VALVE FOR STEAM-ENGINES.—C. E. LOWE, Eufaula, Indian Ter. In the present patent the invention has reference to improvements in valves for steam-engines, the aim of the inventor being to provide a valve which will work with less friction than the ordinary slide-valve by doing away with stuffing-boxes and packing-glands for the valve-rod.

ENGINE.—G. H. COLLIER, Joplin, Mo. Mr. Collier's invention relates to a steam-engine having an oscillating piston arranged in a suitable chest or cylinder and joined by a connecting-rod with a crank-shaft, so as to rotate the shaft upon the oscillation of the piston. The chest is provided with feed and exhaust ports controlled by a slide or other valve driven from eccentrics on the crank-shaft.

Railways and Their Accessories.

FISH-BAR CLAMP.—W. S. WOOTTON, Roanoke, Va. This invention relates to means for securing fish bars or plates oppositely upon the webs of meeting track-rails of a railroad, so as to secure the rails alined and together, and has for its object to provide a novel and practical device for the indicated purpose that is easily applied and that dispenses with screw-threaded bolts and nuts thereon as means for clamping the fish bars or plates in place on the track-rails.

IMPLEMENT FOR ADJUSTING FISH-PLATE CLAMPS.—W. S. WOOTTON, Roanoke, Va. The invention refers to means for adjusting a securing device on fish-plates that are therewith clamped upon the meeting ends of track-rails, holding them alined, and has for its object more particularly to provide details of construction for an implement that is especially well adapted for adjusting the parts of a novel fish-bar clamp, the implement by its use enabling the fixture of the clamping device at a rail-joint in a convenient, speedy and reliable manner and facilitating removal of the fish-bar clamp as may be required.

CAR-WHEEL.—C. WIMMER, Hamilton, Canada. Mr. Wimmer's invention relates particularly to improvements in driving-wheels for locomotives, the object being to provide a wheel of novel construction so arranged as to have a comparatively large frictional bearing-surface lengthwise of a rail, thus reducing the danger of slipping to a minimum, and therefore causing a train to come to a quick stop upon setting the brakes and a quick and easy start.

LOCK FOR RAILWAY-SWITCHES.—D. BOYLE, Livingston, Mont. In the present patent the invention has reference to locks for railway-switches, and the inventor has for his particular object the provision of a secure device convenient to operate which will not be liable to become disarranged even if the associated switch-stand be overturned.

CAR-COUPLING.—J. MCWATTERS, St. Augustine, Fla. The object in this case is to provide details of construction for a coupling which will be very effective and reliable in service, convenient to operate, of compact construction, and which will positively release a car-coupling of the Janney type, whether of the improved or ordinary construction, when the car having the improved coupling thereon leaves the track from any cause and drops below the track-rails or the car in advance is derailed and its coupling is lowered.

CAR-COUPLING.—C. C. WERTHNER, Toronto, Canada. The purpose here is to provide a self-locking coupler adapted for either freight or passenger service and to so construct the coupler that uncoupling may be instantly and rapidly accomplished and whereby when two opposing draw-heads are brought together they will have a locking engagement, yet each draw-head and its draw-bar will be free to accommodate themselves to any curve, ascension, or declivity in the track.

Designs.

DESIGN FOR AN INCANDESCENT LAMP.—A. H. SELLING, New York, N. Y. This design for an incandescent lamp is graceful and ornamental. The lamp is provided with a conical illuminating surface corrugated so as to form a series of lines which converge at an apex and thus presents a maximum of illuminating surface. In form, the glass portion resembles the outline of a top.

DESIGN FOR FRINGE.—J. C. ATKINSON, New York, N. Y. This ornamental design for fringe comprises a band of linen or like threads, the threads producing a bright and checkered effect and studded with woven bows of unvarying size. Below the band the threads hang in graduated lengths to produce a scalloped form of edge. Mr. Atkinson has designed another ornamental fringe of like material as the above and consisting of a band with open work center. Below the band the threads hang in skein form of uniform length.

