

## "AMERICA'S SUMMER RESORTS"

This is one of the most complete publications of its kind, and will assist those who are wondering where they will go to spend their vacation this summer.

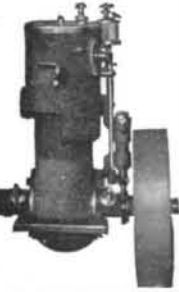
It contains a valuable map, in addition to much interesting information regarding resorts on or reached by the

### NEW YORK CENTRAL LINES

A copy will be sent free, postpaid, to any address on receipt of a two-cent stamp, by George H. Daniels, General Passenger Agent, New York Central & Hudson River Railroad, Grand Central Station, New York.

### MAXIMUM POWER—MINIMUM COST.

If you use a pump for beer, lard, acids, starch, petroleum, brewer's mash, tanner's liquor, cottonseed oil or fluids, hot or cold, thick or thin you want to get the **TABER ROTARY PUMP** which does the most work at the least expense. Simply constructed. Can be run at any desired speed. Perfectly durable. All parts are interchangeable. Needs no skilled workman. Defects guaranteed. Catalogue free. **TABER PUMP CO., 32 Wells St., Buffalo, N.Y., U. S. A.**



### TRUSCOTT MARINE MOTORS.

The simplest, most powerful, and highest speed gasoline engines of their class upon the market. Made single, double, and triple cylinder, both two and four cycle, ranging from 1 to 40 H. P. Catalogue for the asking.

**Truscott Boat Mfg. Co., ST. JOSEPH, MICH.**

**JUST \$1** buys best bell outfit built. Easy to put up and an up-to-date convenience. We sell Bells, 32c; dry batteries, 15c; push buttons, 7c; insulated wire, 30c lb.; lamps, 35c. Write for price list. **LIBERTY ELECTRICAL SUPPLY CO., 136 Liberty St., New York**

**"WOLVERINE"** Gas and Gasoline Engines STATIONARY AND MARINE. The "Wolverine" is the only reversible Marine Gas Engine on the market. It is the lightest engine for its power. Requires no licensed engineer. **WOLVERINE MOTOR WORKS, 19 Huron Street, Grand Rapids, Mich.**

**GASOLINE ENGINES** Marine & Stationary from 1-4 to 16 H. P. A thoroughly satisfactory engine at a moderate price. Write for catalogue. **THE CLIFTON MOTOR WORKS, 233 E. Clifton Ave., Cincinnati, O.**

**IS YOUR BACK WORTH \$1.50?** Our Trimmer gets along walks and curbing and around flower-beds and shrubs, where the lawn-mower won't cut. Will you do it in the old back-breaking way with shears and scissors? No! Use the **"Canton" Lawn Trimmer**. It cuts quickly and easily, and if your time is worth anything you can't afford to do without it. **Only Costs \$1.50** It's the best yet; push it along, work the lever, and watch the grass fly. **THE CANTON CO., 1220 E. Fourth St., CANTON, - OHIO.**

**50 YEARS' EXPERIENCE**

# PATENTS

TRADE MARKS  
DESIGNS  
COPYRIGHTS & C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the

## Scientific American.

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newsdealers.

**MUNN & Co., 361 Broadway, New York**  
Branch Office, 635 F St. Washington, D. C.

"Anglo-Egyptian," for cigarettes, D. J. Vlasto	9,386
"Baby Ease," for medicine, T. P. Marshall	9,390
"Dr. Murre's Iron-Nerve Pills," for medicine, Altine Chemical Co.	9,389
"Eat-a-Biscuit," for cereal food, Grocers' Specialty Co.	9,387
"El Dime," for cigars, A. Gutierrez Co.	9,384
"Hatch's Biscuit," for biscuits, Bangor Biscuit Company	9,388
"La Cintillo," for cigars, A. C. Henschel & Co.	9,385
"Olympia Shoe Co.," for shoes, W. Edelstein	9,392
"Roycroft Liniment," for liniment, M. R. Stuart	9,391
"The Electric Dyspeptic Pad," for therapeutic apparatus, Electric Dyspeptic Pad Co.	9,395

### PRINTS.

"A Cool Bearing," for frictionless bearing metal, Frictionless Metal Co.	551
"Best on Earth," for frictionless metal, Frictionless Metal Co.	552
"Wine that Maketh Glad the Heart of Man," for champagne, G. Rutledge.	550

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, provided the name and number of the patent desired, and the date be given. Address Munn & Co., 361 Broadway, New York.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list. For terms and further particulars address Munn & Co., 361 Broadway, New York.

