

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

No. 361 BROADWAY, NEW YORK.

A. E. BEACH.

O. D. MUNN.

TERMS FOR THE SCIENTIFIC AMERICAN.

One copy, six months, postage included...... 160 Clubs.-One extra copy of THE SCIENTIFIC AMERICAN will be supplied gratis for every club of five subscribers at \$3.20 each; additional copies at same proportionaterate. Postage prepaid.

Remit by postal or express money order. Address 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 Combined Rates.-The SCIENTIFIC AMERICAN and SUPPLEMENT

will be sent for one year, postage free, on receipt of seven dollars. Both papers to one address or different addresses as desired.

The safest way to remit is by draft, postal order, express money order, or registered lette

Address MUNN & CO., 361 Broadway, corner of Franklin Street, New York.

Scientific American Export Edition.

The SCIENTIFIC AMERICAN Export Edition is a large and splendid periodical, issued once a month. Each number contains about one hundred large quarto pages, profusely illustrated, embracing : (1.) Most of the plates andpages of the four preceding weekly issues of the SCIENTIFIC AMERI-CAN, 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 circulation in all commercial places throughout the world. Address MUNN & CO., 361 Broadway, corner of Franklin Street, New York.

NEW YORK, SATURDAY, MAY 15, 1886.

Contents,

(Illustrated articles are marked with an asterisk.)

TABLE OF CONTENTS OF

SCIENTIFIC AMERICAN SUPPLEMENT No. 541.

For the Week Ending May 15, 1886.

Price 10 cents. For sale by all newsdealers.

8645

- BIOGRAPHY.—Members of the Royal Colleges of Physicians and Surgeons.—A sketch of its history, founders, and the most eminem members of its present faculty.—If portraits, and a reproduction of Holbein's painting of Henry VIII. presenting a charter to the Col-lege of Surgeons.

STATE INTERFERENCE WITH PATENTS.

ed in the Congress.

For some unexplained reason, the authorities of the ized India rubber. the telegraph, and hundreds of patents that are at variance with the paramount au- this day, would be simply fabulous. thority of the United States. The most recent Indithat the Bell telephone companies have in several of mer days. the cities of the State withdrawn their instruments sufficient to pay them any profit.

inconvenient to the Indiana law givers that they have applied for Congressional relief, and the Hon. Mr. ty-five years. Holman, Representative of the State, has introduced the following curious bill:

"A bill to secure to the public the use of patented inventions.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all persons or corporations, whether owners or licensees of patents granted by the United States, are prohibited from withdrawing any machine or protariff of charges by the Legislature of any State or Terwithout the consent of such Legislature."

This bill adds one more to the various schemes of the original grant. legislation hostile to inventions now before Congress; like the others, let us hope it will suffer defeat.

Indiana has profited vastly, in common with all of the States, from the many new industries and manufactures which inventive genius has created and given the country. The industrial prosperity of the State is largely based upon the wealth which has been brought in to her by the use of new improvements and inventions. If they are to be withdrawn or discouraged, property values must necessarily decline, and manufacturing industries must be removed to more congenial places. With a strange inconsistency, the Indianians, by their own laws, deal themselves injurious blows, and then seek the aid of Congress to avert the resulting mischief.

40+4 THE PROPOSED EXTENSION OF PATENTS.

number of bills that have been brought before the of period of application is proper. present Congress for the practical nullification of patand therefore to be fostered, not attacked, these bills, old patent of greatest merit would be useless on acinventors should be encouraged, not repressed. Hence of novelty judged by the state of the art at the period it is a matter of some interest to find a bill presented of its original date of issue. The scope of the claims on the right way, but not far enough.

The bill applies to all patents ever issued, or issued ---and extended, or reissued, expired or unexpired. On New Process of Manufacturing Car Wheels. application, the Commissioner of Patents is authorized to extend them for an additional period of eight years. At the works of the Dickson Manufacturing Co., in Such extension is not to confer the right to damages Wilkesbarre, a new machine and process, patented by for any infringement committed between the expiration J. J. Carr, has been tested with satisfactory results. of the original patent and its renewal. The interested It is claimed that while on the old method of mouldparty, who may be inventor, or administrator, or exe- ding, casting, dressing, and boring the wheels the avecutor, must prove the value of the invention, and show rage product of three men per day of twelve hours is what profit it yielded such party or parties. Publica- eighteen wheels, with the new process the same numtion in the District papers and elsewhere of the prober of men can turn out one perfect wheel every minposed extension is provided for. Should the patent be ute, or 720 wheels per day. The principal feature seems shown eligible for extension, a total fee of twelve hun- to be the substitution of a steel core for one of sand in dred dollars is to be paid. Two hundred is a prelimin- casting the wheel. This has been tried before, but no aryfee, to be paid before publication; one thousand one had hit upon a means of getting this core out of the wheel after it was cast. This is now accomplished dollars is the final fee, to be paid before issue. by a center key, which falls out upon a single stroke of On its face, as providing for the possible extension of all patents ever granted, this bill might appear the hammer and lets the steel core drop out, leaving the hole in the wheel perfectly true, and ready to be revolutionary. But it is hedged in with so many provisions that this character is to a great extent re- put upon the axle without any dressing or boring. pressed. Thus, the size of the fee required would cut The sand is run into the moulding boxes by a hopper, off many applications. All expired patents that are to and both matrices are moulded and the pattern drawn be renewed under it must have their application filed out by the single revolution of a shaft driven by steam within six months of the date of the passage of the bill. power. The matrices are borne away upon movable This provision would operate in the same way as the platforms to the cupola, and then the piece is cast as high fee. The bill would insure a busy six months under the old process. The moulding is done as rapamong the patent lawyers and in the Patent Office. idly as a revolving disk can carry the boxes under the The amount of applications that would be filed in that 'pressers.

