# 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.

One copy, six months postage included ...... 1 60

Chubs.—One extra copy of THE SCIENTIFIC AMBRICAN will be supplied grais for every club of five subscribers at \$3.20 each; additional copsame proportionate rate. Postage prepaid. Remit by postal 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, 19 cents. Sold by all news dealers throughout the country.

Combined Rates. - The Scientific American and Supplement will be sent for one year postage free. on receipt of seven dollars. Roth papers to one address or different addresses as desired.

The sufest way to remit is by draft, postal order, or registered letter.

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 and pages of the four preceding weekly issues of the SCHNTFFIC 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. to secure foreign trade may have large, and handsomely displayed an nouncements published in this edition at a very moderate cost.

The SCIENTIFIC AMERICAN Export Edition has a large guaranteed circu-Address MUNN & lation in all commercial places throughout the world. CO., 361 Broadway, corner of Franklin street, New York

NEW YORK, SATURDAY, AUGUST 9, 1884.

# REMOVAL.

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

## Contents.

## (Illustrated articles are marked with an asterisk.)

Acids, bile, source of	Т
A nomalies of sew, mach, business 80	П
Bricks, about 82	П
Bronze, Tucker 84	П
Business and personal	П
Canal, Panama the	П
Cement to connect glass and brass 86	П
Chisels, cold, forms of 81	П
Cholera	П
Cholera	П
Cholera, navice about	П
Clock in Trinity's tower. the 82	П
Collodiographic, pro., Henocque's 86	П
Corn planter, check row* 82	
Curbstone and teleg. wire conduit*83	П
Dickson, Thomas, death of 81	П
Doorway of furnaces, the 82	П
Electric light patents 86	П
Engine house, interior view* 79	П
Friegran Cant the venerable 81	П
Fire escape, Jensen's* 84	П
Fire escape. Jensen's*	П
Fluxes, welding 85	П
Fluxes, welding	П
Germ-ane	П
Glass bearings 82	П
Gunboats, stern-wheel. French* 87	ш
Hydrophobia experi., Pasteur's 89	Ι.
Inventions, agricultural	П
Inventions, engineering 91	П
Inventions, engineering	Ι.
Inventions, mechanical	П
Inventions. miscellaneous 91	1
Inventor, a lucky	1
Lapan University, Am. models for 90	1.
Labels as subjects of copyright 80	1

Lathe feeds.
Laundry, the, facts about.
Light, gas, new.
Manure loader, Davis\*
Maps, relievo, manufacture of.
Money in Treas, awaiting owners.
Muscular contraction after death
Muskrat, the
Notes and queries
Now is the time.
Fanama canal, the
Fana Saw works, Emerson, fire at.

screw, perfect, the...

Screw press, improved frictions.

Sponges, bleaching.

Steamer, wur. Riachuelo.

Stern wheel boats, news.

Steen made and reworked.

Fea, rolling and curing.

Fidal wave. a wide reach of.

Fin plates, how made. in plates, how made..... race fastener. Lindsay's\*... 

TABLE OF CONTENTS OF

# THE SCIENTIFIC AMERICAN SUPPLEMENT

No. 449,

For the Week ending August 9, 1884.

Price 10 cents. For sale by all newsdealers.

P	PAGE	ı
I. CHEMISTRY AND METALLUR(+Y.—The Iridium Industry.—By WM. L. DUDLEY.—Where and how the metal is found.—Its properties.—Mr. Holland's method of working the metal.—Uses	7159 7161 7162 7163 7163	
II ENGINEERING AND MECHANICS.—Chimney Climbing.—The old kite-flying method.—The new method.—With engraving	7165 7166 7166 7166 7167 7167	
III. TECHNOLOGY.—A New French Steam Brewery.—With engraving.  Photos in Ink  How to Make Photo Printing Blocks.  New Bleaching Process.  Fermentation of Indigo Vats.	7169 7160 7160	
IV. ELECTRICITY, MAGNETISM, ETC.—Minchin's Absolute Sinus Electrometers.—2 engravings. Dr. Kohlrausch's Apparatus for Magnetic and Electric Measure- ments.—8 engravings. Lippmann's Mercurial Galvanometer.—5 engravings.	7168	
V. ARCHITECTURE.—Cork Cathedral.—With full page engraving	7164	
VI. NATURAL HISTORY.—The Burrowing Cray Fish	7174	۰
VII. MEDICINE, HYGIENE, ETC.—National Health and Work.— Address by Sir James Paget at the international Health Exhibition.—What constitutes a healthy nation.—Average annual rates of sickness.—Annual loss of work in England and Wales.—Can this be prevented?—The essential bond between health and education.  Pasteur's Researches on Rabies.—With 7 engravings	7170 7172	
diseases.—By Dr. A. B. GRIFFITHS  VIII. MISCELLANEOUS.—Plague of Locusts in Yucatan.—By ALICE D. LE PLONGEON.  Prehistoric Man in Egypt and Syria	7174	

