

Scientific American.

ESTABLISHED 1845

MUNN & CO., EDITORS AND PROPRIETORS.

PUBLISHED WEEKLY AT

No. 361 BROADWAY, NEW YORK.

TERMS FOR THE SCIENTIFIC AMERICAN.

One copy, one year, for the U. S., Canada or Mexico, \$3.00

The Scientific American Supplement

is a distinct paper from the SCIENTIFIC AMERICAN. THE SUPPLEMENT is issued weekly. Every number contains 16 octavo pages, uniform in size with SCIENTIFIC AMERICAN.

Building Edition of Scientific American.

THE BUILDING EDITION OF THE SCIENTIFIC AMERICAN is a large and splendidly illustrated periodical, issued monthly, containing floor plans and perspective views pertaining to modern architecture.

Export Edition of the Scientific American

with which is incorporated "LA AMERICA CIENTIFICA E INDUSTRIAL," or Spanish edition of the SCIENTIFIC AMERICAN, published monthly, uniform in size and typography with the SCIENTIFIC AMERICAN.

NEW YORK, SATURDAY, MAY 23, 1897.

Contents.

(Illustrated articles are marked with an asterisk.)

Bicycle holder, Risdon & Poole's\* 324
Books, new 322
Business notes 324
Chromatizing dry plates 328
Crops of 1896 324
Dry dock leak, Brooklyn Navy Yard\* 326
El Mistil, Peru\* 324
Fair, American Institute 324
Gun, inventor of the automatic 322
Gun manufacture in the U. S. 324
Invention, false stimulation of 326
Inventions recently patented 322
Kinolograph films, development of 327
Labor and machinery, Bishop Potter on 322
Lamp, electric, new\* 331
Latch, Whitcomb's barn door\* 324
Motor carriage, Columbia\* 331
Music leaf turner, Fletcher's\* 325

TABLE OF CONTENTS OF

Scientific American Supplement

No. 1116.

For the Week Ending May 22, 1897.

Price 10 cents. For sale by all newsdealers.

I. BOTANY.—Fritillaria Pluriflora.—1 illustration..... 17834
II. ELECTRICAL ENGINEERING.—Electro-Germination.—By ASA S. KINNEY.—The conclusion of this interesting and important paper.—Many valuable tables are given, showing the results of experiments..... 17834
III. ELECTRO-METALLURGY.—Galvanic Plating of Aluminum... 17836
IV. LOCOMOTIVE ENGINEERING.—Locomotive Building in Japan.—2 illustrations.—Description of recent locomotives built at the government shops in Japan..... 17839
V. MINERALOGY.—Precious Stones as they have Influenced Geography.—The report of an interesting lecture before the Franklin Institute.—By GEORGE F. KUNZ, the gem expert..... 17832
VI. MISCELLANEOUS.—The War in Thessaly.—An account of some of the causes which have contributed to the success of the Turks in the Greco-Turkish war.—3 illustrations..... 17832
The Fat Men's Club of Paris.—1 illustration..... 17833
Engineering Notes..... 17837
Electrical Notes..... 17837
Miscellaneous Notes..... 17837
Selected Formulae..... 17836
VII. NATURAL HISTORY.—The Bear of Northern India.—1 illustration..... 17835
Economic Ornithology.—Birds in their relation to man.—A report of an interesting lecture by Prof. WITMER STONE..... 17835
VIII. PHOTOGRAPHY.—Collodio-Chloride Emulsion for Transparencies..... 17841
IX. PHYSICS.—Some Experiments with Cathode Rays.—By A. A. C. SWINTON.—14 illustrations..... 17843
X. RAILWAYS.—Railways of the World.—A review of the last seventy-two years.—An interesting account of the railways of the world, giving many figures..... 17839
Street and Other Railways in Greece.—By NICHOLAS D. SOURMELY..... 17840
Note on the Dajeeling Railway in India..... 17840
XI. STEAM ENGINEERING.—The Testing of Indicator Springs.—An account of a very interesting apparatus for making exact tests of indicator springs.—3 illustrations..... 17838
XII. TECHNOLOGY.—Cement for Bicycle Tire..... 17836
The Use of Gutta Percha in the United States.—By JOHN M. ARMSTRONG..... 17841
Machine for Degreasing Leather.—Full description of an interesting piece of machinery.—2 illustrations..... 17842
XIII. TRICKS.—Objects Made of Egg Shells.—Illustrated..... 17845
Yogi Magic in India..... 17845
XIV. VITICULTURE.—The Vineyards of France..... 17846

