

## RECENTLY PATENTED INVENTIONS.

## Electrical Apparatus.

**ELECTRIC ARC LAMP.**—PETER H. F. SPIES, Mount Vernon, N. Y. The carbon in this arc-lamp is engaged by a feed-clutch, the action of which is controlled by a special mechanism. The lower carbon is inclosed by a globe. A gas-check plate is provided, together with means for regulating the arc and accommodating the lamp to the voltage across the arc, these means being adjustable to lengthen or shorten the operative path of the feed-clutch by increasing or decreasing the distance between the feed-clutch and the gas-check. When the clutch is released the upper carbon moves down gradually, without shock. The form of gas-check employed serves to increase the light of the carbon; for, the air entering the globe through the check, passes successively through several chambers and is heated before reaching the interior of the globe.

**ELECTRIC SWITCH.**—PETER H. F. SPIES, Mount Vernon, N. Y. This electric switch for arc-lamps and switchboards is arranged to make and break the circuit positively. By means of the switch a lamp can be readily lowered to renew the electrodes without the slightest danger to the operator and without throwing other lamps in the series out of circuit. The switch comprises a receiving socket, a contact plunger for engagement with the socket, a series circuit, a local or loop circuit, and a cut-in device so arranged that when the plunger and socket move out of engagement, and the local circuit is broken, then the cut-in device maintains the series circuit unbroken or closed. The circuits have flexible and compressible contacts, each composed of a number of interlocked helices.

## Engineering Improvements.

**LUBRICATOR.**—CHARLES SLATER, Portland, Me. Mr. Slater's lubricator is designed to keep the lubricant used for steam-chest valves, pistons, and the like, in a warm or flowing condition, to insure a thorough lubrication of the parts at all times. The lubricator consists of an oil-cup surrounded by a jacket. Between the cup and jacket is a hot-air space. A steam-pipe extends through the jacket. At the upper portion of the steam-pipe is a pressure-operated valve. The steam-pipe communicates with a condenser, from which a pipe leads into the oil-cup. The oil passes from the cup to the steam-pipe through a tube. The steam condensed in the condensing-cylinder flows into the lower portion of the oil-cup, thus displacing a certain quantity of oil. This displaced oil passes to the parts to be lubricated.

**ROTARY ENGINE.**—CARL C. JENSEN, 15 Haregade, Copenhagen, Denmark. The present invention refers to improvements in rotary engines, by means of which the period of admission or cut-off and the period of expansion can be easily regulated and the direction of the motion readily reversed. These results are obtained by means of a main slide-valve, arranged adjustably on the rotary shaft, in combination with an expansion slide-valve placed between the main slide-valve and the shaft, and with steam-passages extending through the rotary shaft itself.

## Mechanical Devices.

**ORE-CONCENTRATOR.**—CHRISTOFFER A. CHRISTENSEN, Sixth and Morrison Streets, Portland, Ore. As the crushed ore is fed from a suitable hopper to the feed-end of a concentrating pan, power is applied to a pulley carried on an eccentric shaft connected with the pan. Thereby the pan is vibrated from side to side, and the ore gradually works its way down. All the heavy and valuable particles are shaken to the bottom of riffles, and find their way through perforations in front of and at the bottom of each riffle. Then the concentrate falls upon a laterally-inclined washer-plate and is washed down by means of a spray-pipe.

**WINDMILL.**—JOHN R. E. BYRNE, Tilden, Tex. The invention is an improvement for supporting the wheel and operating shafts. Novel features are to be found in the means for throwing the controlling devices into and out of engagement with the wheel, and in the general construction of the wheel itself. The most important feature, however, is an all-lever shut-off, which is not affected by any ordinary wear, and the weight which adjusts the brake clear of the wheel can be conveniently regulated to any extent. This weight also holds the wheel at right angles to the vane.

**SELF-PLAYING STRINGED MUSICAL INSTRUMENT.**—FRIEDRICH SCHNEIDER, Leipzig, Saxony, Germany. The inventor has devised a mechanically-actuated stringed musical instrument which is strong and simple in construction, and which requires but little power to drive the note-sheet uniformly. This note-sheet operates the device for picking the strings, and the device for fingering the strings so as to produce the desired music with comparatively few strings stretched over a sounding board.

**BOTTLE-FINISHING MACHINE.**—WILLIAM P. PARSONS, Albany, Ind. The patent describes a machine by means of which the interior and exterior of glass bottle-necks are simultaneously and quickly finished. The bottle to be finished is held in a frame, the handle of which is supported on grooved rollers arranged in standards. The neck of the bottle is placed over an interior-finishing device. By

means of a treadle a check or sleeve is shifted forward to move exterior-finishing devices into close contact with the bottle-neck. The pressure is regulated by the pressure on the foot-treadle. In order to finish the bottle the shafts by which the finishing devices are rapidly rotated, one independently of the other.