### NEW BOOKS ETC.

We have received from the University of Colorado the first number of a new publication entitled "University of Colorado Studies." This first number, at least, is equal to any of the scientific publications issued by the universities in the East. It has the additional merit of covering a very wide field. In this first number, for example, are articles on electricity, chemistry, mathematics, celestial mechanics, metaphysics and psychology—surely a range of subjects not often found in one publication. We wish the "Studies" all possible success.

**CHEMICAL SOCIETIES OF THE NINETEENTH CENTURY.** By Henry Carrington Bolton. Washington, D. C.: Published by the Smithsonian Institution. 1902. 8vo. Pp. 15.

Dr. Bolton has supplemented his Bibliography of Chemistry by a complete list of chemical societies of the nineteenth century, in which are listed practically all organizations of importance, devoted to chemical work.

**THE CAR MOTOR. ITS NATURE, USE, AND MANAGEMENT.** By Sir Henry Thompson, Bart. London and New York: Frederick Warne & Co. 1902. 110 pp., 3 illustrations. Price \$1.

The distinguished author of this little volume has written it from practical experience with his own automobile, a  $6\frac{1}{2}$  horse power Daimler. The book forms an excellent elementary handbook of convenient pocket size, containing considerable desirable information from an owner who has had experience in driving a gasoline carriage. The rights of the automobilist on the road, and the methods pursued by the English constables in catching "scorchers" are thoroughly discussed, while an appendix of routes within 400 miles of London is by no means the least valuable feature. Considerable matter of legal interest will be found in this small volume, besides the concise instructions mentioned as to driving the different kinds of motor car.

**A BIBLIOGRAPHY OF THE ANALYTICAL CHEMISTRY OF MANGANESE. 1785-1900.** By Henry P. Talbot and John W. Brown. Washington: Published by the Smithsonian Institution. 1902. 8vo. Pp. vi-124.

A fitting supplement to Dr. Bolton's Bibliography of Chemistry is this latest addition to the Smithsonian miscellaneous publications. Messrs. Talbot and Brown have reviewed Dr. Bolton's work and selected that portion of the bibliography bearing upon the qualitative detection and quantitative separation and determination of manganese for the use of analytical chemists. From the year 1830 on, however, the authors' work has been entirely independent.

**PLATTNER'S MANUAL OF QUALITATIVE AND QUANTITATIVE ANALYSIS WITH THE BLOWPIPE.** Translated by Henry B. Cornwall, E.M., Ph.D., assisted by John H. Caswell, A.M. Eighth edition, revised after the sixth German edition by Prof. Friedrich Kolbeck, New York: D. Van Nostrand Company. 1902. 8vo. Pp. xi-463. Price \$4 net.

There probably has never been a better book prepared on the subject of blowpipe analysis than C. F. Plattner's admirable manual. The present edition, which is the eighth American edition, should be welcomed by students for the reason that it has been thoroughly revised after the latest German edition, thus bringing the book well up-to-date. The adoption of modern chemical notation and the omission of superfluous or antiquated tests considerably improve the work. Spectroscopic methods which properly do not belong in a book of this character are also omitted. Dr. Kolbeck, to whom the last German edition is due, was assistant to Dr. Richter, the unsurpassed master of blowpipe analysis and editor of the early Plattner editions.

## PERFORATED METALS

OF EVERY DESCRIPTION AND FOR ALL USES.  
**HARRINGTON & KING PERFORATING CO.**  
225 N. UNION ST. CHICAGO, ILL. U.S.A.