"UNITED STATES PATENT LAWS."

Under this title the editor of London Engineering publishes in a recent number of that admirable periodical a rather lengthy criticism of the patent laws, or rather of the patent practice, of the United States. The article is given particular prominence by appearing in a journal which has always shown a most friendly spirit toward American institutions, and is remarkable in its tendency to create the impression that the "alien" inventor will receive unfair treatment at the hands of the United States Patent Office.

One of the points urged by Engineering as showing partiality in the practice of the United States Patent Office is thus stated: "Let us assume there to be before the United States Patent Office two applications for patents for one and the same invention, viz., one by a British subject and one by an American citizen, also that the British subject was in reality the earlier inventor of the two, but had not given publicity to his invention before lodging his United States patent application; then a patent would be granted to the American citizen, not to the British subject. This is only one of the many disadvantages that aliens suffer in the United States."

We may state, without any reservation, that the citizenship of an applicant for a United States patent does not enter into the equation in any way, and that in this case an American citizen does not enjoy any special privileges simply because of his nationality. The natural inference from the above quotation is that the patent will issue without ado to the American citizen and that the "alien" will be unjustly deprived of his rights. Of course this is entirely untrue. In the event above stated interference proceedings would be instituted and the respective parties would be called upon to establish the priority of invention. It is true that, when an invention is made abroad, it may be difficult for the inventor in interference proceedings to adduce such evidence as will be considered competent by the United States Patent Office and by the United States courts. This matter of evidence is dependent entirely upon the residence of the parties and the jurisdiction of the tribunals before whom they appear, and has nothing whatever to do with the citizenship of the parties. So far from this practice working an injustice, the proposition quoted above might be reversed and an American citizen residing abroad, although the prior inventor, might not be able to establish his position as against the British subject resident here, had he filed his application for a patent simultaneously, in which case the patent would issue to the "alien" residing in this country. This conclusion will no doubt startle our contemporary, but it is true, nevertheless. The article goes on to speak of the unfair practice in the case of caveats, which cannot be registered by aliens. Without touching upon the motive which governed when this practice was instituted, the criticism is of insignificant importance, owing to the prejudice which exists among leading attorneys against the general practice of filing caveats. It is difficult to conceive of a case in which a non-resident would in any event derive any benefit from filing a caveat. It should be borne in mind that it offers no "protection" as such, but simply entitles the caveator to notice of the filing of a similar application.

In discussing the merits of the International Convention, the writer goes on to say: "Furthermore, it is of interest to note that unpatented and unpublished inventions existing in foreign countries are not presumed to be known in the United States, and, therefore, as the first to convey to the public any knowledge of the invention, a person who independently, though subsequently, invents and patents the same thing there, would seem to be regarded as the first inventor within the true meaning and intent of the law." This certainly is quite proper. The whole spirit of our patent system is to discourage delay and neglect in the introduction of inventions. If a party has been guilty of laches or negligence in the patenting or publication of his invention, he must suffer the consequences.

