

Advertisements.

ORDINARY RATES.

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

For some classes of Advertisements, Special and Higher rates are required.

The above are charges per agate line—about eight words per line. This notice shows the width of the line, and is set in agate type.

WOOD or METAL WORKERS
without steam power can save time and money by using our Foot and Hand Power Machinery
SENeca FALLS MFG. COMPANY.

POWER & FOOT LATHES
SHAPERS, PLANERS, DRILLS, MACHINE SHOP OUTFITS, TOOLS
SEBASTIAN LATHE CO. 120 CULVERT ST. CINCINNATI, O.

A College Education for 7 Cents a Day

Improve your condition. Thorough courses, by mail, in Mechanical, Steam, Electrical, Civil, and Sanitary Engineering.

THE UNITED CORRESPONDENCE SCHOOLS, F. W. EWALD, Gen. Mgr. 154, 156, 158 5th Ave., New York

TOOLS
Every kind of Tool for Steam, Gas, and Water Fitters. Every Tool has our personal guarantee. We have been the Leading Tool Manufacturers for Fifty Years...

A TELEGRAPH OPERATOR'S WORK IS PLEASANT
pay good wages, and leads to the highest positions. We teach it quickly and start our graduates in telegraph service.

"Queen" Builder's Transit \$100
IMPROVED TRANSITS AND LEVELS
Graduated entirely on our large dividing engines.

Water Emery Tool Grinder
Has no pumps, no valves. No piping required to supply it with water. Always ready for use.

SUB-PRESS PUNCHES AND DIES
We make to order drawings or models blanking, shaving and swaging dies, either simple or compound, for work requiring accuracy and finish.

HIGH GRADE WOOD WORKING MACHINERY
Single Machines or Complete Equipments for Any Class of Work.
J. A. FAY & CO.

TRANSITS AND LEVELING INSTRUMENTS. NEW ADJUSTABLE BENCH LEVEL
Bottoms ground true. Vials ground and graduated.
C. F. RICHARDSON & SON.

AMERICAN PATENTS.—AN INTERESTING and valuable table showing the number of patents granted for the various subjects upon which petitions have been filed from the beginning down to December 31, 1894.

THE HARRINGTON & KING PERFORATING CO.
PERFORATED ZINC FOR CLEANING OF ANY SIZE & SHAPE
PERFORATED SHEET-METALS OF HOLE ALL PURPOSES

with ordinary copying ink mixed with gamboge or vermilion. Then slightly dampen the surface of the negative near the bottom right or left hand corner in as unobtrusive and unimportant a portion of the picture as possible.

(7387) M. T. says: Please refer me to SUPPLEMENT explaining how to construct a medical battery, or otherwise furnish as full instructions as convenient for coil and core of moderate strength.

(7388) C. H. R. says: Have you the formula for making a new method burnishing ink for boots and shoes? A. Four ounces shellac, 1 ounce borax, sufficient water.

TO INVENTORS.

An experience of fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

MARCH 15, 1898,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers, including items like Air brake coupling safety appliance, Air brake safety apparatus, Alcohol and yeast, producing, J. C. Boot, etc.

(Continued on page 206)

WILLIAMS' SHAVING SOAPS.
WILLIAMS' SOAPS are for sale everywhere, but if your dealer does not supply you, we mail them—to any address—postpaid on receipt of price.

Eyelet Machines.

We can furnish the Latest Improved Eyelet Machines for making shoe eyelets and special eyelets of all descriptions. We are also builders and designers of Special Wireworking Machinery.

BLAKE & JOHNSON, P. O. Box 7, WATERBURY, CONN., U. S. A.

ARMSTRONG'S PIPE THREADING

CUTTING-OFF MACHINES
Both Hand and Power. Sizes 1 to 6 inches. Water, Gas, and Steam Fitters' Tools, Hinged Pipe Vises, Pipe Cutters, Stocks, etc.