### THE FRANKLIN DYNAMO

50 Watts, 10 Volts, 5 Amperes  
3,000 to 4,000 revolutions. Sets of materials, finished parts, complete machines. For amateur construction—very efficient. Will drive a dental engine, sewing machine or small lathe; run as a generator, will furnish current for six 6-candle lamps. Parts, \$3.50, \$5.00, \$8.50. Complete, \$12.50. Write for circular 9.

Parsell & Weed, 129-131 W. 31st St., N.Y.



**IROQUOIS MACHINE COMPANY**  
Manufacture under patents  
Improved Universal, Plain, Disc, Face  
**GRINDING MACHINES**  
WIRE DRAWING MACHINERY  
150 Nassau Street, NEW YORK, U. S. A.



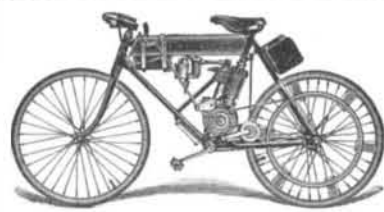
### QUIET RUNNING

is only ONE of the advantages to be gained by using

### New Process Pinions

instead of metal pinions. Our catalogue will tell you others. Write for it. We also make Metal Gears.

THE NEW PROCESS RAWHIDE CO., - Syracuse, N. Y.



### THE NEW MARSH MOTOR CYCLE

Model 1902. Price \$175.

A Gasoline Motor made with crank-disk, shaft in one piece, extra strong bearings, exhaust valve mechanism entirely within base, perfect lubrication, secured against dust, carburetor of the float-feed type which has reached the greatest perfection. This Motor Cycle is the latest acquisition in the art. Made of the best material, simple and perfect in every detail. Constructed by high skilled experts in every department and is without a peer. Full descriptive circular on application.  
**MOTOR CYCLE MANUFACTURING CO., Brockton, Mass., U.S.A.**



Suitable for your handwriting from a sample card of 12 leading numbers for correspondence, sent postpaid on receipt of 6 cents in stamps.

### SPENCERIAN PEN CO.

349 Broadway, New York.

## SELECT A PEN



### Apple Economical Gas Engine Igniters

Are positively the best built for Stationary, Automobile and Marine Gas Engines, either touch or jump spark system. We are the leaders in the manufacture of Igniting Dynamos, Magneto, Governors, Coils, Plugs, etc. Write for printed matter. **The Dayton Electrical Mfg. Company, No. 30 South St. Clair St., Dayton, Ohio, U. S. A.** New York stock carried by Chas. E. Miller, 97 Rade Street, N. Y.; Philadelphia Office, The Bourse; Chicago Office, 19-21 La Salle Street. St. Louis stock carried by A. L. Dyke, Linmar Building.

### A GOOD INVESTMENT

For \$1.75 we will send by express (not prepaid), complete N. D. Outfit with full instructions for learning **TELEGRAPH OPERATING**. A fascinating study that will enable you to earn good wages. Send 25 cents for universal dating stamp, by mail, postpaid. Send for our catalogue. Established 1879.

J. H. BUNNELL & Co., Inc., 20 Park Place, New York.

### Every Mechanic Should Own It.

Montgomery & Co.'s Tool Catalogue which is thoroughly up-to-date. 704 pages and disquot sheet. Sent by mail for 25 cents.

**MONTGOMERY & Co., 105 Fulton St., New York City.**



### FOR GUNSMITHS, TOOL MAKERS, EXPERIMENTAL & REPAIR WORK, ETC.

From 9-in. to 13-in. swing. Arranged for Steam or Foot Power, Velociped or Stand-up Treadle. Send for Catalogue.

**W. F. & J. O. BARNES CO.**  
Established 1872.  
1999 Ruby St., ROCKFORD, ILL.

**FLY PAPERS. — FORMULAS FOR** Sticky Fly Papers are contained in **SCIENTIFIC AMERICAN SUPPLEMENT Nos. 1057 and 1324**. Each issue contains several recipes. Price 10 cents each, from this office, and from all newsdealers.

