

Advertisements.

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WOOD or METAL WORKERS
without steam power can save time and money by using our Foot and Hand Power Machinery

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.

POWER & FOOT SHAPERS, PLANERS, DRILLS, LATHES, AND SUPPLIES. CATALOGUE FREE

Foot Power and TURRET LATHES, Planers, SHEPARD LATHES CO., 133 W. 2d St., Cincinnati, O.

HAVE THE LATEST IMPROVEMENTS. No machine shop can be thoroughly up-to-date unless it has the most modern perfected tools.

ASHLEY PATENT NIPPLE HOLDERS hold nipples for cutting either right or left hand threads. They hold the sleeve from turning and take the strain off both the sleeve and shank thread.

BARNES' New Friction Disk Drill. FOR LIGHT WORK. Has these Great Advantages: The speed can be instantly changed from 0 to 1600 without stopping or shifting bells.

Physical and School Apparatus GALVANOMETERS STANDARD, SINE, TANGENT, REFLECTING and WIEDEMANN GALVANOMETERS

E. S. Ritchie & Sons, Brookline, Mass.

Queen's Patent "Triple Plate" Toepler-Holtz Electrical Machine.

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.

PUNCHING & SHEARING MACHINERY. If interested, write the E. S. STILES PRESS CO. WATERTOWN, N. Y., for their Illustrated Catalogue "S. A."

HIGH GRADE WOOD WORKING MACHINERY Single Machines or Complete Equipments for Any Class of Work. Four Correspondence is Solicited. Illustrated Matter and Prices on application.

25c. Worth of Tool Knowledge All about every known Tool for every trade. Descriptive cuts of each with present market prices. Send 25 cents at once for

MONTGOMERY'S TOOL CATALOGUE for 1898. 510 pages with index at back. A handy book for every machinist and foreman of workshop or factory.

Automatic Machines FOR FORMING WIRE from coil into shapes similar to cuts. We can furnish machines or goods, as desired.

Table listing various mechanical parts and their prices, including items like 'Coin assorting and counting apparatus', 'Cooker, portable feed', 'Cultivator, M. & A. Sattley', etc.

A TIGHT GRIP. The SKINNER PATENT DRILL CHUCK is simple, strong, and accurate. The jaws are of hardened tool steel.

Our Toolmakers' Clamp is made of highest quality steel, case hardened, carefully polished and finished. The best clamp made for holding small work in drilling, tapping, etc.

DYNAMOS—MOTORS. Multi-Polar Iron-Clad Type. Slow and Moderate Speeds. A Modern Machine embodying all the best features in Dynamo and Motor Construction.

BORING AND TURNING MILLS. 4, 5 and 6 Foot Swing. H. Bickford, Lakeport, N.H. Write for Photograph and Low Prices.

The Standard Magneto. Our high grade Magneto Bells and Receivers are recognized to be the best on the market.

IN A CRAMPED CORNER workmen can always work on a pipe with our Adjustable "S" Pipe Wrench.

WELL DRILLING Machines. Over 70 sizes and styles, for drilling either deep or shallow wells in any kind of soil or rock.

ACETYLENE! Get a better light and save one-third the present cost of your gas bills by installing a National Acetylene Gas Generator.

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.

"American-Hunnings" TELEPHONES. Transmitters, Magneto Bells and Telephone Switchboards. Over 200,000 of our telephones in successful operation.

WILLIAMS' SHAVING STICK. MAKES A SMILING FACE. There is no virtue of galvanized iron, not found in Apollo; there is no fault, not found in the common makes.

PATENTED HOLDERS and INSERTED CUTTERS for Turning, Forming, Threading, Boring, Cutting-off and Knurling.

Do You Use Heavy Wire Rope? We bought 6,000 feet 2 1/2 inch wire rope, made of extra flexible steel.

CHICAGO HOUSE WRECKING CO., W. 35th & Iron Sts., CHICAGO.