ACETYLENE APPARATUS

Acetylene number of the SCIENTIFIC AMERICAN SUPPLEMENT, describing, with full illustrations, the most recent, simple or home made and commercial apparatus for generating acetylene on the large and small scale.

MIETZ & WEISS KEROSENE ENGINE

the most economical power known. Absolutely safe and reliable. Runs with common kerosene. Perfectly automatic. Patented 1897 U. S. and European countries.

SHERIFFS MANUFACTURING COMPANY.

Established 1854. Manufacturers of Marine Engines MILWAUKEE, WIS., U. S. A.

RUBBER STAMP MAKING.—THIS

article describes a simple method of making rubber stamps with inexpensive apparatus. A thoroughly practical article written by an amateur who has had experience in rubber stamp making.

NO FIRE, SMOKE, OR HEAT. ABSOLUTELY SAFE

\$200 and up. Send 5 stamps for Catalogue. Truscott Boat Mfg. Co., Drawer 9, St. Joseph, Mich.

THE TORPEDO BOAT TURBINIA.—

This article describes the construction of the Turbinia, which made such a phenomenal speed. Detailed drawings showing arrangement of machinery.

VAPOR LAUNCH COMPLETE FOR \$150

Row, Sail or Steam Boats. Send five cents for catalogue. Racine Yacht and Boat Works, Racine Junction, Wis., Box A.

ARTESIAN WELLS

Any depth from 10 to 2,000 feet. Wells for the Improved Air Lift Pump a specialty. Old and new wells made deeper.

WELL DRILLING MACHINERY, MANUFACTURED BY WILLIAMS BROTHERS.

ITHACA, N.Y. MOUNTED OR ON SILLS, FOR DEEP OR SHALLOW WELLS, WITH STEAM OR HORSE POWER. SEND FOR CATALOGUE.

"A Tome That Tells of Tools."

All about every known Tool, large and small, and its use, size, weight, and present market price. Every Tool described and illustrated by fine and accurate cuts.

ELECTRO MOTOR, SIMPLE, HOW TO MAKE.—By G. M. Hopkins. Description of a small electric motor devised and constructed with a view to assisting amateurs to make a motor which might be driven with advantage by a current derived from a battery, and which would have sufficient power to operate a foot lathe or any machine requiring not over one man power.

This beats Wind, Steam, or Horse Power. We offer the WEBSTER 2 1/2 actual horse power

GAS ENGINE for \$150, less 10% discount for cash. Built on interchangeable plan. Built of best material. Made in lots of 10 therefore we can make the price. Boxed for shipment, weight 800 pounds.

WEBSTER MFG. CO., 1074 West 16th St., CHICAGO

HOISTING ENGINES

operating on GASOLINE, DISTILLATE or CRUDE OIL. Both Friction and Geared Hoist, from 10 to 50 H. P., for Mines, Quarries, Docks, etc. Great Saving over steam, especially where wood, coal or water are scarce.

The "Wolverine" Three Cylinder Gasoline Marine Engine.

The only reversing and self starting gasoline engine on the market. Lightest engine for the power built. Practically no vibration. Absolutely safe.

DRY BATTERIES.—A PAPER BY L. K.

Bohm, treating of open circuit batteries, historical dry batteries, modern dry batteries, Hellesen's battery Bryan's battery, Koller's battery, and the efficiency of dry cells.

PALMER STATIONARY GAS. ENGINES

GASOLINE & MARINE ENGINES LAUNCHES \$178.00 AND UP
BOAT FRAMES, PROPELLER WHEELS, ENGINE CASTINGS SEND STAMP FOR CATALOGUE

25 SECOND-HAND ENGINES

They must be sold at once. All are in good running order. Some of these were taken in part payment for our Gates Gas and Gasoline Engines.

Chains

High grade Crane, Dredging, and Steam Shovel Chains. Made of best American Charcoal Bloom Iron, Norway or Swedish Iron or Basic O. H. Steel.

KEEP YOUR TOOLS SHARP

by the use of CHAPMAN'S EMERY GRINDING MACHINE (Foot or Power). Light, strong, durable, practical and thoroughly tested.