It seems rather strange that such criticisms should proceed from Great Britain, whose attitude toward the true inventor, and particularly the true foreign inventor, is certainly anything but liberal. An American who has unwittingly allowed his United States patent to issue before filing his British patent, unless he still has time to avail himself of the provision of the International Convention (seven months), forfeits the right of procuring in the United Kingdom a valid patent. The Englishman, on the contrary, may have patented his invention in England and may have been enjoying the fruits of his invention for

many years and may still apply for and obtain a perfectly valid United States patent. He is allowed, in other words, to test the practicability and the value of his invention before being compelled to file his application here. Not so, however, with the American inventor. He is compelled to take out his British patent when, perhaps, his invention is still in an experimental stage, and certainly before its merits and practicability have been tested. Furthermore, in England a patent will be issued to him who first imports the invention into the United Kingdom, irrespective of the fact of his being the true inventor or not. This opens the way to many irregularities, and the real inventor can readily be deprived of the fruits of his discovery.

There is another way in which the patent laws are more favorable to the "alien" inventor than to the United States citizen. The latter in applying for a patent does not only make affidavit that he believes himself to be the original and first inventor, but the invention must not have been in public use in the United States for a period of more than two years prior to the date of filing the application. The "alien," however, may have had his invention in public use abroad for many years and he can still procure a perfectly valid patent in the United States.

The new law which has recently been enacted, and which comes into operation on January 1 next, provides that foreigners will be compelled to conform to the practice established by the International Convention, and file their applications within seven months of the date of filing the applications in the country of origin.

We believe in a broad minded attitude toward foreigners, and it is for the benefit of the country that the patent laws as regards foreigners should be liberally interpreted, but we believe that in the past, if we have erred at all, we have erred on the side of too great a liberality.

BISHOP POTTER ON LABOR AND MACHINERY.

The sensational element in the New York daily press has been putting into Bishop Potter's mouth words which he never uttered, the tenor of which would make out the reverend gentleman to be at once an advocate of strikes and strongly opposed to machinery on the ground that its introduction was prejudicial to the interests of the workingman. The offending articles were supposed to be reports of an address delivered at the annual dinner of the Church Association for the Advancement of the Interests of Labor. Bishop Potter has subsequently stated that the comments upon these subjects attributed to him are based wholly upon fictitious statements.

The point that was actually made was that the Church Association for the Advancement of the Interests of Labor should fulfill the office of mediator and conciliator, and it was shown that strikes were often the result of the workingman's sense of his isolation from the sympathy of his fellow men, and especially from the sympathy of those better placed in life than himself. These should strive to understand him, to be just to him, and to encourage him in a willingness to submit his claims to peaceful arbitration.

Bishop Potter denies that he had anything to say, on the whole, of any disadvantages to modern civilization that arise from the introduction of improved machinery. What he did point out was that, as most good things have their evil sides, one of these evils, in the case of machinery, was that it sometimes made a machine of the laborer. The instance quoted was that of a man whom he had watched at work in a factory, whose whole duty consisted of two movements of his hands—one to push a piece of metal under a hammer, the other to stamp it. But while there was nothing in this man's work to stimulate his mind or imagination, the case was not quoted as being typical of mechanical labor in general.

The fallacy of the old cry that labor is being hurt by machinery is plainly evident to the intelligence of the working classes, who have learnt long before this that for every trade that machinery has displaced it creates half a dozen new ones.

THE INVENTOR OF THE AUTOMATIC GUN.

The invention of the automatic gun has been universally attributed to Mr. Maxim for so long a time that it seems a little late in the day for the editor of the Admiralty and Horse Guards Gazette (Eng.) to undertake to prove that the credit of the invention belongs, not to Mr. Maxim, but to somebody else.

It seems that the present attack was prompted by a paper which was read by Mr. Maxim before the Royal United Service Institution on the subject of "Automatic Guns," in the course of which he exhibited his original model, which now forms part of the South Kensington Museum collection, and spoke of it as "the first apparatus ever made on this planet which would load and fire itself." The editor of the Admiralty and Horse Guards Gazette disputed Mr. Maxim's claim, and said that he should have made mention of the weapons invented by such men as Gatling, Gardner and Nordenfolt. Mr. Maxim made the obvious reply that the lecture was confined strictly to automatic guns, and that it would have been out of place to drag in the