DON'T LEAVE YOUR KEYS in the front door. Fasten them to the pocket or waist-band with a key chain secured by the Improved Washburne Patent Fastener.

"Universal" Kneading and Mixing Machines. Over \$200 in use. Over 300 varieties in 155 different industries.

PRESSES, DIES and SPECIAL MACHINERY. For Sheet Metal Workers. WEST MFG. COMPANY, Buffalo, N. Y., U. S. A.

SCREW-CUTTING DIE HEAD. SELF-OPENING and ADJUSTABLE. The best die head on the market.

SPECIAL Bicycle and Automobile ISSUE OF THE SCIENTIFIC AMERICAN.

Special efforts have been made to render this issue of the SCIENTIFIC AMERICAN, dated May 13th and published May 11th, thoroughly popular and attractive.

It will open with very readable articles on the general subject of the Bicycle and the Automobile.

This issue will contain illustrated articles on the leading types of automobiles, and detailed drawings will be given of one of the most successful of the French motors.

This number will be thoroughly readable and of unusual interest to all who are in any way interested in out-door sports.

A Beautiful Special Number—Profusely Illustrated—Cover in Colors. For sale at all news-stands. Price 10 cents. MUNN & CO., PUBLISHERS, 361 BROADWAY, NEW YORK CITY.

CAN I BECOME AN ELECTRICAL ENGINEER? YES; YOU CAN. WE TEACH ELECTRICAL ENGINEERING at your home, by mail, payable in installments of \$5.00 or \$2.00 per month.

What is Your Work? If you are dissatisfied with your situation, your salary, your chances of complete success, write to The International Correspondence Schools, Scranton, Pa., and learn how others so situated are getting an education by mail.

Table listing various mechanical parts and their prices, including valves, regulators, and pumps.

Roper's New Engineer's Handy-Book for STEAM ENGINEERS and ELECTRICIANS. Thoroughly revised, rewritten and much enlarged by EDWIN R. KELLER, M. E., and CLAYTON W. FIFE, B. S.

DESIGNS. Table listing various designs and their prices, including badge, bearing plate, book cover, and various mechanical parts.

CASHIERS. protected with a SMITH & WESSON Revolver are let severely alone. SMITH & WESSON Revolvers have a reputation to sustain.

TRADE MARKS. Table listing various trade marks and their prices, including bath apparatus, boots and shoes, and various food products.

New Catechism of the Steam Engine. For Engineers, Firemen, Mechanics and Amateurs. 480 pages, 335 illustrations. Bound in green silk cloth, size 6x9, 1/4 in. thick. Simple, thorough and complete.

LABELS. Table listing various labels and their prices, including Chloroform-Pictet, Doumo, and Great Western.

PURE WATER. \$1,000 CHALLENGE! 36 per cent. more water at less expense and less trouble produced by The Sanitary Still.

PRINTS. Table listing various prints and their prices, including National Automatic Hanging Spring Scales and National Platform Computing Scale.

Sunlight Camera. Makes fine picture. Has a good lens and shutter for both instantaneous and time exposures. Uses glass plates 3 1/4 x 4 1/4.

OUR LATEST WRINKLE. New Departure "SECURITY" Cyclometer. Everything Out of Danger. No More Broken Cyclometers. Noiseless Concealed Trip.

A NEW PROPOSITION: WHEELS Built to Order \$12. up from high-grade material and fittings of your own selection. Send for illustrated catalogue of the famous TEMPLE & CROWN FRAMES.

NEW IDEA IN TRUNKS. The Stealman Dresser Trunk is constructed on new principles. Drawers instead of trays. A place for everything and everything in its place.

A. W. FABER. Manufacture Established 1761. LEAD PENCILS, COLORED PENCILS, SLATE PENCILS, WRITING SLATES, STEEL PENS, GOLD PENS, INKS, PENCIL CASES IN SILVER AND IN GOLD.

5000 BICYCLES. Overstock. Must be cleared out. Standard '99 Models guaranteed, \$10 to \$25. '98 & '97 models \$8 to \$15.