TOOLS OF ALL KINDS

Send 10 cents for 128-page Illustrated Catalogue. H. L. CHAPMAN, Marcellus, Mich., U. S. A.



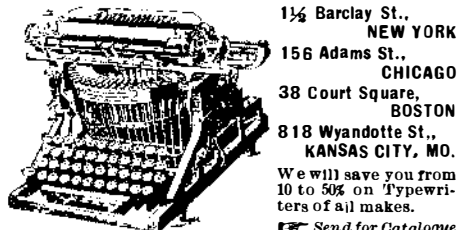
Absolutely Reliable Always.

THE Remington Standard Typewriter

NEW MODELS.

Wyckoff, Seamans & Benedict, 327 Broadway, New York.

The Typewriter Exchange



114 Barclay St., NEW YORK; 156 Adams St., CHICAGO; 38 Court Square, BOSTON; 818 Wyandotte St., KANSAS CITY, MO.

We will save you from 10 to 50% on Typewriters of all makes.

THE POLARIZING PHOTO-CHRONOGRAPH. A wonderfully ingenious and accurate apparatus for measuring the speed of projectiles.

TYPEWRITERS HALF PRICE. We will sell you any typewriter made for one half regular price, many for one quarter.

National Typewriter Exchange, Chicago.

Buy Telephones

THAT ARE GOOD-NOT "CHEAP THINGS." The difference in cost is little. We guarantee our apparatus and guarantee our customers against loss by patent suits.

THE COPYING PAD-HOW TO MAKE and how to use; with an engraving. Practical directions how to prepare the gelatine pad, and also the method by which the copies are made.

MAGNETO BELLS TELEPHONES ELECTRICAL SUPPLIES. ALL KINDS OF PARTS. SEND STAMP FOR CATALOGUE.

I-2 INCH AUGER BITS



A fine cutting tool, perfect clearance, especially good in hard wood and for end boring.

BROKEN EYEGLASSES never happen if you suspend them from one of these holders that grips the vest pocket like a grip.

SCIENTIFIC AMERICAN SUPPLEMENT. Any desired back number of the SCIENTIFIC AMERICAN SUPPLEMENT can be had at this office for 10 cents.

Acetylene Gas Lighting



DORMAN'S VULGANIZERS are used all over the world. Exclusive Manufacturers of Steam Machines for Rubber Stamps.

Table listing various mechanical and electrical parts with prices. Items include: Dampener regulator, Dipper, Display cover for barrels, Display support, Dock lock, Doubling silk or other threads, Dressing case, Drilling machines, Dumb waiter, Dust guard and axle wiper, Egg or packing case, Electric switch, Electrodes, Elevator, End gate, Engine, Explosive engine, Face protector, Fan, Faucet, Fence post, Folding table, Furnace, Gas engine, Gas generator, Gate, Gear cutter, Generator, Geometrical block, Glove, Gold plate, Grain elevator, Guns, Handie shield, Harness adjuster, Harrow, Harrow attachment, Harrow attachment, Harvester, Harvester weight equalizer, Hat fastener, Hat fastener, Head protector, Heating plate, Hinge, Hog trough, Hoisting machine, Hook, Horseshoe, Horseshoe, Hose coupling, Ice cream freezer, Inking pad, Insect trap, Insect trap, Insulator support, Joint, Key, Knitting machine, Knitting machine, Knitting machine, Knitting machine, Knob, Ladder, Lamp, Lamp, Lamp, Lamp, Last shoe, Levees, Lever, Lock, Locomotive, Loom, Loom, Loom, Loom, Mailing tube, Mailing tubes, Marker, Mercerizing under tension, Metal, Metal tubes, Meter, Mill, Mining machine, Motor, Mowing machine, Musical instrument, Musical instrument, Nailing machine, Necktie, Necktie holder, Newspaper binder, Nut lock, Nut lock, Oil burner, Oil carrying shell, Packing, Pad, Padlock, Paper fastener, Paper fastener, Paper feeding machine, Pen, Pencil sharpener, Photomechanical plate holder, Piano action, Pipe, Pipe plug, Pipe tapping and connecting device, Pistol, Pitman coupling, Planer, Planter check row attachment, Planter, Plow, Pneumatic dispatch tube system, Post, Post winder, Powder distributor, Press, Primary battery, Protector, Pump, Pump, Pumping rig coupling, Punch, Punching bag, Punching bag, Punching bag platform, Puzzle, Pyrotechnic effects, Pyroxilin compound, Pyroxilin sheets, Quartz mill, Rack, Rail joint plate and car replacer.