#### LABELS AS SUBJECTS OF COPYRIGHT.

The Commissioner of Patents in insisting of his power to rule as to labels and trade-marks, deciding whether the matter for registration is one or the other, seems to consider that both are the subjects of the same or parallel statutes. He acts as if it were his office to divide all marks of designation into two classes, according to some special classification called for by law. On inspection of the statutes no such standing in the United States courts from enactments under the eighth section of the Constitution of the United States. We give that part which they are referred to: "Sec. 8. Congress shall have power . . . to regulate commerce with foreign nations, and among the several States and with the Indian tribes." The trade-mark act of March 3, 1881, confines its protection to "owners of trade-marks used in commerce with foreign nations or with the Indian tribes." This restriction was inserted to make the act constitutional, as the old act of 1870 had been declared invalid. As it stands it is the authority for the registration of trade-marks in the Pa- sewing-machine patents expired, as is well known, in 1876, tent Office, and has nothing to do with labels.

The law on the subject of trade-marks is very well defined, and is illustrated by many important decisions. Thus the characteristics of a trade-mark are fixed. It must be nondescriptive and arbitrary; otherwise the statute will not apply. The Commissioner of Patents, following the numerous decisions of the courts, exacts this feature before admitting any mark to this kind of registration. He acts properly in doing this, as he is guided by and follows the decisions of the judges of the highest courts.

The status of labels is widely different; they are protected as subjects of copyright. Another clause of the same eighth section of the Constitution authorizes the different copyright acts. We quote as before the part relating to this subject: "Sec. 8. The Congress shall have power . , to promote the progress of science and useful arts by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries." For many years it had been the practice for registrants of | did not want the new makes on any conditions; wherat they labels to register them with the Librarian of Congress, the plucked up their courage. proper officer, under the old copyright acts. By the act of June 18, 1874, it was provided that ". . . prints or labels to turn out a finished, efficient, and durable sewing-machine. designed to be used for any other articles of manufacture" (than pictorial illustrations or works connected with the whose confidence subsequent events proved that they posfine arts) ". . . may be registered in the Patent Office."

It seems as if there were room for much doubt as to whether this act is constitutional. It appears doubtful if a mere label should be protected under a clause of the Constitution designed to secure to authors "the right to their respective writings." The inscriber of his own name upon a box of matches would hardly be an author in the sense of the for a dollar what had cost them one hundred cents. Constitution, and a designating label could not well be conthe Commissioner has nothing to do with the constitutionality or the reverse of these acts.

power to decide that anything presented for registration was a trade-mark. He had to accept everything that was offered, and could not consider the arbitrary or fanciful nature of a label a bar to its registration. The powers of the Commission- have adopted a certain type of sewing-machine cannot, it er of Patents in the matter of labels are inherited from the Librarian of Congress under the act of 1874. It seems perfectly clear, therefore, that he exceeds his power in refusing to register anything in the shape of a label because it may be also a trade-mark.

A less technical view may be taken of the case. Leaving aside all court decisions, it is perfectly clear that anything affixed to an article to designate or distinguish it is a label. A trade-mark is defined by law, but a label is not. The Patent Office in its use of Webster's definition of a label as their standard acknowledges this as far as the label is concerned. No technical limitation has been placed on it. It stands as a comprehensive term, including many subdivisions, and among them that of trade-marks. Thus, while anything registrable as a trade-mark should be registrable as a label, the reverse does not hold. The greater includes the less, and the label includes the trade-mark.

For a most clear and interesting statement of the case, we refer our readers to the decision in Willcox & Gibbs S. M. Co. versus E. M. Marble, given by the Supreme Court of the appear. His predecessor bowed to it, and changed the prac- confidence of a large and growing constituency. tice of the office to conform thereto.

