

ELECTRICAL ENGINEERING TAUGHT BY MAIL.

Write for our Free Illustrated Book. "CAN I BECOME AN ELECTRICAL ENGINEER?"

We teach Electrical Engineering, Electric Lighting, Electric Railways, Mechanical Engineering, Steam Engineering, Mechanical Drawing, at your home by mail. Institute Indorsed by Thos. A. Edison and others.

EARN MORE Study in spare time. We teach you what you need to know to earn more in your own business or another. Engineering, Drafting, Art, Architecture, Mining, Metallurgy, Business, Stenography, Journalism, Bookkeeping, etc.

THE CONSOLIDATED SCHOOLS, 156 Fifth Ave., N. Y. Including the United Correspondence Schools and others.

BECOME AN ENGINEER. Imagine feeling a monster locomotive throb under your control! Wouldn't you like to be the man at the lever? You can be if you try. Through our correspondence courses thousands of young men are fitting for splendid positions. Steam, Mechanical, Electric Engineering, Heating, Ventilating, Plumbing, Mechanical Drawing. Our instructors are professors in the best technical schools in Boston. Write for prospectus and particulars about Free Scholarships.

LEARN PROOFREADING. If you possess a fair education, why not utilize it at a genteel and uncrowded profession paying \$15 to \$35 weekly? Situations always obtainable. Write to the original instructors by mail.

STANDARD INDEX CARD CO. 112-114 N. Seventh St., Philadelphia, Pa. RECORD, TAB & GUIDE CARDS. Plain Printed, Ruled & Accurately Die Cut. For all makes of Cabinets. Quality, Execution & Promptness. Guaranteed Odd Size Guides and No. of Projections or Alphabetical Subdivisions. MAIL US SAMPLE AND LET US QUOTE YOU PRICES.

HARDWARE SPECIALTIES Contract Manufacturers. Difficult Parts or Finished Articles. UNION MFG. & SPECIALTY CO., 506-508 Genesee Street, BUFFALO, N. Y.

The World's Playground. Colorado, Michigan, Canada, The Adirondacks, St. Lawrence River, White Mountains, or the Sea Coast of New England. Best reached by the "Big Four". Write for Rates and Folders. Warren J. Lynch, W. P. Deppe, Gen'l. Pass. & Tkt. Agt. Asst. Gen'l. P. & T. A. CINCINNATI, 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 newdealers. MUNN & Co. 361 Broadway, New York Branch Office, 626 F St. Washington, D. C.

Table listing various products and their prices, including tanning compounds, receptacles, remedies, shirts, shoes, soap, syrups, tobacco, and veterinary bandages.

LABELS. Table listing various medicinal and household labels such as 'Big 4 External Liniment', 'Branoline', 'Crescent Stock Food', 'Dr. Price's Soda Quinine Laxative Powders', etc.

PRINTS. Table listing various prints for men's apparel, clothing, and women's underwear.

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.

Notes and Queries. HINTS TO CORRESPONDENTS. Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

(8626) A. E. L. asks: With our 12 horse gasoline engine we frequently have power to spare. Would it be practicable to run a small dynamo for charging battery like the new Edison storage, to be used for mobile, lighting warehouse and furnishing spark for engine, and if so, what kind of outfit would be best adapted to our wants? A. It is quite practicable to use the excess of power from your gas engine in running a dynamo for lighting or charging storage battery or any other electrical work.

(8627) C. E. B. asks how to rewind the following 50-volt, 30-ampere incandescent dynamo so as to deliver 115 volts and 30 amperes. The armature is of the slotted drum type, 4 inches diameter, 5 inches long, and contains 20 slots, each slot containing eighteen No. 14 B. & S. double cotton-covered wires; speed of armature 1500 R. P. M. A. To double the voltage of your dynamo, you must double the number of coils on the armature, the number of turns remaining the same.

PERFORATED METALS. FOR ALL USES, MADE AS REQUIRED. THE HARRINGTON & KING PERFORATING CO. 225 N. UNION ST. CHICAGO, ILL. U.S.A.

The Typewriter Exchange. 136 Barclay St., NEW YORK; 124 La Salle St., CHICAGO; 38 Bromfield St., BOSTON; 817 Wyandotte St., KANSAS CITY, MO.; 209 North 9th St., ST. LOUIS, MO.; 432 Diamond St., PITTSBURGH, PA.; 5 North Calvert St., BALTIMORE, MD.; 636 California St., SAN FRANCISCO, CAL. We will save you from 10 to 50% on Typewriters of all makes. Send for Catalogue.

The Remington Typewriter. lasts longest—so does the Remington operator. The Remington does not overwork the operator. The operator cannot overwork the Remington. WYCKOFF, SEAMANS & BENEDICT (Remington Typewriter Company) 327 Broadway, New York.

