

MEDALS FOR INVENTORS IN FRANCE.

We find in *L'Invention* a list of the awards of silver and bronze medals recently made by the French *Societe d'Encouragement Pour l'Industrie Nationale*. The principal awards of silver medals were as follows:—

MAKING GEISSLER TUBES.

The first medal was decreed to M. Alvergniat, Jr., for the introduction into France of the manufacture of those glass tubes which exhibit such curious electrical phenomena and are known as Geissler tubes. France as well as other nations had previously obtained these tubes wholly by importation from Germany.

DIAPHRAGMS OF BOILERS.

The second medal was for a beet root press. The third was bestowed upon M. Boutigny d'Evreux for his diaphragms for steam boilers, which the committee say are of great service in removing scale.

ELECTRIC LAMP.

It is sometimes necessary to enter an atmosphere of poisonous gas, to rescue persons who have fallen in it, or for some other purpose. This can be done by having in the mouth the ends of breathing tubes communicating with the free air. But if a light is required, an ordinary lamp would not answer the purpose, as it would be extinguished in the poisonous gas. Messrs. Dumas and Benoit have devised an electric lamp to be used in this case. It consists of a single galvanic battery, a Ruhmkorff coil, and a Geissler tube, all arranged in compact form. The Association say it has been tried successfully in the mines of Alais and Saint-Etienne, and they are therefore happy to decree the inventors a silver medal.

MANUFACTURE OF GLASS AND EMERY PAPER.

The committee remark that the use of polishing paper dates from 1792. A manufactory of the article was established by Mr. Fremy in 1814, and his son M. Dumas Fremy, has now a manufactory at Ivry, which is a model establishment; both in the excellence of its products and in the care for health and well being of the workmen. A silver medal is, therefore, awarded to M. Fremy.

ELECTRO-MAGNETIC ENGRAVING FOR CALICO ROLLERS.

A silver medal was awarded to M. E. GaiFFE for an improved process of engraving copper rollers for printing calico by magneto-electricity. The process is not explained but an explanation is promised at some future time.

BEEF TENDONS FOR STEPS.

M. Gautron, a manufacturer of centrifugal machines, having experienced great difficulty in finding any material which would endure the severe friction at the bottoms of the shafts, finally succeeded perfectly with the tendons of beeves. His machines run at a velocity of from 1500 to 2500 revolutions per minute, but the tendons last a long time and require very little oil.

The report also says that these machines have been used with success in the manufacture of potato starch, producing an article of perfect whiteness and purity.

THE DYEING OF THE NINETEENTH CENTURY.

A medal was awarded to M. Grison for his work with this title.

BALANCES OF PRECISION.

M. Hempel employs thirty workmen in manufacturing delicate balances for scientific investigations, and he received from the society a silver medal for the excellence of his workmanship.

BLOWING UP BUTCHERED ANIMALS.

A bronze medal was bestowed upon M. Beliard for an apparatus, consisting of vessels of compressed air and india-rubber tubes, for blowing up the skins of slaughtered animals to facilitate their removal. It is said to be more convenient for the butcher boys than the bellows at present in use.

IMPROVED MODE OF RAISING OYSTERS.

M. Kemmerer, of Saint Martin, Isle of Re, places the young oysters in cells formed in tile quite similar to the cells in which bees raise their young. This is said to cause a rapid and remarkably perfect development of the mollusk.

PETROLEUM.—The value of a tract of land on Oil Creek, Venango county, Pennsylvania, two miles in width and twenty miles long, is estimated at two hundred and fifty millions of dollars. Four years ago his land was hardly worth five dollars an acre.

CEMENTATION OF IRON BY CARBON FROM GAS RETORTS.

The last number of *Le Gaz* publishes a note from M. Caron, presented to the French Academy of Sciences by M. Sainte-Clair Deville, giving the result of an experiment with gas retort carbon for converting iron into steel. The experiment was suggested by a statement of M. Regnault, that in furnaces at Sevres the porcelain is blackened when it was placed in the neighborhood of a morsel of graphite from gas retorts, and that in the same circumstances iron is transformed into cast iron. M. Regnault inferred from this that gas retort carbon might be more active in the cementation of iron than charcoal.

M. Caron placed a bar of wrought iron, four-tenths of an inch square and a foot long, in an earthen tube filled with pieces of gas retort carbon, and buried it in a fire of similar carbon, where it was kept at a cherry red for six hours. On being removed it showed no traces of cementation.

On analyzing the carbon, M. Caron found it to be far more impure than had been supposed. It contained nearly one per cent of sulphur, and traces of potassa and soda. M. Caron says:—

"Thus, in the cementation which I have attempted to produce, I have put in contact with the iron a coal very sulphurous and containing no sensible quantity of free alkali. But I had previously demonstrated that in these circumstances acieration could not take place, because the production of alkaline cyanides was impossible. The result which I have obtained is therefore a confirmation of the theory of cementation that I announced six years ago."

He then repeated the experiment, but with the addition of 10 per cent of carbonate of potassa, and the cementation was easily effected. The same result was also produced by adding 10 per cent of natural carbonate of baryta.

ASPARAGUS A SUBSTITUTE FOR COFFEE.

Some two years since a patent was obtained by Mr. James P. Gage, of Staten Island, for the use of asparagus as a substitute for coffee. He asserts that the seed and root of asparagus are found to contain caffeine, the peculiar principle of coffee, in larger quantities than the coffee berry.

