

Electrical Notes.

An American company has secured concessions for the operation of many European canals by electricity. Altogether 5,000 miles of canals are controlled in England and on the Continent.

The Transalpine telephone line, connecting the systems of France and Italy, was inaugurated January 1. Signor Galimberti, Italian Minister of Posts and Telegraphs, exchanging greetings from Turin with President Loubet in the Palace of the Elysée with entire success. The line was subsequently opened to the public. It does not extend beyond northern Italy. The connection with Rome has not been completed.

A record feat in armature winding is claimed to have been accomplished by the Niagara Falls Power Company recently, which re-wound a 5,000 horse power armature at the Falls power house in five days. In order to perform this work in the required time, a double shift of ten men was kept working day and night. An interesting feature of the work was the use of a small electric motor to blow the blacksmiths' forge, on which charcoal was burned.

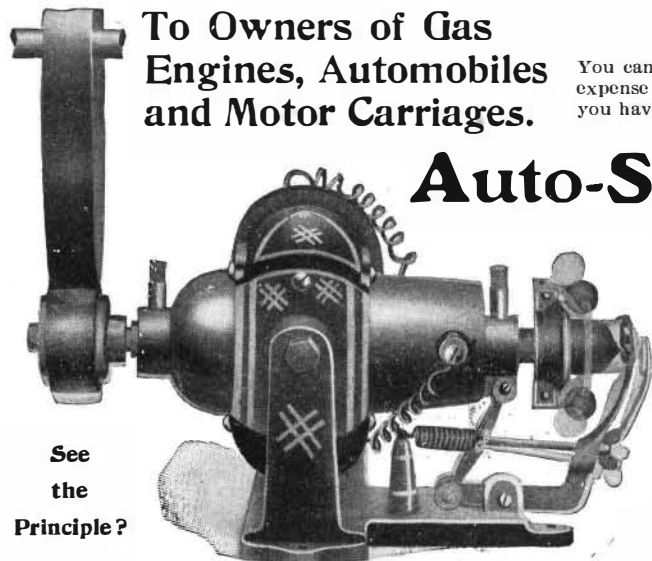
Three furnaces of 500 electric horse power are said to have been erected in the valley of Camonica, Northern Italy, for the manufacture of pig iron under the Stassano patent. The furnaces in general outlines resemble cupola furnaces using coke, their special features being apparent in the provision made for supplying electric current and in the electrodes placed at the bottom of the boshes. To obtain a ton—metric—of metal, 3,000 horse power hours are required, which costs about 18 francs.

Consul Thackara reports from Havre, December 5, 1901, that the Commercial Cable Company, of New York, has laid a new submarine cable between Horta, Island of Fayal, Azores, and Waterville, Ireland. The shore connections at the latter place were successfully made on November 30. This cable, says the consul, is an extension of that laid by the same company in 1900, and increases to four the number of cables operated by the Commercial Company between Canso and Waterville. As Havre is connected by a submarine cable with Waterville, the direct-telegraph service with New York will be benefited by the new cable.

An important invention by Herr Rudolf Bartelmus, an electrician of Vienna, for the prevention of railway accidents, has been subjected to severe experiments by the Austrian Railway Officials' Club. The locomotive for the purpose was worked automatically by means of a contact rail along the entire distance, combined with a dynamo and a steam turbine. In case of any obstruction being encountered on the line, the newly invented device works as a progressive check. That is to say, it gives notice first at a distance of 2,400 yards, then at 1,200 yards, and finally, if the previous signals remain unheeded, at 600 yards from the obstruction the steam is automatically shut off on the engine, and the brakes work, so that the train comes to a standstill.

The Post Office Department has authorized the experimental establishment in Toledo, O., of an electrical appliance to record collections from street and office mail boxes, says The Railway Review. The object of the proposed system is to prevent collectors of mail from skipping boxes. The device is so constructed that whenever a box is opened a record of the opening is signaled to the post office. Where there are a great many boxes, in cities of a population of 100,000 and over, it is thought the system would prove valuable. It would also be a valuable addition in sparsely settled communities, where boxes are a long distance apart. Here, it is reported, collectors frequently skip boxes. This violation of regulations could be entirely prevented if the electric appliance was attached to each box.