### The Best Thing on Wheels

ALL ROADS ARE ALIKE TO

## The OLDSMOBILE

**RUNS EVERYWHERE**

Nothing to Watch but the Road Ahead.

Our new red catalog illustrates and describes it in detail.

**THE PRICE IS RIGHT**

**OLDS MOTOR WORKS, DETROIT, MICH.**



### USE GRINDSTONES?

If so we can supply you. All sizes mounted and unmounted, always kept in stock. Remember, we make a specialty of selecting stones for all special purposes. Ask for catalogue.

**The CLEVELAND STONE CO.**  
2d Floor, Wilshire, Cleveland, O.



The STANDARD blue print paper of the world—not the ordinary kind, but a perfect paper for photographic work, perfectly made and perfectly packed in sealed tubes. The delight of the professional and amateur PHOTOGRAPHERS. There is no better, it is the best. A postal card will bring full information of French Satin Jr. and our other photographic specialties.

**THE J. C. MILLEN, M. D., PHOTOGRAPHIC CHEMICAL CO., Denver, Colo.**

### THE NEW MARSH MOTOR CYCLE

Model 1902. Price \$175.

A Gasoline Motor made with crank-disk, shaft in one piece, extra strong bearings, exhaust valve mechanism entirely within base, perfect lubrication, secured against dust, carburetor of the float-feed type which has reached the greatest perfection. This Motor Cycle is the latest acquisition in the art. Made of the best material, simple and perfect in every detail. Constructed by high skilled experts in every department and is without a peer. Full descriptive circular on application.  
**MOTOR CYCLE MANUFACTURING CO., Brockton, Mass., U.S.A.**

## SELECT A PEN



**"BENEDIOT-NICKEL"** Seamless Tubing. Dense; tough; highly non-corrosive; "white metal clear through." **Benedict & Burnham Mfg. Co., Waterbury, Conn. New York, 353 Broadway, Boston, 172 High St.**

### BURNISHINE

The most marvelous metal polish in the world.

Contains no Acids or anything injurious to the Metal or Hands. Produces a wonderful brilliant lustre on Brass, Copper, Tin, Zinc, Silver, Nickel and all Metals. A few rubs and the article is handsomely burnished. Will not soil the hands or leave deposits in corners or surface of the metal. Will restore burnt or rusty Nickel on Stoves to its original lustre. Put up in cans at prices as follows:  $\frac{1}{4}$  Pint, 25c; 1 Pint, 40c; 1 Quart, 60c. If your dealer does not keep it write direct to **J. C. PAUL & CO., 59 Dearborn St., Chicago.**

12-inch Pipe cut off and Threaded with ease by one man and a

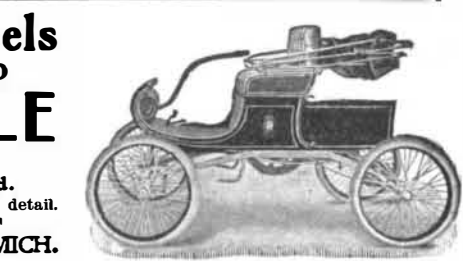
### FORBES PATENT DIE STOCK

Smaller sizes proportionately easy. Send for Catalogue. **THE CURTIS & CURTIS CO., 6 Garden St., Bridgeport Conn.**

Price \$15.

### GAS ENGINE IGNITERS

for Marine, Stationary and Automobile engines. Will save their cost many times over in one year. Write for circulars. **The Carlisle & Finch Co., 233 E. Clifton Ave., Cincinnati, O.**



# What Do You Want To Buy?

We can tell you where to buy anything you want. Write us for the addresses of manufacturers in ANY line of business. Novelties, Special Tools, Machinery, Equipments, New Patent LABOR SAVING DEVICES. **MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, 361 BROADWAY, NEW YORK.**