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Table listing contents of the supplement, including sections like 'I. ASSAYING', 'II. BIOGRAPHY', 'III. ENGINEERING', etc., with page numbers.

THE PRESIDENT'S MESSAGE AND THE PATENT OFFICE.

In a short clause of his annual message, presented to Congress on December 6, President Cleveland commends the bringing forward of the business of the Patent Office, and promises still more for the future. On the 4th of March, 1885, he states the current business was in arrears on an average five and one-half months. Several divisions were twelve months behind. Three months is given as the average of the arrears at the close of the last fiscal year, and the prediction is made, substantially, that soon only a nominal delay will precede the examination of each case. This will be most cheering news to the inventor, who hitherto has been disheartened in his work by the endless delays in obtaining protection for his invention.

The Treasury Department receives this year a surplus of \$163,710.30 from the Patent Office, the receipts of the office aggregating \$1,205,167.80. The large volume of its business appears from the number of patents granted—25,619. Notwithstanding its growing business, no increase of force is asked for, the Commissioner apparently feeling able to cope with the work with the present number of employes. The tendency to reduction of expense is shown in the estimates for three successive years. For the year ending June 30, 1886, \$890,760 was estimated; for the year ending June 30, 1887, \$853,960; and for the year ending June 30, 1888, the estimate is only \$778,770.

PROGRESS OF CORNELL UNIVERSITY.

Under the careful management of Mr. Cornell and of his successors in the administration of the finances of the institution—the board of trustees—and under the guiding hands of Andrew D. White and of Charles Kendall Adams, the past and present presidents of the University, the institution has become at once the largest and the most successful—both in the sense of growth in numbers, and in extent of its range of instruction, and the magnitude and strength of its faculty—of the great establishments of learning in the United States, and is more nearly a university than almost any other. Its courses of instruction cover an exceedingly wide range, while yet retaining in its scheme the department of agriculture and of the mechanic arts—mechanical engineering, as the modern name goes—and "related studies" as its leading courses. The classics are taught at Cornell by some of the ablest teachers in the country, and in history and political economy a corps of professors of unusual strength give such instruction as only a great university can offer. Liberal education stands at Cornell where its friends would desire that it should stand in every great college, and all students who have the means and desire to do so, even when proposing to enter the technical courses, may obtain a good, broad, and liberal general education before attempting professional work.

The announcement is now made by the trustees of Cornell University that, at the commencement of the next collegiate year, a law school will be established at that university, and that it will be ready to receive students in the autumn of 1887.

This determination will be looked upon with special satisfaction by all who are interested in the work of promotion of the useful arts, not only from the side of the schools, but also practically; as it will undoubtedly enable all so desiring to secure the best possible instruction in the laws having special importance to those engaged in such vocations as have closest relations with the arts on the one side and the law on the other.

In addition to the law school, we are soon to have the present courses broadened into a special school of mechanical engineering, as well as of the civil engineering, of railways, followed, in due time, by a school of steam engineering, schools of the engineering of the textile manufactures, and other branches of mechanical engineering; and, finally, when these schools of mechanical engineering are provided for properly, it is expected that a school of mining engineering of exceptional completeness in its corps of instructors and in its outfit may be founded as an important part of the Sibley College system.

Evidence of progress like this at Cornell is indicative of ability and purpose on the part of the management to keep up with the spirit of the times, and will be highly gratifying to all who are interested in the advancement of practical education.

WILL THE BROOKLYN WIRES BE BURIED?

The Brooklyn Board of Commissioners of Electrical Subways has received advice from the Corporation Counsel, in which he tells them that the electrical companies must be provided with a subway in which their service may be carried on unimpaired. In other words, they are required to furnish underground a medium for the operation of electrical wires which shall be as good as that furnished by the pole system. Since the air is the best insulation for such wires and the ground the worst, the task set before the Commission, as will be seen, is by no means an easy one, and, perhaps, its fulfillment is not even possible.

