140	
Sash fastener, F. Dudley	283,865
Saw handle, J. N. Dudley Sawmil, band, A. Smith.	283,221
Saw plate and inserted saw tooth, J. J. Bowen Saws. bevel attachment for hand, E. Andrews	
Scaffold or mortar board, builder's, S. Dale Scraper, leveler, and ditching machine, combined	283,214
dirt, J. Johnson	
Secondary battery, E. T. Starr	283,295
Sewing machine, bag, 11. P. Garland	
Sewing machine crank, L. C. Mason	283,056
Sheet metal box, E. J. Hauck	
Shoe, E. L. Sprague	283,035
Shovel. C. K. Edwards	283,194
Side spring, C. R. Wilson Sign, M. D. Jones	283 052 283,115
Signal. See Railway signal. Skylight, J. Ehrhardt	283,332
Siate, school, J. Meder	283,325
Sleigh, G. W. Dearborn Snap hook, J. Gibbons	
Snow plow, L. Morgan Soda water apparatus, portable, Bailey & Griffen	283,011 283,060
Speaking tubes, electrical indicator for, J. Capron Speculum, anal, A. B. Botsford	283,073
Spinning fibers, machine for, S. Tweedale Spout and strainer, J. Cochran	283.045
Spring. See Side spring. Vehicle bolster spring. Spring equalizer, platform, J. Elfrink	
Steel, manufacturing crucible cast, J. Reese Stirrup, B. F. Williamson	283,141
Stone, manufacture of artificial, S. Ravenel Stopper. See Bottle stopper.	
Store service apparatus, H. H. Hayden 283,104,	
Store service system, G. R. Elliott Stove, cooking, Halloway & Griswold	283,244
Strap. See Overshoe strap. Switch and signal levers, electric locking mech-	000 000
anism for, O. Gassett Table. See Folding table. Operating table.	
Tablet and tablet cover, R. McCurdy Tag attaching device, J. W. Tuttle	283,169
Tag holders, machine for forming. G. II. Scharf Tea kettle, C. J. Schoening	
Telegraph lines, ground wire clamp for, H. W. Pope	283,140
Telephone, C. Egan Telephone central office apparatus, L. B. Firman	
Telephone lines, spring jack and circuit for through, C. H. Wilson	283,312
Telephone local call instrument, W. Nichols Telephone, speaking, F. Blake Jr	283,354
Telephone transmitter W. C. Lockwood Tethering device, animal, W. Heaton	282,123
Thill coupling, W. Williams	282,951
Thrashing machine, S. Coats Tie. See Railway tie. Railway cross-tie.	283,206
Tin from tin scrap by electricity, removing, J. L.	- 1
Delaplaine et &l	283,071 283,164
Tongue support D. C. Ballard	283,188 282,908
Toy house, J. L. Dorin	282,965 283,260
Trace coupling, J. M. Basinger Traction engine, R. S. Angell	283,3 2 0 282,944
Traction engine, R. S. Angell	282,959
Tray, table, N. D. Swift	
Tube. See Wick tube. Tuyere for blast furnaces, G. Hilgenstock	283,107
Type distributing apparatus, Johnson & Low Upholstery purposes, fiber for, J. G. Stephens	282,988 283. 161
Upholstery purposes, method of and apparatus for curling fibers for. J. G. Stephens	283,162
Valve, balanced slide, W. M. Deal Valve, safety, G. W. Richardson	283,146
Valve, steam actuated, G. E. Elliott	283,226 283,359
Valve, steam engine reversing, C. E. Upton Vapor burning heating, and cooking apparatus. J.	283,046
S. Hull	283,217 282,987
Vehicle running gear, B. M. Soule	283,293
Velocipede, C. H. Warner	
& Tilley	
Vessels for carrying railway cars. adjustable elevator platform for. J. J. De Rycke	
Vessels, steadying floating, J. F. C. Farquhar Vise, C. Fisher	283,091
Volatile or inflammable fluids and oils, treating, S. M. Eiseman	
Wagon, dumping, W. & J. H. Leonhardt Warming and ventilating and apparatustherefor,	283,262
T. Rowan	
Washing machine, J. S. Funk	283.094
Water closets, R. Walsh	
Weighing and bagging machine, grain, J. B. Pel-	283,105
weigning and bagging machine, gram, J. B. Perton	283,018
Whiffletree, E. Palmer	283,274
Deeds	
Windmill, geared, W. H. & C. A. Holcombe Wind motor, C. M. Copradson	283,109
Wire bending and forming machine, W. B.	
Curtiss	
Wires, composition for coating and insulating underground, Brissett & Howe	
Writing, device for holding and guiding the fingers in, I. Bergman	282 948
	~02,345
DESIGNS. Clock dial and hands, S. Diolot	14,162
Fender J. H. White	14,170
Fire screen, J. H. White	14,171 14,167
Rug, chenille, J. Ferguson 14,164 to	14,166

