Scientistic American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors. PUBLISHED WEEKLY AT

No. 361 BROADWAY, NEW YORK.

O. D. MUNN.

A. E. BEACH.

TERMS FOR THE SCIENTIFIC AMERICAN.

Clubs.—One extra copy of The Scientific American will be supplied same proportionate rate. Postage prepaid.

MUNN & CO., 361 Broadway, corner of Franklin street, New York. 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. Terms of subscription for SUPPLEMENT, \$5.00 a year, postage paid, to subscribers. Single copies, 10 cents. Sold by

all news dealers throughout the country.

Combined Rates. - The Scientific American and Supplement

The safest way to remit is by draft, postal order, or registered letter. Address MUNN & CO., 361 Broadway, corner of Franklin street, New York

Scien ific American Export Edition.

The Scientific American Export Edition is a large and splendid periodical issued once a month. Each number contains about one hundred foreign applications for patents are made, the inventor is payment. large quarto pages, profusely illustrated, embracing: plates and pages of the four preceding weekly issues of the SCHENTIFIC AMERICAN, with its splendid engravings and valuable information: (2.) Commercial, trade, and manufacturing announcements of leading houses Terms for Export Edition, \$5.00 a year, sent prepaid to any part of the world. Single copies 50 cents. (37 Manufacturers and others who desire to secure foreign trade may have large, and handsomely displayed announcements published in this edition at a very moderate cost.

The SCIENTIFIC AMERICAN Export Edition has a large guaranteed circu-ation in all commercial places throughout the world. Address MUNN & lation in all commercial places throughout the world CO., 36i Broadway, corner of Franklin street, New York.

NEW YORK, SATURDAY, MAY 3, 1884.

REMOVAL.

The Scientific American Office is now located at 361 Broadway, cor. Franklin St.

Contents,

marked with an asterisk.) hotog. by*.. 275

(indem area area constant market with an appendent	
Brain, mobility of the	Light, magnesium, photog. by* 275 Locomotive, fast, trip on a 277
Business and personal	Mangapese, its ores
City of Pullman, Ill. *	Marble, manganese in 273
Dam, Croton River, contemplated*211	Microscope, electric, the 276
	Mobility of the brain 280
Electricity: its relation to power 276	Notes and queries282, 283
Elevator, ore, new*	
Fire escape, new. Stevenson's* 274	Patent bil's, Congressional 272
Fruit drying, apparatus for* 275	
Grecian stone cutting. 276	
Greely, Lieut, to the rescue of*. 28t	
Head for barrels, casks, etc.* 274	l'lanets for May, aspects for 273
Improvement, great, little money 281	Plant. mullein, the 276
Inventions, agricultural 282	Pullman Co.'s building, Chicago* 280
Inventions, engineering 282	Saturn
Inventions, index of 283	Suggestion, a good 277
Inventions, mechanical 282	The Milling World says
Inventions, misce laneous 282	water supply of N. Y., to increase 271
Inventor, Ill., to Ill. Senators 277 Inventors, hints to	
inventors, units w	AN OOM' TIENLOOTTIN OI 414

TABLE OF CONTENTS OF

THE SCIENTIFIC AMERICAN SUPPLEMENT No. 435,

For the Week ending May 3, 1884.		
Price 10 cents. For sale by all newsdealers		
I. CHEMISTRY AND METALLURGY.—Improved Carbon Filter.—1 figure	6941	
The Production of Ammonia by the Action of Free Hydrogen on Nitrozenous Compounds.—R. TREVET		
II. ENGINEERING AND MECHANICS.—Dubois and Francois' Machine for Compressing Air.—With full description and numerous illustrations. Improved Crank Pin Machine.—2 illustrations. On the Forging and Finishing of Marine Cranks.—12 figures Improved Ash Hoisting and Discharging Apparatus for Steam	6935 6936	
shlps.—I engraving The Italian Itoyal Yacht Saboya.—An engraving The Tower Spherical Engine.—With description and full page of		
engravings Dreyer, Rosenkranz, and Droop's Water Meter.—3 figures The St. Gothard Railway.—Details.—Cost of operating, etc., for 1882—With engraving.	6939 6940	
Improved Handkerchief Motion for Looms.—Methods of producing borders, etc.—With engraving III. ART.—The Boar Hunter.—By Otto Lang.—An engraving	6941	
IV. BLECTRICITY, ETC.—Silvanus Thompson's Telegraphic Apparatus.—Numerous illustrations		
V. ASTRONOMY AND METEOROLOGY.—Length of Time during which Aerolites are Visible	6948 6949	
VI. GEOLOGY AND MINERALOGY.—The New Bogosloff Volano in Bering Sea.—By J. E. HILGARD	6948	
CHELL Mineral Resources of the United States.—Abstract No. 1.—Coal. —By Albert Williams.		
VII. BOTANY, NATURAL HISTORY, ETC.—The Glasgow Botanic Garden.—With full description of the garden, plant houses, etc.—3 engravings	6946	
The Larch Worm.—With engravings VIII. MEDICINE, HYGIENE. ETC.—Clothing in its Relation to		

Diphtheria.—Cause.—Treatment.....