There is no known means at present of making wires work as well for considerable distances under as above ground.

As showing the little progress that has been made of late in lessening induction and retardation, the enemies of good telephone and telegraph service, we have the evidence presented to the recent electric light and telephone conventions. This shows that though skillful electricians have worked assiduously at the problem, little or no progress has been made in a twelvemonth; that the mal-influences which disturb underground telegraph wires, and telephone wires above and especially under the ground, remain unchecked and unexplained.

Fortunately for the Brooklyn Subway Commission, the Corporation Counsel does not insist that they shall find a means of burying the wires as efficient as that now in operation through the air, but only that such a subway shall be found before the electrical companies are forced to bury their wires. There is an alternative, fortunately, for the Commission, a door of escape out of this perplexing dilemma.

Slag Pavements.

A new industry has been started in Middlesbrough, Eng., the object of which is to utilize blast furnace slag in a somewhat more definite and systematic manner than has hitherto been attempted. The works where it is carried on belong to a limited company, the managing director of which is Mr. J. A. Jones. One of the objects of the company is to make paving sets. These are produced by pouring blast furnace slag into metallic moulds, and then allowing the castings to cool slowly in an annealing furnace. Without annealing, slag cast in whatever form is certain to fly to pieces by the unequal contraction which takes place as it cools. With annealing it can be cast into almost any form, and when finished is as hard and tough as a basaltic rock. Inasmuch as these sets are as serviceable as those which are hewn from whinstone, and much more shapely, the manufacture and sale of them is of itself a good thing for Cleveland and for all purchasing districts. But there are further manufactures. It has been found that if slag which has been annealed be pulverized, and mixed with cement in certain proportions, and pressed into moulds, and put aside for, say, three months, it sets into a peculiarly firm, hard, and solid mass. The value of these qualities was soon perceived, especially as applied to the manufacture of concrete flagstones. Consequently, the company referred to is making these and laying them down for footpaths, railway station platforms, and so forth. The standard size of flagstone is about 3 ft. by 2 ft. by 3 in. They are exceedingly flat and smooth, and usually hard on the surface. When laid down in place, they form a beautiful, even surface, far superior to what is ever obtained with the best Caithness flags. Town surveyors always prefer pavements laid with flags to those made by concreting in place; for in the former case one or more flags can be taken up and laid down again should there be any settlement of the foundation below, or should it be necessary to get at any pipes or drains. But if an unjointed concrete pavement is interfered with, or any settlement takes place below, it can never again be put into as satisfactory condition as at first. Inasmuch as Middlesbrough is a seaport town, and flagstones and paving sets are articles required everywhere, it is to be hoped that they will henceforth be exported coastwise and abroad. In this way something tangible might be done at once to find employment for the idle to tide over the long-continued depression of trade, and at the same time to prevent a further accumulation of slag in the vicinity.

Rewards of Successful Invention.

Mr. Leedham Binns, of the Binns Patent Band Company, of Philadelphia, has obtained several patents which have proved very valuable. In the manufacture of gold, silver, and copper tinsel yarns, for use in domestic upholstery goods, what is almost entirely a new industry, of considerable importance, has been created, largely in consequence of the patented inventions of Mr. Binns, for which he is said to have been directly remunerated in the sum of \$375,000. These brilliant yarns are soft, and designed to be specially applicable in fine weaving, while the patented inventions referred to have made it possible to manufacture them so cheaply that they are becoming very popular. The company has been obliged recently to greatly enlarge its works, and the new uses to which such yarns are found suitable promise a continuous growth in the business.

A Remarkable Cattle Disease.

Dr. E. Salmon, Chief of the Bureau of Animal Industry at Washington, says that the cattle plague in Clinton County, Ind., is not pleuro-pneumonia, but bemicular bronchitis, very contagious, and frequently fatal. The post-mortem in each case disclosed thousands of small, hair-like, white worms, from one to two inches in length, in the bronchial tubes. The infected cattle are quarantined, and it is thought the disease will be checked.