The New Sun Typewriter. A REVELATION. A Type-Bar Machine. Highest Speed. Lightest Touch. Visible Writing. Universal Keyboard. Beautiful Work. PRICE, No. 2.—\$40. THE SUN TYPEWRITER CO., 289 Broadway, New York.

A NEW RESULT from the EDISON PHONOGRAPH Accomplished. MR. EDISON'S LATEST INVENTIONS—THE Moulded Record & the New Reproducer duplicate the human voice in volume and clearness. Absolutely free from scratching, perfectly smooth and natural. The Moulded Records are "high speed," made of hard wax, freely and safely handled. New Reproducers on all Phonographs. Ask your dealer for exchange proposition ("Gen" excepted). Phonographs in Nine Styles, \$10.00 to \$100.00. Records, 50¢; \$5 per dozen. NATIONAL PHONOGRAPH COMPANY, Orange, N. J. New York, 83 Chambers St., Chicago, 144 Wabash Ave.

NIAGARA FALLS. One of the natural wonders of the world. A charming place at any season of the year, reached from every direction by the NEW YORK CENTRAL LINES. A visit to the Falls is an object lesson in geography; an exhibition of landscapes that no painter can equal, and a glimpse of the latest developments of the industrial world.

OIL--SMELTER--MINES. Dividend-Paying Mining, Oil and Smelter Stocks, Listed and Unlisted, our Specialty. DOUGLAS, LACEY & CO. Bankers & Brokers, Fiscal Agents, Members N. Y. Consolidated Stock Exchange. 66 BROADWAY & 17 NEW ST., NEW YORK.

CONTROL OF FIRE.—VALUABLE Paper on fire extinguishment. SCIENTIFIC AMERICAN SUPPLEMENT 1134. Price 10 cents. For sale by Munn & Co. and all newsdealers.

DIVIDENDS. Risk a postal. Send us your name for prospectus of the Rayo Mining and Developing Co. of California. Every dollar invested in these shares will return you regular, handsome, dividends. MILLIONS of ore values ready to mine; Electric Water-Power Plant in connection. Not the ordinary mining proposition. Shares now selling at ground-floor price. Bank References. ROANOKE INVESTMENT CO. 525 Marquette Building. Chicago.

Hutchinson, Goldsmith & Company, Exclusive Eastern Financial Agents, 53 State St., Boston, Mass.

PROPOSALS. SEALED PROPOSALS WILL BE RECEIVED AT the office of the Light House Engineer, Tompkinsville, N. Y., until one o'clock P. M., June 27, 1902, and then opened, for the metal work and erection of Fort Wadsworth Light House, New York Harbor, N. Y. Information furnished on application to W. M. T. ROSELL, Major, Corps of Engineers, U. S. A., Engineer, 3d Dist.

FREE Catalogue of Architectural, Scientific and Technical Books. Prospectus for 1902, for "Architects and Builders Magazine," monthly \$2 a year. WM. T. COMSTOCK, Pub., 23 Warren St., New York.

MATCH Factory Machinery. W. E. WI LLIAMS, Mfr., 27 South Clinton St., Chicago, U. S. A.

NEW YORK SHOPPING by a responsible and experienced lady. Send for circular. MRS. LORD, 41 West 24th Street, New York City.

ICE MACHINES, Corliss Engines, Brewers' and Bottlers' Machinery. THE VILTER MFG. CO., 899 Clinton Street, Milwaukee Wis.

MODELS & EXPERIMENTAL WORK. Inventions developed. Special Machinery. E. V. BAILLARD, Fox Bldg., Franklin Square, New York.

MODELS & GEARS. CATALOGUES FREE. UNION MODEL WORKS 193 CLARK CHICAGO.

NOW READY. Compressed Air. ITS PRODUCTION, USES AND APPLICATIONS. By GARDNER D. HISCOX, M. E. AUTHOR OF "MECHANICAL MOVEMENTS." LARGE 3V0. 820 PAGES. 547 ILLUSTRATIONS. PRICE, bound in Cloth, \$5.00. Half Morocco, \$6.50. A complete treatise on the subject of Compressed Air, comprising its physical and operative properties from a vacuum to its liquid form. Its thermodynamics, compression, transmission, expansion, and its uses for power purposes in mining and engineering work; pneumatic motors, shop tools, air blasts for cleaning and painting. The Sand Blast, air lifts, pumping of water, acids and oils; aeration and urification of water supply; railway propulsion pneumatic tube transmission, refrigeration. The Air Brake, and numerous appliances in which compressed air is a most convenient and economical vehicle for work—with air tables of compression, expansion and physical properties. A most comprehensive work on the subject of Compressed Air. A special illustrated circular of this book will be sent to any address on application. MUNN & CO., Publishers of the Scientific American, 361 Broadway, New York.