DESIGN FOR TRIMMING.—C. SEIDEL, New York, N. Y. This new and ornamental design for a trimming comprises a straight edged band of linen or like material. The body has a plain cross thread effect and irregularly spaced with stripes of different widths and two patterned rows, and forming a very chaste and attractive composition.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. **In every case it is necessary to give the number of the inquiry.**

MUNN & CO.

Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 6463.—For manufacturer of Flaherty Carboy Inclinator.

For mining engines. J. S. Mundy, Newark, N. J.

Inquiry No. 6464.—For manufacturer of suspender web, buckles, cord, etc., in large quantities; also a firm who would make a suspender on contract.

"U. S." Metal Polish. Indianapolis. Samples free.

Inquiry No. 6465.—Address of two or three firms dealing in small engines of one or two horse power.

Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 6466.—For manufacturer of cardboard rolls similar to those used for mailing periodicals, etc., also cardboard roll 5 in. long, 6½ in. in diameter and ⅛ in. wall.

Handle & Spoke Mchy. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Inquiry No. 6467.—Address of manufacturers of a mill that will pulverize from 5 to 10 tons of hay or straw per day.

Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 6468.—Address of people selling spool and bobbin machinery.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

Inquiry No. 6469.—For manufacturer of machine that will turn out the artificial target used by trap shooters and known as Blue Rocks, Black Birds.

Robert W. Hunt & Co. bureau of consultation, chemical and physical tests and inspection. The Rookery, Chicago.

Inquiry No. 6470.—For the manufacturer of collapsible hard tubes with screw cap suitable to put up ointment.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company Foot of East 138th Street, New York.

Inquiry No. 6471.—For the manufacturer of mortising chisel to use in a mortising machine, which removes the core, in making blind tenon doors, sash, etc.

I have every facility for manufacturing and marketing hardware and housefurnishing specialties. Wm. McDonald, 190 Main St., East Rochester, N. Y.

Inquiry No. 6472.—For the address of a firm who can supply a gasoline furnace adapted for heating bars of iron ¼ x 1 x 48 inches.

The SCIENTIFIC AMERICAN SUPPLEMENT is publishing a practical series of illustrated articles on experimental electro-chemistry by N. Monroe Hopkins.

Inquiry No. 6473.—For the address of parties manufacturing machine for forming heated bars into a helicoid form, like the blades of a lawn mower.

Sheet metal, any kind, cut, formed any shape. Die making, wire forming, embossing, lettering, stamping, punching. Metal Stamping Co., Niagara Falls, N. Y.

Inquiry No. 6474.—For the manufacturer of advertising novelties, especially woolen and celluloid rulers.

We manufacture gasoline motor and high-grade machinery, castings best quality gray iron. Select patterns, and let us quote prices. Frontier Iron Works, Buffalo, N. Y.

Inquiry No. 6475.—For importers of German and French mechanical toys, metal goods and novelties.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 6476.—For the manufacturer of machine used by the makers of felt roofing.

CALCULATING MACHINES.—Wanted, first-class firm willing to take up the agency and sale in the United States and Canada of a well-known calculating machine. Terms very favorable. Apply Grimme, Natalis & Co., Braunschweig, Germany.

Inquiry No. 6477.—For the manufacturer of typewriters, metal office furniture, typewriter ribbons, carbon papers, safes, sporting goods, canvas, car curtains, bookcases and office furniture.

WANTED.—General Factory Superintendent or Agent. Competent to take charge of large manufacturing plant. All correspondence strictly confidential. Address with full particulars as to experience and qualifications Superintendent. Box 773, New York.

Inquiry No. 6478.—For firms supplying bathroom outfits, a gasoline engine for pumping the water and an electric light outfit for about a dozen lights.

WANTED.—Revolutionary Documents, Autograph Letters Journals, Prints, Washington Portraits, Early American Illustrated Magazines, Early Patents signed by Presidents of the United States. Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 773, New York.

Inquiry No. 6479.—For the manufacturer of small or portable furnace (oil burner preferred) for smelting iron ore.

MANUFACTURERS OF NOVELTIES AND DEALERS.
WANTED to purchase up-to-date novelties suitable for mail order business.
The Agents Novelty Co.
89 Court St., Room 2,
Boston, Mass.