**BELLOWS FOR ROCKING-CHAIRS.**—CHRISTIAN U. KRIEG, Sr., Nashville, Tenn. Beneath the rocking-chair a pair of bellows is secured, having an inlet operated by the chair, and outlet valve-chambers, connected by a tube. A valve in this tube controls the passage of air from one to the other of the outlet-chambers. The bellows has a lower box, adapted to receive an ice-receptacle, by means of which the air can be cooled. The back and forward motion of the chair, while being rocked, supplies cooled air. But this motion renders bellows of the ordinary construction having stiffened sides useless for the inventor's purpose. A bellows of peculiar construction has therefore been invented to meet the special requirements of the case.

## Miscellaneous Inventions.

**HITCHING DEVICE.**—NOAH L. DALLARD, Wheeling, W. Va. The hitching device comprises, essentially, a pair of tongs, which are closed by drawing the handles together. These handles are connected by a chain with the horse's bridle. Hence, the device can be applied to any suitable projection in order to hold the horse; for, a pull upon the handles merely forces the tongs further into the object gripped. A coiled spring holds the tong members together, so that when the chain is slack the device will not fall to the ground.

**SCRUBBING-BRUSH HOLDER.**—JOHN L. DONNELLY and JOHN S. BRADY, Wilkes-Barre, Pa. The scrubbing-brush holder has a reservoir provided with a perforated bottom through which water may pass to the brush. The reservoir is replenished through a top filling-hole having a sliding cover. The brush can be readily removed from the holder and another inserted.

**HEATER OR COOLER FOR LIQUIDS.**—GABRIEL J. L. HENRY, Quebec, Quebec, Canada. The heater or cooler comprises a tank, above which a receptacle is located having an opening leading to the tank. Within the receptacle is a rotatable cylinder, secured to the upper portion, on the inside of which are buckets or vanes. Against these buckets the liquid is discharged. To the outer surface of the cylinder a liquid is fed of a temperature different from that of the jets discharged from the buckets. The rotation of the cylinder is advantageous for the reason that it spreads the liquids on the cylinder-surface so as to secure a large heating or cooling area.

**MULTIPLYING PHOTOGRAPHIC CAMERA.**—JACOB F. STANDIFORD, Fort Scott, Kans. Mr. Standiford has devised a multiplying photographic camera by means of which a number of exposures can be made upon a single plate. The construction of the camera is such that upon moving the ground glass into or out of focusing position the shutter is automatically opened and closed without requiring the re-insertion of the slide and without danger of exposing the plate to the action of light during the movement of the ground glass.

**TIRE-CEMENT.**—JOHN H. BENNETT and ALONZO F. BEMAN, Ridgway, Pa. The tire-cement rapidly repairs any leak or injury in pneumatic tires used upon bicycles, carriages, automobiles or other conveyances. The ingredients of the cement are wheat-flour, lamp-black, potassium permanganate, together with a suitable quantity of water, the whole forming a paste of unusual adhesive qualities.

**CEILING STRUCTURE.**—BALTHASAR MATBACH, Manhattan, New York city. This fireproof ceiling structure consists of a girder formed of opposite members of metal. Each member consists of a lower, straight bar-like section, an upper section and a downwardly arched intermediate portion, a brace-member secured in the arched portion, and tie-rods connecting the opposite members. After placing the girder members in position, a filling of cement is employed to strengthen the construction.

**DEVICE FOR TREATING DISEASES OF THE EAR.**—MIKE POLICH, Riverside, Cal. The invention provides a means for treating diseases of the ear, the means comprising a sheet of fabric rolled into tubular form. This fabric bears certain medicaments, so that when the fabric is ignited the medicaments will be applied to the diseased parts.

**SHIP'S COMPASS.**—HINRICH BRUNS, Bremen, Germany. Compasses in general use do not enable the helmsman to follow a course between two divisions on the compass card. In such cases the helmsman must rely upon his eye and his good judgment for the measurement of a fractional part of a marked division. The present invention enables the helmsman to follow a true course without tiring his eye. An adjustable plate is provided on the compass-plate, which plate has an auxiliary steering-line or point adjustable to the right or to the left of the fixed steering-line or point. This adjustable line can be used instead of a fixed line whenever the course is such that it cannot be read exactly on the compass card.