Bleigh knee, bob. J. Drohan.....

..... 14,168

TRADE MARKS. Cigars, J. D. Loomis Cigars, plug. fine-cut, and smoking tobacco, J. B. . 10,510 & C. D. Hitt.... 10.517 Cotton goods, certain woven, Mount Vernon Com-

pany.	10,522
Fertilizers, Jarvis & Hooper	10,506
Flour, Fitzsimons & Krieder	10,506
Flour, wheat, Kelley & Lysle	10,521
Liniment, F. E. Copp	10,519
Liniment, P. G. Schuh	10,514
Medical preparations for horses, certain, J. R.	
Williams	10,524

fever and malarial diseases, A. Kirkpatrick & Milk, condensed, New York Condensed Milk Com-

Salves and plasters. Chase & Budlong...... 10,499 Shovels, scoops, and spades, Groom Shovel Com-

A printed copy of the specification and drawing of any patent in the foregoing list also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired, and remit to Munn & Co., 261 Broadway, New York. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications, not being printed, must be copied by

Canadian Patents may now be obtained by the inventors for any of the inventions named in the foregoing list, at a cost of \$40 each. For full instructions address Munn & Co., 261 Broadway, New York. Other foreign patents may also be obtained.

Advertisaments.

Inside Page, each insertion - - - 75 cents a line. Back Page, each insertion - - - \$1.00 a line.

(About eight words to a line.
Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication affice as early as Thursday morning to appear in next issue.



Sole Manufacturers of Oil Cups for Locomo-tives, Marine and Sta-tionary Engine Cylin-ders. under the Seibert and Gates Patents, with Sight Feed.

TAKE NOTICE

The Seibert Cylinder Oil Cup Co., 53 Oliver Street, Boston, Mass.

IT PAYS to sell our Hand Rubber Stamps. Samples free. FOLJAMBE & Co., Cleveland, O.

PATENT FOR SALE.

The most complete and useful Combination Table in the market, leased and manufactured in Chicago by E. Larsen & Co.; meets with general approval and seems to be a success.

to be a success.

COMPRISING:

1. A Lady's Work Table, with work box, embroidery frame, and a large receptacle. 2. Writing Table, with copy stand and place for writing materials. 3. Tollet Table, with mirror and place for tallet articles; and 4. Ornamental tenter Table, nicely finished and cloth top. Canadian patent applied for. For particulars, addiress patentee, B. G. B. R. SESEN,

339 Webster Street, Chicago, Ill.



VICTOR TRICYCLES
HIGHEST CLASS WORK. — NEW FEATURES
SEND 3CFSTAMP FOR ILLUSTRATED CATALOGUE
OVERMAN WHEEL C?
HARTFORD, CT.

WANTED.—Manufacturers and Inventors in want of a wholesale agent to introduce their goods, to address G. B. BLAKE, 913 Washington St., Boston, Mass.