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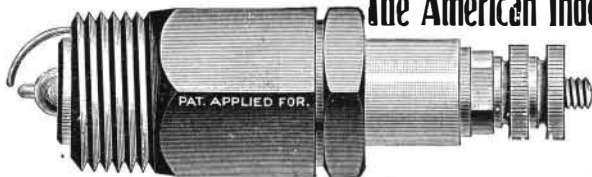
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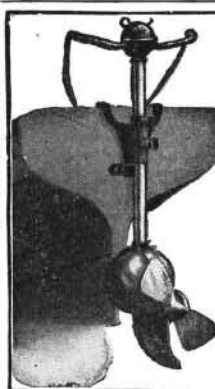
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- Inquiry No. 2102.—For manufacturers of refrigerating machinery.
- "U. S." Metal Polish, Indianapolis. Samples free.
- Inquiry No. 2103.—For machinery used for cleaning carpets by air blast exhaust fan.
- WATER WHEELS, Alcott & Co., Mt. Holly, N. J.
- Inquiry No. 2104.—For makers of lawn mower grinders.
- Stencil Machines.—A. J. Bradley, 101 Beekman St. N. Y.
- Inquiry No. 2105.—For hand or small power ice machines.
- Metal substitute. Crane Bros., Mfrs., Westfield, Mass.
- Inquiry No. 2106.—For dealers in presses, dies, etc., for manufacturing laundry blues.
- Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.
- Inquiry No. 2107.—For manufacturers of hydrogen balloons.
- Sheet metal stamping and light manufacturing. Forskell Motor Co., Anderson, Ind.
- Inquiry No. 2108.—For makers of china nest eggs.
- Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.
- Inquiry No. 2109.—For dealers in magnetic clutches.
- Rigs that Run. Hydrocarbon system. Write St. Louis Motor Carriage Co., St. Louis, Mo.
- Inquiry No. 2110.—For dealers in mucilage, brushes, etc.
- For sheet metal stampings and novelties try Standard Stamping Co., Seventh and Hudson, Buffalo, N. Y.
- Inquiry No. 2111.—For electrical devices for soldering in vacuum.
- Ten days' trial given on Daus' Tip Top Duplicator. Felix Daus Duplicator Co., 5 Hanover St., N. Y. city.
- Inquiry No. 2112.—For dealers in gasoline gas machines for light and fuel purposes.
- Are you looking for anything in bent woodwork? Write Tucker Bicycle Woodwork Co., Urbana, Ohio.
- Inquiry No. 2113.—For a gas meter to register gasoline gas.
- MANUFACTURERS! Want any parts made of any metal? Write us. Metal Stamping Company, Niagara Falls, N. Y.
- Inquiry No. 2114.—For dealers in supplies for systems of speaking tubes.
- We develop inventions through their several stages, manufacturing for the market. Amstutz Osborn Co., Cleveland, O.
- Inquiry No. 2115.—For steel and transfer trucks such as are used in lumber dry kilns.
- For Machine Tools of every description and for Experimental Work call upon Garvin's, 149 Varick, cor. Spring Streets, N. Y.
- Inquiry No. 2116.—For manufacturers of steam toys.
- Manufacturers of patent articles, dies, stamping tools, light machinery. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.
- Inquiry No. 2117.—For a malleable iron or steel foundry to make special castings.
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- Inquiry No. 2118.—For makers of printing ink and colored printing ink in small tubes.
- The celebrated "Hornsbey-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.
- Inquiry No. 2119.—For parties desiring to make a bicycle attachment for use on railroads.
- The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail \$4. Munn & Co., publishers, 361 Broadway, N. Y.
- Inquiry No. 2120.—For makers of woodworking machinery, tools, etc.
- WANTED.—Foundry chemist who can also superintend cupolas and produce iron at lowest cost. Young man preferred. Stover Manufacturing Company, Freeport, Md.
- Inquiry No. 2121.—For dealers in trunks, trunk supplies, etc.
- WANTED.—To interest responsible parties in the manufacture, on royalty basis or otherwise, of a recently patented tool of exceptional merit. Address M. D. Tillman, Wabash, Ind.
- Inquiry No. 2122.—For manufacturers of kid glove fasteners.
- To be successful, an automobile manufacturer should control and use a patented engine. I will sell patent or right to manufacture such an engine. Address H. B. Ogden, 204 Carroll St., Brooklyn, N. Y.
- Inquiry No. 2123.—For manufacturers of crepe (mourning) flowers.
- Wanted—Revolutionary Documents, Autograph Letters, Journals, Prints, Washington Portraits, Early American Illustrated Magazines. Correspondence Solicited. Address C. A. M. Box 773, New York.
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- MANUFACTURER WANTED.—For patent shaft-governed high-speed engine, fully demonstrated, authentic tests. All machine works standardized for cheap production. Full working drawings and personal supervision if required. Address Y. K. E., at Horncastle's Advertising Offices, 61 Cheapside, London, England.
- Inquiry No. 2125.—For makers of the metal parts of shade rollers.
- WANTED.—Reliable, sober and competent foreman for machine shop department. Thorough mechanic, one who understands up-to-date methods of producing work economically and handling men. State experience, give references and salary. Great Western Mfg. Co., Leavenworth, Kansas.
- Inquiry No. 2126.—For outfits for the manufacture of window and door screens.
- Motor Vehicles. Duryea Power Co., Reading, Pa.
- Inquiry No. 2127.—For the present address of the Columbian Time Recorder Co., formerly of New York.