Inquiry No. 6480.—For manufacturers of desiccating machines.

Inquiry No. 6481.—For manufacturers of refrigerators 75 feet in length.

Inquiry No. 6482.—Wanted, catalogues of goods for export.

Inquiry No. 6483.—For parties dealing in collapsible tin or lead tubes with screw caps, such as are used to put up Winsor & Newton oil colors. Carter's and other pastes, blackings, etc.

Inquiry No. 6484.—Name and address of good glass worker to make a bent glass tube of special design.

Inquiry No. 6485.—For manufacturers of air hose, open blast, carpet and furniture tools, air hose connections and a small pressure blower.

Inquiry No. 6486.—Address of embroidery machine makers for simple pattern work, lockstitch principle (zig-zag or otherwise).

Inquiry No. 6487.—For manufacturer of ⅛ h. p. gasoline engines, water motors which can be tapped and water pipe in cellar like a meter without stopping the flow of water.

Inquiry No. 6488.—Address of firms handling new scientific toys, such as can be used in illustrating principles in Physics in an interesting way.

Inquiry No. 6489.—Address of parties handling violin maker's tools.

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.
References to former articles or answers should give date of paper and page or number of question.
Inquiries not answered in reasonable time should be repeated: correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.
Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.
Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.
Scientific American Supplements referred to may be had at the office. Price 10 cents each.
Books referred to promptly supplied on receipt of price.
Minerals sent for examination should be distinctly marked or labeled.

(9528) M. L. T. asks: 1. In the so-called "Highlow" lamp, is the small loop of filament which is used for the small candle-power of a greater resistance than the large one? If so, what is its resistance in comparison with the large one? A. We do not know the resistance of the filaments of the "Highlow" lamp, but the resistance of the side which gives the least light must be much greater than that of the side which gives the brighter light. 2. Is a silk watch chain any protection to a watch from its being magnetized when being carried in the pocket? The first person claims that he wears a silk watch chain while working about a machine (which by the way is a 150-kilowatt rotary converter, 550 volts direct current) so that if it should hit the field casting, his watch would not receive the magnetism by its traversing the chain as it would if it were gold. I claim that the material of the chain would not affect the watch becoming magnetized, but if brought near enough to the machine, the watch would receive the magnetism, even if it were in the pocket. I have always read that magnetism had no insulator; according to this, I believe the silk chain to be no protection from magnetism. Will you please state your opinion of this? A. Your friend and yourself seem to be a little mixed in reference to magnetism, silk watch chains, etc. You are right that magnetism passes through space. It has no insulator, excepting iron. It does not traverse a wire at all. It whirls around a wire in which a current of electricity is flowing, and causes the current to move a magnetic needle, and thus makes voltmeters and ammeters possible. Silk on the other hand is an insulator of electricity, not of magnetism. Electricity cannot get off a wire covered with silk. Gold is a conductor of electricity, and if a gold watch chain touched any uninsulated metal which was carrying a current, a man who might touch the chain in that position would receive a shock. If such a chain should touch the field casting only, nothing could happen, since the field casting is not carrying a current of electricity, but is only magnetized.

(9529) J. A. H. asks: Will you kindly explain how voltmeters and ammeters can be read to 1-10 their divisions? A. A scale is usually read to a tenth of a division by estimating the fractional part in tenths with the eye. This is of course not accurate, but the best that can ordinarily be done. The error, with experience, need not exceed a tenth. Sometimes voltmeters and ammeters are provided with shunts, which change the value of a division of the scale. Thus you can have a shunt made which will make one division have one-tenth of its present value. This will be much better than to estimate by the eye the fractional part of a division indicated by the pointer.

NEW BOOKS, ETC.

THE BIBLE IN PRACTICAL LIFE. Being the Proceedings of the Second Annual Convention of the Religious Education Association, held in Philadelphia, Pa., March 2 and 4, 1904. Chicago: Executive Office of the Association, 1904. 8vo.; pp. 640.

The papers contained in this volume cover very completely the subject in hand. Many of them are by leaders in the religious thought of the country, and the information contained in the lectures will be found invaluable to all who have to do with the teaching and studying of the Bible.