period would exceed all precedent. Many a device, The Supreme Court of the United Statesdecided long duly patented, that yielded the patentee a very poor ago that all State laws for regulating the sale or dispo-return for his ingenuity, has now, as the basis of imsition of patented inventions were unconstitutional provements, mounted into great importance. Many and void, for the reason that the exclusive authority of the early patents covering the modern straw cutter, in such matters is by the Constitution exclusively vest- the plow, washing machine, churn, sewing machine, mower and reaper, the planing machine, the vulcan-

State of Indiana have for years treated the Supreme other great inventions, would certainly claim the new Court decisions with contempt, and there are to-day lease of life. The amount of revenue to be derived among the Indiana statutes several laws relating to from some of these patents, if revived and extended at

Not only would this bill benefit some of the early anian effort in this line is the new State law that regu- inventors. The patent lawyers in the new infringelates the price at which patented telephones may be ment suits which it would occasion would reap a rich sold. The law specifies that no telephone company harvest. The circuit courts would have more of their shall charge more than \$3 a month for use of same; time than ever devoted to patent cases. It would be thus taking entirely away from the patentee all voice interesting to see how the old patents would now be in or control of his invention. The validity of this law treated when they reached the Supreme Court. There has been sustained by the highest tribunal of the State would be a probability of more rigid construction of Indiana, and is now in force there. The result is being awarded their claims than they received in for-

The limited time within which application under from use, as the amount allowed by the local lawis not this bill is to be made would prevent many extensions. But all unexpired paying patents would certainly be This action of the telephone company has proved so extended under it if allowed. In other words, the terms of many important patents would be extended to twen-

In this there would seem little objection. The award of a patent right is by the best authorities considered a bonus from the Government. Property in ideas has never been recognized. All protection accorded them is considered artificial, and in the nature of a monopoly. The term of a patent is the measure of the bonus. Otherwise, as a matter of simple justice, patents should be awarded for all time, and the Patent Office would become a simple office of registry. A twentycess from public use because of any regulation of the five years' term would not from this standpoint seem too great a reward, especially when it is remembered ritory wherein such machine or process is being used, that the last eight years would be conditional on an insufficient return having been yielded by the term of

> The bill has a great deal of good in it. Any provision for the indiscriminate extension of all expired patents would be so revolutionary as to deserve opposition. But the present bill has so many limitations that it would not seem destined to do any harm in this regard. Indeed, it may be considered to err in the other direction.

> If expired patents are only to have a limited time for securing their extension, six months does not seem enough. The amount of the fee is quite disproportionate to the prevailing rates of the Office. These two features give the bill a disagreeable aspect, as, to say the least, they suggest the possibility of its being presented in the interest of some particular corporation or patentee.

The one and only restriction needed is contained in the provision that the applicant must show that he has been insufficiently rewarded for his work. This prop-We have already given a summary statement of a erly acted on would suffice. No high fee or restriction

In such a bill as this, it would be well to insert some ents. As patents are a source of wealth to the country, special clause relating to extension of claims. Manyan in their objects, deserve condemnation. Whether an count of its restricted claims. If justice dictated the invention be regarded as a property per se, or as only extension of a patent, the same quality would suggest acquiring that status after patenting, the simple the propriety of seeing that its claims were made to material interest of the Government requires that cover the essential features of the device, and its points (H. R. 4,034) that on its face at least seems designed to might justly be determined in the extension proceedprotect, not assail, the inventor. In this sense it is a ings. The present treatment of expanded claims of redecided novelty; but it only goes a certain distance issues by the Supreme Court is a subject of general criticism among patent lawyers.

304

tution of EngineersA chronological account of the various in-	
ventors who, with Stephenson, worked out the problem of steam	0000
locomotion.—A paper of much historical value	8630
signed by Mr. Shillito for the special purpose of use on shipboard	
and in tropical countries.—1 figure	8642
VI. FORESTRY Draining for Plantations A cheap and efficient	
method of drainage in preparing ground for forests or orchards	
1 figure	8645
VII. HYGIENE AND MEDICINEHydrophobia and Cedron Seed.	
-A denial of the efficiency of the cedron seed in the treatment of	6630
hydrophobia Treatment of Carbuncle without Incision.—Dr. Wilkinson's	0000
method of injecting carbolic acid, and the success with which it	
has met. Remarks on the Aeration of Water.—By CHAS. B. BRUSH, C. E.—	8639
The method of destroying organic matter in storage reservoirs by	
the oxidizing action of currents of air, as practiced at Philadelphia	
and Hoboken	8641
VIII. MINES AND METALLURGYHoisting CablesThose used in	
the deep mines of the Umted States and particularly on the famous Comstock lode in Nevada.—The substitution of steel for iron	6620
IX .MISCELLANEOUS.—Tale of the "Stevens Battery"	8639
X. NATURAL HISTORYMarcgraavia ParadoxaAn illustration	0010
showing its two stages of growth	0040
XI. PHOTOGRAPHY.—Apparatus for Preparing Gelatine Argentic- Bromide Emulsions and for Coating and Drying Plates.—By HENRY	
LONDON, -A full description of the different steps in preparing	
the emulsion; the heatin gapparatus; the method of mixing the so-	
lutions, washing the emulsion, and performing the different opera-	
tions of filtering, pressing, etc.—The manner of coating the plates and drying them for use.—Final suggestions and recipes for devel- opers.—I5 figures.	
opers.—15 figures	8642
XII. TECHNOLOGY Tar Pavement Directions for its manufac-	
ture and application	8644