SCIENTIFIC BOOKS. Open Court Publishing Co., Chicago. FOR SALE.—American Patent of successful English Steam Pump.

Valuable Ideas make good patents. Models aid the inventor and patentee. Send stamp for catalogue. J. C. SEYL, 181 Madison Street, Chicago.

ICE MACHINES, Corlies Engines, Brewers' and Bottlers' Machinery. THE VILTER MFG. CO., 839 Clinton Street, Milwaukee, Wis.

ACETYLENE DEALERS' HANDBOOK. Information sent. 42 pp. 10 cts. F. CORTEZ WILSON & Co., Chicago.

TURBINES. Send for Circular "M." JAS. LEFFEL & CO. Springfield, Ohio, U. S. A.

Rotary Engine. Novel. High speed. Utilizes expansion. Foreign rights for sale. Application allowed in U. S.

WANTED TO BUY PATENT. past experimental stage. Describe fully and name price. CASH, Box 302, Decatur, Ill.

WANTED. An Experienced Man as Foreman. Competent to take charge of machine shop small work. Addr., M. K., Box 773 N. Y.

WANTED TO MANUFACTURE. Patented Metal Articles, Small Machines, Tools and Appliances in quantities under contract.

WANTED. A large quantity of rails that are defective in appearance, weight, from 8 to 50 lbs. per yard, for cash.

WANTED. We are manufacturing and making a great many Soft Pine Shavings and Sawdust and are desirous of putting them to some use other than fuel and bedding purposes.

BELTING of Various Styles, ELEVATORS, CONVEYORS, COAL MINING and HANDLING MACHINERY. The JEFFREY MANUFACTURING CO., COLUMBUS, O.

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.

YOU CAN MAKE \$100 A WEEK! OWN YOUR OWN SHOW COMPLETE OUTFIT—\$100. LIFE MOTION FILMS & MACHINES. GREAT PASSION PLAY & 500 OTHER SUBJECTS.

To Authors: Manuscripts required. We Publish: A new book every day in the year.

TENNYSON NEELY, Publisher, 114 Fifth Avenue, New York.

WHY NOT Make Rubber Stamps? Our "New York" Rubber Stamp Vulcanizers received the only medal awarded any Vulcanizer, World's Fair, Chicago.

GAS and GASOLINE ENGINES. WATER MOTORS. BACKUS WATER MOTOR CO. NEWARK N. J. U. S. A.

Big Reductions in Brass Band Instruments. Drums and Uniforms. Write for catalog, 445 illustrations, FREE; it gives Band Music & Instructions for Amateur Bands.

AMERICAN DESK and STOOL CO. \$33.33 DELIVERED. EAST OF THE MISSISSIPPI 60 inches long 25 inch wide. HOWARD & CROSBY STS. NEW YORK.

INGERSOLL CYCLOMETER, 25c. Most Durable, Practical and Cheapest; 10,000 Miles and Repeat; constantly Moving Hand shows Every Foot of Progress.

A MANUFACTURING CONCERN contemplating the erection of a plant for Granting Sheet Metal and Cast Iron Goods, desires to correspond with a practical expert in this line who is fully conversant with modern up-to-date methods.

SENSITIVE LABORATORY BALANCE. By N. Monroe Hopkins. This "built-up" laboratory balance will weigh up to one pound and will turn with a quarter of a postage stamp.

YOU CAN MAKE \$100 A WEEK! OWN YOUR OWN SHOW COMPLETE OUTFIT—\$100. LIFE MOTION FILMS & MACHINES. GREAT PASSION PLAY & 500 OTHER SUBJECTS.

Planning the New Home. Anyone contemplating the building of a new home will find the Building Edition of the Scientific American of peculiar and absorbing interest.

To Authors: Manuscripts required. We Publish: A new book every day in the year.

TENNYSON NEELY, Publisher, 114 Fifth Avenue, New York.

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