this case, and if the law is, as it seems to me it ought to be, that the man who, while engaged in studying a single question for the government under its pay, discovers something greatly advantageous to the people of the United States while so employed, ought not to be allowed (although it is possible the law may permit it now) to obtain a patent for that discovery. He ought not, in equity and right, to be allowed a patent, and thus take the discovery away from the people and make it useful only to himself."

Hon. John Sherman, of Ohio, said: "This invention, made by an employe of the government with the aid of large expenditures of the government, is said to be one of the most valuable and important inventions made of late years, especially in regard to an industry that at this time excites more interest among the people of the United States than any other industry, that is, the question how to utilize the sugar in the beet and in the cane—sorghum in the various forms. If this patent is allowed to stand in the way of the active experiments that are being made in that important process, it will prevent the planting of beets; it will prevent the growth of sorghum; it will prevent further inquiry into the best means of making sugar from the various agricultural products which have been proposed; it will stop the experiments made by the government of the United States; and it is therefore not a slight thing. It is a matter of vital importance.

"I think we have the right, as the Senate of the United States, to direct the attention of the Attorney-General to this matter; to inquire in the first place whether he has the power to test the validity of this patent without a law of Congress; and in the second place to give us such information upon the subject as will enable us to prepare a bill that will enable the government of the United States in honor to withdraw its patent in case it has been illegally or fraudulently obtained."

Labor and Money.

The doctrine of the *power of law* to create monetary value degrades labor as its first effect, by fixing in the minds of the people the notion that labor is not the only source, perhaps not even the greatest source, of monetary value. It concedes to a rival power the domination of labor, by endowing that power with plenary potentiality to regulate the value and price of labor and all it produces. Hence labor would lower itself to a secondary rank in the production of values, whereas it is, in a scientific view, the primary and sole creator of value. Labor must either be master or slave. It must acknowledge no equal, no rival, no usurping, interloping competitor in the creation of the values of the world. If it takes any other than the foremost position among its rivals, its cause is hopeless. It will be led by the nose, like an ox or an ass, it will work in the yoke its rivals contrive for it, and, as has been the case in all past history, it will be regarded by the "money power" in the light of hewers of wood and drawers of water.—*Social Science Review*.

Lake Freight.

A marvelous record in lake marine annals was completed December 9 by the big propellers Jewett and Tioga, belonging to the Union Steamboat Company, when both came into port together, with flags flying and whistles blowing. They first left Buffalo together on the morning of April 26. Each had completed 25 round trips and sailed 46,000 miles, the Tioga having delivered 85,000 tons and the Jewett 75,000 tons of freight during the season. During the whole time neither has had to lie to for a single day for repairs.

The End of Another Year.

During the year now closing, our mail subscribers have received gratis an extra number of the SCIENTIFIC AMERICAN. The present volume closes with 27 numbers, thus giving the subscriber, at considerable cost to the publishers, 53 numbers for the year 1887, in place of 52. We hope our mail subscribers will recognize our liberality in presenting them with the extra number, and favor us with a renewal of their subscription promptly. And if any one can influence a friend to join him, who is not acquainted with the value of our publications, it will be a good thing for both his friend and the publishers.