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NEW YORK, SATURDAY, DECEMBER 18, 1886.

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Scientific American.

THE PRESIDENT'S MESSAGE AND THE PATENT OFFICE.

In a short clause of his annual message, presented ground. to Congress on December 6, President Cleveland On the 4th of March, 1885, he states the current busimonths. Several divisions were twelve months behind. Three months is given as the average of the case. This will be most cheering news to the inventor, plained. 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 subway shall be found before the electrical companies of the office aggregating \$1,205,167.80. The large are forced to bury their wires. There is an alternative, patents granted-25,619. Notwithstanding its growing of this perplexing dilemma. 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 mates 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 so, even when proposing to enter the technical courses, tion before attempting professional work.

students in the autumn of 1887.

satisfaction by all who are interested in the work of again be put into as satisfactory condition as at first. promotion of the useful arts, not only from the side of Inasmuch as Middlesbrough is a seaport town, and the schools, but also practically; as it will undoubtedly flagstones and paving sets are articles required everystruction in the laws having special importance to exported coastwise and abroad. In this way sometions with the arts on the one side and the law on the ment for the idle to tide over the long continued deother.

In addition to the law school, we are soon to have the a further accumulation of slag in the vicinity. present courses broadened into a special school of mechanical engineering, as well as of the civil engineer-

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

As showing the little progress that has been made of commends the bringing forward of the business of the late in lessening induction and retardation, the enemies Patent Office, and promises still more for the future. of good telephone and telegraph service, we have the evidence presented to the recent electric light and teleness was in arrears on an average five and one-half phone conventions. This shows that though skillful electricians have worked assiduously at the problem, little or no progress has been made in a twelvemonth ; arrears at the close of the last fiscal year, and the that the mal-influences which disturb underground prediction is made, substantially, that soon only a telegraph wires, and telephone wires above and espenominal delay will precede the examination of each cially under the ground, remain unchecked and unex-

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 volume of its business appears from the number of fortunately, for the Commission, a door of escape out

Slag Pavements.

A new industry has been started in Middlesbrough, tendency to reduction of expense is shown in the esti- 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 teachers in the country, and in history and political concrete flagstones. Consequently, the company reeconomy a corps of professors of unusual strength give ferred to is making these and laying them down for such instruction as only a great university can offer. footpaths, railway station platforms, and so forth. The Liberal education stands at Cornell where its friends standard size of flagstone is about 3 ft. by 2 ft. by 3 in. would desire that it should stand in every great college, They are exceedingly flat and smooth, and usually hard and all students who have the means and desire to do on the surface. When laid down in place, they form a beautiful, even surface, far superior to what is ever obmay obtain a good, broad, and liberal general educa- tained with the best Caithness flags. Town surveyors always prefer pavements laid with flags to those made The announcement is now made by the trustees of by concreting in place; for in the former case one or Cornell University that, at the commencement of the more flags can be taken up and laid down again should next collegiate year, a law school will be established at there be any settlement of the foundation below, or that university, and that it will be ready to receive should it be necessary to get at any pipes or drains. But if an unjointed concrete pavement is interfered This determination will be looked upon with special with, or any settlement takes place below, it can never enable all so desiring to secure the best possible in-, where, it is to be hoped that they will henceforth be those engaged in such vocations as have closest rela- thing tangible might be done at once to find employpression of trade, and at the same time to prevent

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119. Com outfit may be founded as an important part of the tions of Mr. Binns, for which he is said to have been directly remunerated in the sum of \$375,000. These vidence of progress like this at Cornell is indicative brilliant yarns are soft, and designed to be specially ability and purpose on the part of the management applicable in fine weaving, while the patented invenkeep up with the spirit of the times, and will be tions 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.

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hly gratifying to all who are interested in the adncement of practical education.

..... WILL THE BROOKLYN WIRES BE BURIED?

he Brooklyn Board of Commissioners of Electrical bways has received advice from the Corporation unsel, in which he tells them that the electrical comnies must be provided with a subway in which their vice may be carried on unimpaired. In other words, y are required to furnish underground a medium the operation of electrical wires which shall be as od as that furnished by the pole system. Since fatal. The post-mortem in each case disclosed thouair is the best insulation for such wires and the ound the worst, the task set before the Commission, will be seen, is by no means an easy one, and, will be checked.

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 bermicular bronchitis, very contagious, and frequently sands 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