IX. MISCELLANEOUS .- Crefeld Technical School .- History of the

X. BIOGEAPHY.-Dr. Gustav Jaeger, Professor of Anthropology

foundation of the institution.-Educational resources, etc......

THE INTERNATIONAL PATENT UNION.

A commercial treaty between the United States and sev eral of the prominent European nations is now before the Senate for ratification, which, if adopted with appropriate legislation, will confer valuable privileges upon American inventors, and relieve them from certain annoying difficulties to which they are at present subjected.

The new treaty establishes in effect an international patent union, which provides that the citizens of each nationality who register an application for a patent in their own country shall have the prior right to register a corresponding application, during a period of six months, in all of the countries belonging to the Union, with one additional month Under the existing laws the American patentee is subject to various perplexities.

If he should simultaneously apply for patents at home and in foreign countries, several of the foreign patents would be issued prior to the home patent, owing to the deof the shortest foreign grant. Most of the foreign patents are granted for 14 years, but some of them are granted only for 5 years with privilege of renewal; and thus the American patent becomes reduced to 5 years, as the renewal privilege counts nothing with our law makers. Furthermore, the dates of the foreign patent must be given under oath to thereby debarred from obtaining patents in the principal European countries.

The American patentee is in the habit of meeting some of the difficulties by withholding his applications for foreign patents until after his American patent has been passed upon and allowed by the Washington office; then, before the actual issue of the home patent, he files his applications for foreign patents, taking care, however, that no foreign patent issues until after the American patent comes

If the new treaty is ratified, our patent laws should also be amended so as to sweep away all the above vexations and enable the inventor to obtain and hold foreign patents with out detriment to his home patent.

Eleven States have already signed the Union, namely: France, Belgium, Italy, Spain, Portugal, Switzerland, Netherlands, Servia, Brazil, Guatemala, Salvador. The first four countries are the only ones of present importance—as no patents are granted in Switzerland or Netherlands, and few in Brazil, Guatemala or Salvador-to American inventors. If the treaty is ratified by the Senate, as seems probable, the United States then enters the Union, and we presume Great Britain and Germany will follow.

The treaty applies not only to patents, but to industrial drawings, trade marks, and other industrial property. It contains provisions for the establishment of a sort of clearing house, or international bureau of the Union, which is to be under the charge of the Swiss Government, and which shall have such prerogatives as the members of the Union shall determine.

STATUS OF THE CONGRESSIONAL PATENT BILLS.

We have much pleasure in stating that in the Senate, last week, on motion of Senator McPherson, of New Jersey, the hostile patent bills were all recommitted to the Committee on Patents for further consideration. The motion was adopted without a dissenting voice.

This very gratifying result is due to the prompt and efficient action of the many friends of the patent laws and home industries, who for several weeks past have taken upon themselves, individually, the trouble to send remonstrances to their Senators, in the form of letters and petitions, giving multitudinous and substantial reasons against the passage of the bills. The press, also, has greatly assisted in the enlightenment of members of Congress by presenting in the strongest aspect the advantages of the patent system, and the ruinous results to be expected from the proposed legislation, if carried out.

The great speech of Senator Platt, with its array of statistics and convincing logic, has had a most satisfactory in Another hint, and we have done. Most inventors overestifluence. As it now stands, so far as the Senate is concerned, the matter is indefinitely postponed; and the floods of new light that have been furnished to the members render it doubtful whether any law adverse to the encouragement of industry and invention will be again brought forward during this session.

In the House, so far as we can learn, there has been a decided modification of views on the part of many members. At the outset of the campaign against patents it was a prevailing belief that a great deal of fraud was being carried on in different parts of the country, under cover of the patent laws, whereby many "innocent purchasers" were being victimized; and it appears to have been this belief which gave rise to that sudden impulse of hostile feeling under which the two obnoxious bills were rushed through the House.