**GARMENT HANGER.**—LOUIS YONTEFF, Manhattan, New York city. This garment-hanger is a simple, durably-constructed device for supporting trousers, coats, vests, skirts, and wearing apparel in general. The hanger

is easily extended, hung up or readily folded into a comparatively small space.

**FLOWER-HOLDER.**—SIMON WEILER, Manhattan, New York city. The object of the invention is to provide a flower-holder that can be attached to any part of the dress to hold a bunch of flowers in any desired position. The holder comprises a bar having a fastening device by which it is secured to the dress. A pin on the bar extends approximately parallel to and in the direction of the length of the bar to receive the stems of a bunch of flowers. Ribbons on the bar can be passed in front of the stems and tied in a bow.

## Designs.

**HOLDER FOR NECKTIE-BANDS.**—ZALAL GUZIK, Manhattan, New York city. The holder consists of a back-plate terminating in a needle and a sheath in front of the plate.

**MANTEL.**—CLAY B. ATKIN, Knoxville, Tenn. Two design patents have been issued for mantels. In the first the lower portion of the mantel has a shelf provided with an ovolo molding and beaded fillet, below which is a horizontal panel provided with a central ornamentation consisting of a floral harp-shaped figure and two diverging, lateral, floral portions. The upper portion of the mantel has a fixed central piece provided with a partly floral and partly arabesque ornamentation. Below this is a shelf and side-panels having ornamental floral figures. Two vertical columns flank the central panel.

In the second design the lower portion of the mantel has an ornamented shelf, as in the previous case, and the panel below it has a double ornamentation in relief, which simulates the fleur-de-lis; also horizontal ribs, above and below. The upper portion of the mantel has a top edge, with curved ends, provided with floral decorations at center and sides. A shelf having a beaded fillet and ovolo molding is arranged below, and beneath this is a panel or mirror, and on the sides of the same is a curved or S-shaped floral relief. Two columns are arranged as in the previous case.

**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.

## NEW BOOKS, ETC.

**THE ELECTRO-MAGNET.** By Townsend Wolcott, A. E. Kennelly and Richard Varley. Jersey City, N. J.: The Varley Duplex Magnet Company. Pp. 130. Price \$1.

This little book, a second edition of which has recently been issued, is excellent for obtaining a thorough knowledge of the theory and practice of the electro-magnet. It is well illustrated, and contains a number of tables giving the electrical properties of copper magnet wire. Numerous mathematical formulae are given and their application illustrated by the use of practical examples. A set of logarithmic tables is appended, together with a scale, by means of which, in connection with the tables, any root or power of any number can immediately be found.

**HOW TO BUILD A SKIP-JACK.** Reprinted from the Rudder. New York and London: The Rudder Publishing Company. 1901. Pp. 38, 24 plates and engravings. Price \$1.

**HOW TO BUILD A RACER FOR \$50.** Reprinted from the Rudder. New York and London: The Rudder Publishing Company. 1901. Pp. 52, 36 plates and engravings. Price \$1.

These two excellent little volumes will be welcomed by the amateur yachtsman whose purse or inclinations tie him down to miniature craft. The racer is that curiosity of yachting architecture known popularly as the "Lark," which, while not a perfect craft, is justly considered as being, for "what she costs in labor and money, the best thing that ever carried sail."

The skip-jack is a compromise between the flat and round bottom craft, which has the twofold qualities of being easy to build and speedy to sail. Both of these works are written in the clear style characteristic of The Rudder, and they are so amply illustrated that he must be a poor carpenter who cannot, with the aid of proper tools and material, put one of these boats together.

**SCHERZER ROLLING LIFT BRIDGES.** Second revised and enlarged edition. By Albert H. Scherzer. Chicago, Ill.: The Scherzer Rolling Lift Bridge Company. 1901. Oblong quarto. Text 68 pp., with numerous line drawings and 23 plates. Price \$10.

This handsome work opens with a short chapter on the history of pivoted or trunnion bascule bridges. After a reference to the Tower Bridge, London, and other developments of the pivot or trunnion bascule bridge, it enters into a general argument of the disadvantages of the swinging bridge and other high and low level methods of crossing navigable rivers and streams, and then passes on to a detailed description of the Scherzer rolling lift bridge, views being shown of the various existing structures which have been built on this well-known system. This handsome work is elaborately illustrated by numerous diagrams and line drawings and by twenty-three full-page photogravure plates.

## 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 your name and address to the party desiring the information. In every case it is necessary to give the number of the inquiry.

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**Inquiry No. 146.**—For a description of the Bogarus mill, used in graphite works at Ticonderoga, N. Y.

