

uring; his walk light, active, and firm. His chief characteristics were remarkable quickness and accuracy of observation, wonderful shrewdness, common sense, and frankness; boldness, decision, and enterprise; rare mechanical skill and constructive powers; special talent for arrangement and organization, and rapid and sound judgment on all matters that came before him.

We are indebted to the *Practical Magazine* for the admirable portrait of this remarkable man.

Scientific American.

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Contents:

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as 'Alcohol, testing', 'Algal, the variable star', 'Amazons, up the', etc., with corresponding page numbers.

SECRET SOCIETIES AMONG COLLEGE STUDENTS.

Mortimer M. Leggett, the youngest son of the Commissioner of Patents and a student at Cornell University, was recently accidentally killed during the progress of his so-called initiation into the "mysteries" of a college secret society known as the *Kappa-Alpha*.

As one of these college fraternities has thus been the indirect means of causing this terrible calamity, we desire just here to express our opinion on the system of secret societies as generally practiced in our institutions of learning.

The sad and untimely fate of Mr. Leggett, just at the outset of doubtless a brilliant and honorable career in the calling which his father has so ably adorned, will, from the circumstances under which it occurred, excite a lively and widespread sympathy.

There is a notion, which is becoming entirely too prevalent, that colleges are merely convenient places for sending young men to while they are passing through that uncertain and troublesome age, leading to manhood, during which they are expected to sow their traditional wild oats.

PROGRESS OF PATENTS.

The following were the number of applications for patents made to the principal governments of the world in the year 1872, as given in the published statistics of the British Patent Office:

Table showing the number of patents applied for in 1872 across various countries like United States, France, Great Britain, Belgium, Austria, Canada, Italy, Saxony, Sweden and Norway, Bavaria, Wurtemberg, Baden, British India, Victoria, Prussia, New South Wales, British Guiana, Cape of Good Hope, New Zealand, Mauritius, Ceylon, Tasmania, and Jamaica.

The aggregate number of patents applied for in all of the countries above named, in 1872, except the United States, was 14,072, thus showing that in this country the number of patents annually applied for exceeds, by 4,171, the combined number applied for in all other countries above named.

WOOD AND STRAW PAPER MAKING IN FRANCE.

The improved processes of making paper from wood, straw, and various grasses, as practiced in France now enables the manufacturers to recover 85 per cent of the caustic alkali, used in the reduction of the raw material into pulp.

In order to convert wood into pulp, a strong solution of the alkali is necessary. One pound of carbonate of soda is required to produce four pounds of pulp.

By steeping the wood or straw in the alkali solution, the resinous and other gummy matters are separated from the fibers of the material, and become mixed with the solution. To regain the soda for re-use is now the object of the manufacturer.

The evaporation is effected by passing the product of combustion from the fire which heats the alkaline solution through the liquid which is to be evaporated. For this purpose the liquid is thrown up in the form of a thin spray, by paddle wheels.

TWO INTERESTING DISCOVERIES.

The *America*, a daily journal of Bogota, in a recent issue publishes a letter of Don Joaquin Alvez da Costa, in which he states that his slaves, while working upon the plantation of Porto Alto, Paralyba district, Peru, have discovered a monumental stone, erected by a small colony of Phoenicians who had wandered thither from their native country in the ninth or tenth year in the reign of Hiram, a monarch con-

temporary with Solomon and who flourished about ten centuries before the Christian era. The monolith bears an inscription of eight lines, written in clear Phoenician characters, without punctuation marks or any visible separation of the words.

Another and more astonishing discovery, we find announced in *Les Mondes*. It appears that some Russian colonists, having penetrated into hitherto unexplored parts of Siberia, have found three living mastodons, identical with those heretofore dug up in that country from frozen sand.

NEW ORDER BY THE COMMISSIONER OF PATENTS.

The subjoined order, recently issued by the Commissioner of Patents, will be fully appreciated by inventors and their representatives, exhibiting, as it does, a determination at headquarters that the chronic indolence heretofore prevailing among certain examiners, shall no longer be tolerated.

U. S. PATENT OFFICE, Washington, D. C., October 3, 1873

I have noticed, for more than two years past, that a few of the Examiners are generally from one to two months behind with the work in their rooms. The fact that they so uniformly have about the same number of cases on hand is evidence to me that, with proper effort, they might keep their work closely up to date.

(Signed) M. D. LEGGETT, Commissioner of Patents

The tedious delays in the matter of official decisions often deter inventors from applying for patents, and are equally discouraging to those having cases pending in the Patent Office.

PETROLEUM AND PINE TAR GASES.

Some time ago, it may be remembered, we called attention to the interesting and novel experiments, made by Professor Benevides of Lisbon, Portugal, upon the flame of compressed carbonized gas burning in free air.

The gas derived from vegetable sources, used in the experiments, was obtained by the distillation of the residue left after the distillation of the roots, by employing a jet of steam at high tension, which was injected into the distilling cylinders. A liquid was produced from which turpentine was extracted, when there remained a black and thick fluid as residue.

Coal gas possesses in general much of the protocarburet and little of the bicarburet. As the proportions of these gases are variable, the density and illuminating power of the mixture likewise vary considerably.

Pine gas has a very pronounced odor resembling that of burned turpentine: its density is 0.8, nearly double that of coal gas. It is a mixture very rich in carbon and requires burners of special construction with very small orifices, in order to avoid the production of smoke and bad odor.

The air which combines with the flame in the latter case is insufficient to ensure the combustion of the enormous quantity of carbon contained. The illuminating power of this pure gas is much superior to that of coal gas.