(Continued on page 158)

Business and Personal Wants.

(Continued from page 155.)

- Inquiry No. 2128.**—For tools for the manufacture of wooden butter dishes.
- Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.
- Inquiry No. 2129.**—For manufacturers of rice peeling mills.
- Inquiry No. 2130.**—For manufacturers of bob sleds.
- Inquiry No. 2131.**—For gasoline engine castings for automobiles.
- Inquiry No. 2132.**—For manufacturers of plants for the distillation of wood.
- Inquiry No. 2133.**—For the manufacturers of the Columbia machine for working metals and gold.
- Inquiry No. 2134.**—For makers of diamonds for the points of tools for turning emery wheels, etc.
- Inquiry No. 2135.**—For dealers in black hard rubber in sheets.
- Inquiry No. 2136.**—For manufacturers of cheap clock-work to drive movable paper figures for advertising purposes.
- Inquiry No. 2137.**—For manufacturers of photographic cameras and apparatus to make special goods.
- Inquiry No. 2138.**—For dealers in type-casting machines and stock matrices of type faces.
- Inquiry No. 2139.**—For manufacturers of machinery for grinding wood pulp.
- Inquiry No. 2140.**—For machines for making paper tubes.
- Inquiry No. 2141.**—For manufacturers of canning machinery.
- Inquiry No. 2142.**—For oil burners adaptable for cooking and heating stoves and furnaces.
- Inquiry No. 2143.**—For manufacturers of netting machines.
- Inquiry No. 2144.**—For makers of steel castings.
- Inquiry No. 2145.**—For makers of special-sized wooden lathes.
- Inquiry No. 2146.**—For manufacturers of steel wire.
- Inquiry No. 2147.**—For makers of a patent fencing machine used for putting on wooden slats. Patented by E. S. Scofield.
- Inquiry No. 2148.**—For manufacturers of purring for violins and mandolins.
- Inquiry No. 2149.**—For automatic machines, such as electric shock, lifting, punching, junk-testers, etc.
- Inquiry No. 2150.**—For dealers in small tanks of a working pressure of 300 pounds per square inch, for gas.
- Inquiry No. 2151.**—For manufacturers of glass articles.
- Inquiry No. 2152.**—For makers of fine drop forgings for small crank shafts.
- Inquiry No. 2153.**—For an outfit for a small electric plant.
- Inquiry No. 2154.**—For manufacturers of improved machines for drying fruit, especially bananas.
- Inquiry No. 2155.**—For a nailing machine to be operated by compressed air.



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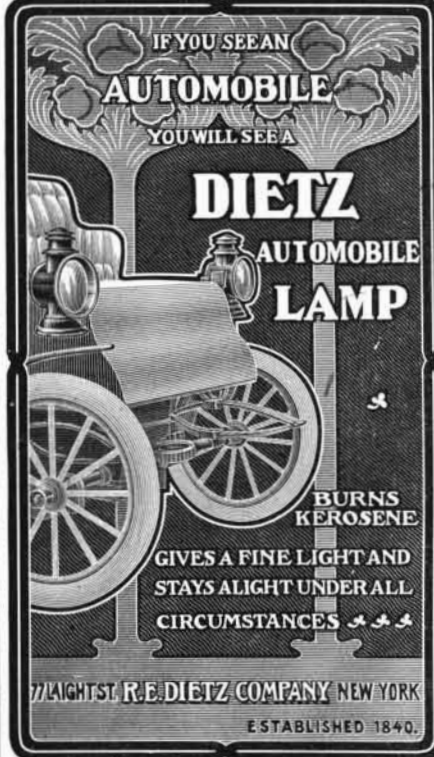
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NEW BOOKS, ETC.