Caffein can be extracted from coffee and obtained in white crystals by a chemical process which is not very complicated. The coffee is first soaked in ether which dissolves and extracts the caffeine. The solution is then mixed with water, and the subacetate of lead is added, when the caffeine is thrown down in a solid precipitate. After the removal of the excess of lead, and filtering, the caffeine is obtained in white needles, slightly flexible and transparent, with a silky luster, feebly bitter, and free from odor. Coffee contains from $\frac{1}{3}$ to $\frac{1}{6}$ per cent of caffeine; the weakest being the St. Domingo, and the strongest that from Martinique.

If the root and seed of asparagus do really contain caffeine in larger quantities than the coffee berry, it is a very interesting fact. We should like to see the matter tested by some of our chemists.

GOESSLING'S CORN-SUGAR PATENTS.

As we continue to receive applications for copies of Goessling's patents for making corn sirup, the claims for which were inadvertently forwarded on the 10th of May last, when the patents were not issued, we publish the following letter relating to the subject from the Commissioner of Patents:—

U. S. PATENT OFFICE, Feb. 16, 1864.

GENTLEMEN—No patents have been granted to F. W. Goessling, of May 10, 1864. Respectfully,

D. P. HOLLOWAY, Com.

MESSRS. MUNN & Co.

A patent was issued on the 20th of December, 1864, to Mr. Goessling, and the following is a copy of the specification:—

No. 45,561.—IMPROVEMENTS IN THE MANUFACTURE OF SUGAR.—F. W. Goessling (he having assigned his right, title and interest in said improvements to himself, H. F. Briggs and L. Bradley), Buffalo, N. Y.:

To all whom it may concern—

Be it known that I, Frederick W. Goessling, of the city of Buffalo, County of Erie, and State of New York (assignor to Henry F. Briggs, Lyman Bradley and myself), have invented or produced a new compound sugar, and I do hereby declare that the follow-

ing is a full and complete description of the manufacture or compounding thereof.

The nature of this invention relates to the manufacture of a new article of sugar from a combination of cane sugar with corn sirup. I take a sirup made from Indian corn by any known process of making corn sirup or corn sugar; the process being carried to that point where the sirup is purified and rendered in a condition to granulate or crystallize.

I also take a quantity of cane sugar (any kind or quality of cane sugar will answer the purpose, and dilute it or reduce it to a liquid sirup and purify the sirup by any known process of purifying cane sugars and render it in a suitable condition for crystallization. These two sirups are then mixed or combined together for crystallization and conversion into a new compound sugar, the crystallizing process being completed, and the new sugar perfected after the combination of the two sirups. The crystallizing process may commence in each sirup before the two are combined, and be completed after their combination.

After the mixture of the two sirups, as above stated, the mixture will be in a thick semi-liquid state, and it is then transferred to the mold for the completion of the crystallizing process, and the further treatment by "liquoring" in a common manner.

The proportion of cane sugar or cane sirup used in combination with the corn sirup, is not definite or material, as a larger or smaller quantity will effect the purpose.

The object and effect of this combination is to induce the whole mass to crystallize in the same manner that cane sugar does, and to give the whole the taste and the qualities of cane sugar.

I also propose, in some cases, to use the sirups produced from wheat and other cereals, as a substitute for Indian corn sirup in combination with cane sugar, and for the same purpose as above stated.

What I claim as my invention, and desire to secure by Letters Patent, is a new and improved compound sugar made by a combination of cane sugar or cane sirup with corn sirup, substantially as set forth.

Good Books.

The new and enterprising publishing house of Messrs. Hurd & Houghton, No. 401 Broadway, have added to their large and valuable stock by the purchase of the entire list of publications of J. G. Gregory, consisting of J. Fennimore Cooper's Works; "Forest Pictures in the Adirondacs," by John A. Bowes; "A Selection of War Lyrics," with illustrations by Darley; "A Forest Hymn," by Wm. C. Bryant, illustrated by John A. Hows; "In the Woods," illustrations by John A. Hows; "Christmas Poems and Pictures," illustrated; "The Vagabonds," illustrations by Darley; "The Snow Image," by Nathaniel Hawthorne, illustrations in colors; "Spectoria," surprising spectral illusions; "Golden Leaves from the British Poets"; "Golden Leaves from the American Poets." This firm keep a general assortment of the best books to be found in the market.

A Valuable Patent.

The Hartford Arms Company, just organized for business, has a Government contract for 200,000 Hammond rifles, and has agreed to pay the inventor, a Bridgeport mechanic, \$10,000 in gold or its equivalent in cash, \$2 on each rifle manufactured, for the patent, and a salary of \$2,500 as superintendent of their manufacture. The statement in some of the Connecticut papers that this arm has been selected out of thirty different models as the one for the United States service, is erroneous, as the military commission appointed to make a selection, and who have been in session in Hartford, have as yet reached no conclusion.

ANTIQUITY OF ZINC.—A strange discovery, if true, has just been made at Pompeii. The *Italia* of Naples states that a fountain has been discovered there, covered with zinc. It is added that this is the first time that the said metal has been found at Pompeii. We should think so; for though the ore was known to the Romans, the metal was not extracted from it, so far as our knowledge goes, until the sixteenth century, by Paracelsus.

STATISTICS show that cows in good condition require about thirty pounds of hay per day.