Send 10 cents for dry INK POWDER; BLACK, RED, VIOLET. Makes half pint. Agents wanted. B. MORGAN, 428 Monmouth St., Jersey City, N.J.

Telegraph and Electrical SUPPLIES Medical Batteries, Inventors Models, Experi-

Medical Batteries, Inventors Models, Experimental Work, and fine brass castings. Send for catalogue C. E., ONEN & BRO. Cincinnati O Mention this paper to insure reply.



BOOKWALTER ENGINE. Compact. Substantial. Economical, and easily managed; guaranteed to work well and give full power claimed. Engine and Boiler complete, including Governor, Pump, etc., at the low price of

PERFECT

NEWSPAPER FILE

The Koch Patent File, for preserving newspapers, magazines, and pamphlets, has been recently improved and price reduced. Subscribers to the SCIENTIFIC AMERICAS SUPPLEMENT can be supplied for the low price of \$1,50 or mail, or \$1.25 at the office of this paper. Heavy board sides; inscription "SCIENTIFIC AMERICAN," in gilt. Necessary for every one who wishes to preserve the paper. Address

MUNN & CO., Publishers SCIENTIFIC AMERICAN





THE RIDER HOT AIR COMPRESSION Pumping Engine,

For city and country residences where it is required to raise a supply of water. Simple, Economical, Effective. No skill required to run it. We can refer to our customers of eight years'

CAMMEYER & SAYER, 19 Dey St., New York.

CORNELL UNIVERSITY.

MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, CIVIL ENGINEERING, AND ARCHITECTURE.

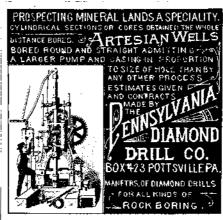
ENTRANCE EXAMINATIONS BEGIN AT 9 A.M. JUNE 18 and SEPT. 18, 1883.

For the University Rights admission, courses of study, degrees. honors, expenses, free scholarships, etc., and for special information, apply to

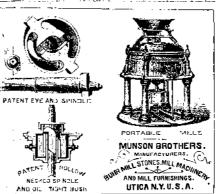
THE PRESIDENT OF CORNELL UNIVERSITY. Ithaca. N.Y.

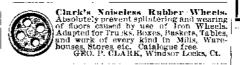
MOUNT UNION COLLEGE

Mt. Union, Ohio. Terms begin: Fall, Aug. 28; Winter, Dec. 4. Offers special advantages to students of moderate means. Cost of board and room in families. \$3 per week. 512 students last year. Address O. N. HARTSHORN, LL.D., Prest.



THE EUCALYPTUS TREE.—REPORT WILEY & RUSSELL M'F'Q CO., on the success attending the introduction of the Eucaluntus globulus into the Argentine Republic, with an ex-On the success attending the introduction of the Eucalightus globulus into the Argentine Republic, with an explanation of the method of cultivating it in that country. Various species of Eucalyptus. History of E. globulus. Value of the timber. Medicinal virtue of the tree. Cultivation. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, NO. 37%. Price 10 cents. To be had at this offices and from all newsdealers.







SILOS AND ENSILAGE.-DISCUSSION at this office and from all newsdealers



Our 10-Horse Spark-Arresting Threshing Engine has cut 10.000 feet pluc lumber in 10 hours. B. W. PAYNE & SONS.
Corning, N. Y.





A. FAY & CO.

J. A. FAY & CO., (Cincinnati, Ohio, U.S. A.) e United States, of the Exclusive Agents and Importers forth

CELLEBRATED
PERIN BAND SAW BLADES,
Warranted superior to all others in quality, finth, uniformity of temper, and general dustrity, one Perin Saw on wears three ordinary saws.