Having been for many years in constant, close communication with inventors, patentees, manufacturers, and men of progress in all parts of the country, we felt we could not be mistaken in believing that members of the House had

nocent purchasers" were generally suffering wrongs, to be without real foundation. We invited the members to call out and produce all possible proofs of this suffering among their constitutents; for if it existed it ought to be known and promptly remedied. We asked the people everywhere to write to their members and give the true facts; and if they wanted the patent laws to be nullified to say so.

Many thousands of letters have accordingly been sent to Washington, but we believe they all tell only one story, namely, that the almost unanimous feeling everywhere except in a small part of Indiana, is that nobody is suffering, but everybody is benefited by the patent laws.

In some parts of Indiana, where there is considerable to countries beyond the sea, the United States for example. water underground, the patent drive well is extensively used.

More than 5,000 wells are said to have been put down in one county, on which the patentees have demanded their usual royalty of \$5 a well: users of these wells save from fifty to a hundred dollars per well by means of the patent; lays in the Washington office; and such prior issues would they cannot be hired to stop the use, but still refuse to pay reduce the term of the American patent down to the term the patent fee; and when summoned to appear as infringers, they cry out about fraudulent patents,

Another band of "innocent purchasers" are makers and users of barbed wire fencing, who object to pay a few cents per rod as royalty for a patent fence, that saves them a thousand dollars a mile clear cash for every mile of fencing will be sent for one year postage free, on receipt of seven dollars. Both if the invention is granted abroad before it is issued here, they put up. Members of the House, we believe, are begin-papers to one address or different addresses as desired. ning to find out that the rank and file of suffering innocents our Patent Office and appear in the American patent, other- for whom their sympathies have been invoked consists wise the American patent, it is supposed, is rendered in- only of a lot of infringers, who squeal because they are not valid. Again, if the American patent is granted before the allowed to take the patent properly of other people without

HINTS TO INVENTORS.

It is the close observer, not only of present but future wants, who makes the successful inventor. The world is one huge kaleidoscope, and its views and requirements are ever changing. What is good to-day will prove insufficient to-morrow, hence improvement is but a natural sequence of the present, and he who takes Time by the forelock is the one who wins; nor is this constant change to be wondered at, for the world is progressive, and there is no human device but has some defect, so that the cry is ever for something better or cheaper. There are few inventions in advance of the times, but thousands to meet the wants of the present, and not a few behind the age. These are no idle aphorisms, but genuine truths, and it would be well for inventors generally to remember and profit by them.

There are other things, too, that it would be well to remember. As it is in time of peace that we should prepare for war, so is it during the current season that inventors should provide for the next. Now is the time, as the summer solstice approaches, when improvements suitable for that and the following seasons should be taken in hand, be matured, perfected, and patented. Experiments are necessarv, and these take time, as do also the securing of letters patent and the necessary business arrangements to have all things ready and the supply on hand when the demand comes. For lack of thus moving in time, many an inventor has found himself unprepared to introduce his invention to the public during the season it is adapted to, and had to wait an entire year till the like season comes round again before he could do so, and then it has proved too late, as a superior, or even inferior, but better pushed improvement has got the foothold and superseded it. There are many trades in which the greatest activity prevails during the season in which there are no sales and none expected. Summer prepares for winter, and so should it be with the inventor.

So much for the time when inventions should be made. perfected, and secured. What to invent is the next, or perhaps the first, thing to consider. There are men of such versatile genius that scarcely any subject or device is too hard for them to improve upon, but, as a general rule, those are the most successful who devote their attention to subjects and things more immediately connected with their own calling in life, for they know from experience what are the practical defects of the present state of things and what is actually needed. Thus the farmer is better acquainted with agricultural machines, and the carpenter and machinist with the tools of their trade, and any improvements which such may make, in their own line, are generally meritorious and valuable.

mate the pecuniary value of their inventions. They want too big a price for that which comparatively cost but little, hence they fail to profit by their patents. There are few patents of any merit but will sell at a price and pay a thousand times better than any ordinary investment. True, fortunes have been made out of patents, and fortunes are still being so made, but that is no reason why every inventor should be so liberally rewarded. A fair recompense is

The Fastest Passage.

The new Guion steamship Oregon has just beaten all previous records, her actual time between the two points above mentioned being 6 days 10 hours and 10 minutes. Her best day's run during the voyage was 472 miles, and her poorest 440. Her average was over 450 miles a day, or nearly 19 miles an hour. According to the log of the Oregon, she traveled in all 2,861 miles. This is 100 miles more than was made by the Alaska on her quickest voyage. The days' runs of the Oregon were as follows: April 14, and advocate of the "normal wool clothing."—With portrait...... 6948 been imposed upon; and we declared the statement that "in- 440 miles; 15, 460; 16, 455; 17, 470; 18, 469; and 19, 472.