THE NATURE OF THE STATE. By Dr. Paul Carus. Chicago: The Open Court Publishing Company, 1904. 12mo.; pp. 52. Price, 15 cents.

Dr. Carus is the author of a long list of works on religion and ethics. Seven papers are here presented dealing with the evolution of the state, its present condition and standing, its rights and its limitations.

CRANIO-MUSCULAR ORIGINS OF BRAIN AND MIND. By Philip H. Erbés. Chicago: Promethean Publisher, no date. 16mo.; pp. 240. Price, $1.20.

The author is well known in his special line, and he pretends to no exhaustive treatment of the evolutional origins of brain and mind. The author believes that it is only by conforming to reality, visible and invisible, that we can ever hope to place life and conduct upon a sound basis. The entire book is avowedly committed to carrying the law of evolution to the limit.

THE TELEPHONE SERVICE. Its Past, Its Present, and Its Future. By Herbert Laws Webb, M.I.E.E. London and New York: Whittaker & Co., 1904. 16mo.; pp. 118. Price, 40 cents.

The author is a well-known electrical engineer, and it has been his endeavor to describe in plain language the general features of a modern city telephone system, and the principles which govern the cost of production of the telephone service. The difficulties which arise in the working of the service are many, and this is chiefly responsible for the acrimony with which complaints against the telephone service are usually tinged. These discussions are, in many cases, marred by lack of knowledge on the part of the participants, not alone of the technical details, but of the fundamental principles of an extremely technical industry. It has been the aim of the author to try and convey intelligently to the lay mind the broad principles which underlie the telephone service, and in this he has succeeded most admirably.

LE TURBINE A VAPORE ED A GAS. By Giuseppe Belluzzo. Milan: U. Hoepli, 1905. 8vo.; pp. 413. Price, $2.50.

The author of this Italian treatise on turbines shows a remarkable familiarity with both the theory and practice of turbine engineering. He shows an excellent knowledge of the mathematical phase of the subject, and we doubt if there is any treatise in English which in any way approximates this work. We hope that it may soon be translated and given to English-speaking readers.

BUSINESS SHORT CUTS IN ACCOUNTING. BOOK-KEEPING, CARD-INDEXING, ADVERTISING, CORRESPONDENCE, MANAGEMENT. Detroit: The Book-Keeper Publishing Company, Ltd., 1904. 18mo.; pp. 157. Price, $1.

In the present volume we find short cuts in figures, calculations, accounting, advertising, correspondence, bookkeeping, filing, credits, collections, selling methods, etc. The expert systematizer is in greater demand than any other business expert. His is the most lucrative of the newest of all professions. He is welcome wherever he goes, and his large fees are seldom begrudged, because in the end he is a money-saver of large caliber. The present book is filled with admirable suggestions, which might be adopted with success by many concerns. The book has been arranged by the board of experts of the Book-Keeper and Business Magazine of Detroit, Mich.

THE NAVAL POCKETBOOK. By Sir W. Laird Clowes. London: W. Thacker & Co., 1904. Pocketbook size; 972 pp. Price, $3 net.

This little work is always welcome, and it divides the honors with the more pretentious books of Jane and Brassey. Special attention has been given to the submarine boats of the world. The notes on torpedoes are also interesting. The list of drydocks is most comprehensive, and the trial trip tables will certainly be of use to all who are in any way engaged in conducting such tests. The illustrations are numerous and accurate. The book is one that we can recommend as a concise compendium of naval matters.

THE FOUNDATION OF ALL REFORM. A Guide to Health, Wealth, and Freedom. By Otto Carqué. Chicago: Kosmos Publishing Company, no date. 18mo.; pp. 76. Price, 50 cents.

The present volume advocates the superiority of the fruitarian diet, and the book will undoubtedly prove of interest to those who are in favor of this diet.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending January 24, 1905

AND EACH BEARING THAT DATE

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

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Adjustable table, L. Stengel	780,829
Advertising device, M. L. Hinchman	780,883
Air and gas supply apparatus, J. E. Truckses	780,543
Air brake mechanism, H. N. Ransom	780,813
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