MALARIA — BY JAS. H. SALISBURY, M.D. Prize essay of the Albany Medical College Albani Association. Views of the profession, in past and recent times, on the subject of malaria. Periodicity of symptoms. Cryptograms owing upon the animal body. Muscardine. Minute bodies suspended in the right air of malarious levels. Symptoms of local fever. Transmission of malarious influence by the wind. Agus begs. Ague plants and their alites. Fever caused by updarined earth. Fever caused by innaling night exhalations from small boyes of developing ague plants. Descriptions of several cases of malaria. Therapeutical remarks. Plants in the urine of ague. Plants producing malaria of a congestive type. Bodies found in the urine of malarial and acases. Bodies found in morning expectorations. Ague in the blood. Sputa. Plants in the perspiration of ague. Pathology of intermittent fever. Plants that excite fermentation in the urine of ague. Crystal ine forms found in the urine of ague. Trystal ine forms from a first producing the continuous production of malarial fever. Contained in Scientific America. Suppliement, Nos. 378. 379. 380. 381, 382, and 383. Price 10 cents each, or 60 cents for the series. To be had at this office and from all newsdealers. MALARIA -BY JAS. H. SALISBURY.



THE NEW OTTO SILENT GAS ENGINE. Useful for all work of small stationary steam engine, Bull in sizes 0(2, 4, and 7 H. P., by SCHILLICH ER, SCHI M.M. & CO. N. E. cor. 33d & Walnut Sts., Phila. Pa. A. C. Manning, 38 Dey St., New York, Agent.



Octutated Original
BALTIMORE
PIRE-PLACE HEATERS
To warm upper and lower rooms.
The landsomest, most economical
Coal Stores in the world. Ceal Stoves in the world.

B. C. BIBB & SON
Poundry, Office and Salesrooms,
35 and 41 Li ht Street,
Baltimore, Md.

MARBLEIZED SLATE MANTELS,
35 Schaf for Circulars,



New Combined Countersink and Drill, for carriage Makers and others. Also Li htning Screw Plates and other labor-saving tools.



Han Duzen's Pat. Loose Pulley Oller Highest Indorsements, Enviable Reputation, Scientific Pedigree.

A two years' test by conservative manufacturers of national reputation has shown it to be the only perfect Lubricator for Loose Pulleys in use. Prices very reasonable. Send for our "Catalogue Number 55." VAN DUZEN & TIFT, Cincinnati, O.

G. A. GRAY, Jr. & CO., Iron and Brass Working MACHINERY.

42 EAST 8th STREET, CINCINNATI, OHIO.



-!FIRE ---AND--- VERMIN:--PROOF

Sample and Circular Free by mail. U. S. MINERAL WOOL CO., 22 Courtlandt St., N. Y.

MESSRS MUNN & CO in connection with the pubmessers. MUNN & CO.. in connection with the pubernor. Pump, etc., at the low before the Central New York Farmers' Club. exhibiting
price of

3 HORSE POWER........\$240 00

4 CAN SUPPLIED.XT, NO. 378. Price 100 cents. Tobe had for Inventors.

In this line of business they have had thirty-eight years experience, and now have unequaled facilities for the preparation of Patent Drawings, Specifications, and the prosecution of Applications for Patents in the United States, Canada, and Foreign Countries. Messrs. Munn & Co. also attend to the preparation of Caveats, Copyrights for Books, Labels, Reissues, Assignments, and Reports on Infringements of Patents. All business intrusted to them is done with special care and promptness, on very reasonable terms.

A pamphlet sent free of charge, on application, containing full information about Patents and how to procure them; directions concerning Labels, Copyrights, Designs. Patents, Appeals. Reissues, Infringements, Assignments, Rejected Cases, Hints on the Sale of Patents, etc.

We also send. free of charge, a Synopsis of Foreign Patent Laws, showing the cost and method of securing patents in all the principal countries of the world.

MUNN & CO., Solicitors of Patents, 261 Broadway, New York. BRANCH OFFICE · Corner of F and 7th Streets. Washington, D. C.