POOR'S MANUAL OF RAILROADS OF THE UNITED STATES. Thirty-fourth Annual Number, 1901. New York: H. V. & H. W. Poor, 1901. 8vo. Pp. 1900. Plates, Maps. Price \$10.

Poor's Manual is a standard handbook and official organ of the railroad systems of the country, and of every interest connected therewith, containing detailed statements of operations and conditions of every railroad company in the United States and Canada, and the leading railroads in Mexico. Every statement is officially revised before publication. The most important feature introduced into the Manual in recent years is one presented in the edition for 1900, and is entitled "Ready Reference Bond List." Poor's Manual is by far the best publication of its kind and its reliability and thoroughness make it absolutely indispensable to every railroad and financial man.

STUDIES IN HETEROGENESIS. By H. Charlton Bastian, M.A., M.D., F.R.S. First Part. London: Williams & Norgate, 1901. 8vo. Pp. 61. Plates. Price \$3.

The author is a well-known medical man who has written a number of books upon the brain and paralysis. He uses the term heterogenesis in the sense originally employed by Burdach, as a class name for processes by which living things arise from the matter of pre-existing organisms belonging to a totally different species—the correlative term homogenesis being used by them as at present, for the process by which individuals arise in the ordinary way from pre-existing living things similar to themselves in organism. Briefly, however, he defines the term heterogenesis as the production from the substance of organisms or their germs of alien forms of life. The author deals with one of the most difficult subjects in the scientific world and the net result of his contribution to the literature of science is sure to be appreciated.

CENTRIFUGAL PUMPS, TURBINES AND WATER MOTORS. INCLUDING THE THEORY AND PRACTICE OF HYDRAULICS. By Charles H. Innes, M.A. Manchester: Technical Publishing Company, Ltd. 1901. 12mo. Pp. 226. Price \$1.80.

The author has put in as concise form as possible the theory of turbines, centrifugal pumps and fans. In one of the chapters will be found a description of steam turbines, for which he is indebted to the Hon. C. A. Parsons, and it is one of the most important discussions of the subject which we have ever seen. In the preparation of the book no effort has been spared to make the text as clear as possible, and the illustrations are numerous.

HOW TO REMEMBER WITHOUT MEMORY SYSTEMS OR WITH THEM. By Eustace H. Miles, M.A. London: Frederick Warne & Co. 1901. 12mo. Pp. 278. Price \$1.

This book is practical rather than technical. It does not contain long discussions as to what our memory is or what it is not, but gives in concise form pieces of advice as to how we may best remember. The principles are based on methods which most of us do already frequently use with excellent results. Each person is left free to choose his or her own way, system or systems, but it should be tried fairly before condemning. Yet, lest any should say that it is a waste of time to learn systems at all, the author has tried to show the value of a good memory, and the good effects of ways and systems if properly used on the character, and on success in various branches of life.

COMMERCIAL TRUSTS. Growth and Rights of Aggregated Capital. By John R. Dos Passos. New York: G. P. Putnam Sons. 1901. 12mo. Pp. 137.

The present work is an argument delivered before the Industrial Commission at Washington, D. C., December 12, 1899, corrected and revised. The author deals with aggregations of capital, commercial corporations, over-capitalization, regulation of capital, legal control, anti-trust laws, regulation of trusts, legislation and other allied subjects.

SUBJECT LIST OF WORKS ON CERTAIN CHEMICAL INDUSTRIES IN THE LIBRARY OF THE (BRITISH) PATENT OFFICE. London: The Patent Office. 1901. 16mo. Pp. 100. Price 20 cents.

We have commented favorably upon the excellent series of publications which the British Patent Office is issuing from time to time. They are highly useful, and the present volume is one of the best of the series. It includes destructive distillation, mineral oils and waxes, gas lighting, acetylene, oils, fats, soaps, candles, perfumery, paints, varnishes, colors, resins, paper and leather industries.

ELECTROMAGNETS FOR DESIGN AND CONSTRUCTION. By A. N. Mansfield, S.B. New York: D. Van Nostrand Company. 1901. 16mo. Pp. 155. Price 50 cents.

An excellent little book of pocket size in the Van Nostrand Science Series, of which 112 volumes have now appeared. The author treats the subject mathematically, and the formulas and data which are essential to the design and construction of electro-magnets for various purposes are here presented in convenient form.