WE HAVE NO AGENTS. but have sold direct to the consumer for 25 years at wholesale prices, saving him the dealer's profit. ELKHART CARRIAGE AND HARNESS MFG. CO. W. B. PRATT, Sec'y, ELKHART, IND.

\$4000 will purchase a Modern Wagon. Plant including lands, buildings, ample steam power, machinery, shafting, pulleys, belting, patterns, tools, steam heating apparatus, etc.

GOERZ'S DOUBLE ANASTIGMAT. THE BEST LENS ON THE MARKET. FOR SALE BY ALL DEALERS. OPTICAL WORKS C. P. GOERZ (GERMANY).

CROOKES TUBES AND ROENTGEN'S PHOTOGRAPHY. The new photography as performed by the use of Crookes tubes as a source of excitation.

THIS Adjustable DRAWING Table. Hardwood Top 20"x28". delivered in United States for \$8.00 each.

NO MORE "POISON IN THE BOWL". The "Mallinckrodt" Patent Nicotine Absorbent and Ventilated Tobacco Pipe.

Distilled Water Preserves Health. Why should people travel thousands of miles and spend hundreds of dollars, to reach some healing spring when they can have the only absolutely pure water at home? The Sanitary Still.

ACETYLENE GAS AND CARBIDE OF Calcium. All about the new illuminant, its qualities, chemistry, pressure of liquefaction, its probable future, experiments performed with it.

THE NEW BRISTOL COUNTER. Registers an accurate account of work done on printing presses, grain, etc. Registers an accurate account of work done on printing presses, grain, etc.

SHORTHAND TYPEWRITER. is superseding stenography. One stroke prints an entire word in legible English.

PERPETUAL MOTION. A valuable series of papers giving all the classic forms of perpetual motion. The literature on this subject is so very limited, the only book being entirely out of print.

Drying Machines. for Grain, Sand, Clays, Fertilizers, Phosphates, Green Coffee, Wet Feeds, Salt, Sugar, Chemicals, etc.

YANKEE DATER, 15 cts. Date your Letters, Bills, etc. and have time, money and mistakes instantly adjusted to any date for 10 years in advance.

FOREIGN PATENTS

The importance of procuring foreign patents is often discovered by the American inventor after it is too late to secure them.

There are two important particulars in which the patent laws of most countries differ from the practice in the United States.

The following information concerning patents in England, Canada, France, Germany, Belgium and Russia will be valuable to inventors desiring protection in these countries.

ENGLAND. The application should be filed before the invention becomes publicly known in the United Kingdom, either by public use or by the publication of a description of the invention in England.

CANADA. A Canadian patent may be applied for at any time within one year of the date of issue of the United States patent or within one year after the first public use in Canada.

FRANCE. A French patent is valid only if applied for before the invention is described in any printed publication in any country.

GERMANY. A German patent should be applied for before the invention is publicly used in Germany, or before the invention is published in print in any country.

BELGIUM. A valid patent may be obtained at any time in Belgium, provided the application is filed before the invention becomes publicly known in Belgium.

RUSSIA. All applications in this country should be filed before the invention becomes publicly known in Russia. The mere issue of the United States patent offers no bar to the grant of a valid Russian patent.

APPARATUS for Production and Manipulation of Light, Acetylene Gas Generators, Electric Light Stereopticons and Animated Picture Machines, etc.