# NOW IS THE TIME.

a prominent manufacturer of tools and machines a short time ago. "We are making to lay up a stock," he said, "and are keeping our men on the prospects of future sales, instead of paying them from the profits of contracts already made." This company could afford to pay hands and store up a stock of finished work, as it had done before; but the manufacturer chose rather to sell at a low price than to pay insurance and the expense of the unavoidable deterioration of finished goods kept in stock. Lower prices and better terms—where terms are offered—can be obtained now than at any time within two or three years. Most men engaged

tools can anticipate their ordinary needs for a twelvemonth hence, and so can make their preparations for the reflux tide of demand that is as certain to come as is the spring to succeed to winter. Every period of depression in business has been followed by a corresponding uprising, and there is no valid reason for believing that this present season of quietude is to sink into one of stagnation. At all events, a business, to live at all, must have the means, and there apstate of things can be found to exist. Trade-marks derive their pear to be good reasons for advising the purchasing or the contracting for of machine tools and manufacturing machinery now, while in those branches of business there is a temporary lull.

### ANOMALIES OF THE SEWING-MACHINE BUSINESS.

IT was John Stuart Mill, we believe, who established the principle that public confidence could neither be stemmed nor directed by statute, and, perhaps, there has rarely been so apt an illustration of this as is to be had in the experience of the original sewing-machine companies. The original and long before that time preparations were afoot to take advantage of the principle, now become common property. Capitalists invested their money freely, great factories were erected, and doubtless many had already figured out their prospective profits for the year when the time to begin the work of manufacturing was at hand and the great struggle began.

There is reason to believe that the original patentees were not a little frightened at the prospect. Indeed, in certain quarters "stampede" would more accurately describe the condition of affairs when the market became "flooded" with sewing-machines, and prices fell to a point at which there was little or no profit, with a premonition that thereafter sewing-machines were to be given away.

This state of affairs had not, however, long continued before the original companies discovered that they were selling about as many machines as before their patents expired, and that, better still, there was a numerous class that

The fact is, these companies had for years been striving They would seem to have dealt fairly with their patrons, sessed. These patrons became accustomed to the mechanism of a certain kind of sewing machine, and they would have no other. Furthermore, they unconsciously acted as agents for their favorite machine among their friends and acquaintances. All this and more theold companies learned, and, like sensible business men, they no longer tried to sell

Do what they would, the new companies, though, no sidered a writing in the same sense. Much might be said on doubt, in some cases turning out an excellent machine, this point. Yet by statute such protection is accorded, and could not get a foothold in the market, and one by one became bankrupt or went out of business. The fact is, this sewing-machine business is phenomenal, and has character-The Librarian of Congress had under the old practice no istics which, there is reason to believe, do not obtain elsewhere. As the wandering tribes of equatorial Africa take with them their own idols, nor can be persuaded to worship other gods, though shown to be more potent, so those who seems, easily weaned from their choice.

So too in the matter of ornamentation; the type of machine being once decided upon, the purchaser is credited with a disposition to put up with nothing less than all the other exterior arrangements for convenience, and it is stated upon good authority, that a certain class of machines being once fitted with a movable top and three drawers, no patroness, however poor, will thereafter, whatever the extra cost, be contented without them.

A psychological fact, possibly new, which has come to light in this sewing-machine business is that a woman will rather pay \$50 for a machine in monthly installments of five dollars than \$25 outright, although able to do so.

The curious processes of reasoning by which the feminine mind is led to regard the lapse of time as a cheapener and a hundred per cent, interest as of no consequence, have not yet, we believe, been discovered,

Seriously, the principal original or parent companies are yearly increasing their sales and realizing a fair profit without any patent rights save these pertaining to certain recent District of Columbia. Although decided on November 30, improvements. Nine of the newer companies have gone out 1881, it was not published in the Official Gazette of the Pa-jof business since 1877, and of the forty remaining not a few tent Office until Oct. 17, 1882. The present Commissioner, exist in little else but the name; the field being monopolized for some reason, refuses to abide by this decision. What by the old established ones or those which, long before the precedent he has for disregarding such an authority does not expiration of the sewing-machine patents, had secured the

This being the case, it may not, perhaps, prove uninteresting to review the sewing-machine field. Elias Howe's sewing-machine, though by no means the first made or used "Now is the time to invest in tools and machinery," said either here or in Europe, was patented in 1846; A. B. Wilson's, 1848; I. M. Singer's, 1851; Grover and Baker's, 1851; the Weed, Finkle & Lyon and Parham, 1854; the Florence, 1855. From 1857 to the present day there have been only a few really new type machines patented, the principal ones being the Willcox & Gibbs, the Empire, the Ætna, the Domestic, and the Victor. In all, since 1846 over two thousand patents have been issued on sewing-machines and their different parts and on sewing-machine attachments.

The machines are best classed by the kind of stitch pro duced. Four-fifths of all the machines now made use the lock-stitch; according to the last census, there are in the in business requiring manufacturing machinery or machine United States to-day 106 sewing-machine establishments,