**WATER WHEELS.** Alcott & Co., Mt. Holly, N. J.

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Yankee Notions. Waterbury Button Co., Waterbury, Ct.

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Metal Novelties Manuf'd. Bliss-Chester Co., Prov., R. I.

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Finest quality Steam Engines, Boilers and Burners for Automobiles. Write Rochester Cycle Mfg. Co., Rochester, N. Y.

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**Inquiry No. 151.**—For pinless clotheslines.

Ten days' trial given on Daus' Tip Top Duplicator. Felix Daus Duplicator Co., 5 Hanover St., N. Y. city.

**Inquiry No. 152.**—For machinery for weaving wire mattresses.

Rigs that Run. Hydrocarbon system. Write St. Louis Motor Carriage Co., St. Louis, Mo.

**Inquiry No. 153.**—For fire engines and appliances suitable for fighting fire in small towns.

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

**Inquiry No. 154.**—For manufacturers of water meters.

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. 155.**—For sanitary household furnishings.

Wanted—Revolutionary Documents, Autograph Letters, Journals, Prints, Washington Portraits, Early American Illustrated Magazines. Correspondence Solicited. Address C. A. M. Box 773, New York.

**Inquiry No. 156.**—For the smallest sized dynamos and motors.

Machine Work of every description. Jobbing and repairing. The Garvin Machine Co., 141 Varick St., N. Y.

**Inquiry No. 157.**—For machinery for printing in colors on oilcloth dollies and similar goods.

La Porte Watch School, La Porte Ind. Catalogue free.

**Inquiry No. 158.**—For an organ small enough to be carried on journeys, but to be played by hand in the ordinary manner.

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

**Inquiry No. 159.**—For the manufacturer of autographs.

**Inquiry No. 160.**—For the address of the Columbia Carbide Company, in New York city, or similar concerns.

**Inquiry No. 161.**—For gasoline gas generators for heating and lighting purposes.

**Inquiry No. 162.**—For manufacturers of small wooden hardwood boxes, 2 by 4 up to 4 by 4 inches.

**Inquiry No. 163.**—For filtering apparatus that will filter a starchy liquid rapidly.

**Inquiry No. 164.**—For builders of gasoline motors for automobiles.

**Inquiry No. 165.**—For the address of the manufacturers of the "Lambert" gas and gasoline engines.

**Inquiry No. 166.**—For small gasoline or other motors suitable for experimental purposes.

**Inquiry No. 167.**—For manufacturers of agricultural machinery.

**Inquiry No. 168.**—For parties willing to undertake the manufacture of a steel novelty in three thicknesses, 1/4 by 3/4 inches.

**Inquiry No. 169.**—For rimmers' machinery.

**Inquiry No. 170.**—For boiler makers' machinery.

**Inquiry No. 171.**—For ornamental woodwork for furniture, made by pressing the figures on the wood.

**Inquiry No. 172.**—For fine needles or pins for lace-curtain frames.

**Inquiry No. 173.**—For machinery for manufacturing buckets, pails, etc.

**Inquiry No. 174.**—For machinery for making wood toothpicks.

**Inquiry No. 175.**—For manufacturers of a mill or process for extracting potash from cottonseed meal hulls.

**Inquiry No. 176.**—For tools for the removal and replacing of boiler tubes, also boiler flue cutters, expanders and benders.

**Inquiry No. 177.**—For parties willing to manufacture a new computing scale.

**Inquiry No. 178.**—For manufacturers of solder for fastening aluminium to aluminium or copper to aluminium.

**Inquiry No. 179.**—For manufacturers of small ice machines suitable for home use.

**Inquiry No. 180.**—For the distributors of the "Arlington" rubber collars and cuffs.

**Inquiry No. 181.**—For parties who can make soft wood shoe knife handles, enameled brown and in imitation of walnut.

**Inquiry No. 182.**—For automatic grinding machines for grinding cutters' knives.

**Inquiry No. 183.**—For rubber prepared for vulcanizing, about the thickness of a lead pencil.

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**Inquiry No. 185.**—For "Harry's" electrical retouching device, for retouching photographic negatives.

**Inquiry No. 186.**—For manufacturers of liquid fire extinguishers and hand grenades.

**Inquiry No. 187.**—For canning machinery.

**Inquiry No. 188.**—For condensed milk machinery.

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**Inquiry No. 190.**—For Portland cement machinery.

**Inquiry No. 191.**—For automatic numbering machines.

**Inquiry No. 192.**—For rubber type daters.

**Inquiry No. 193.**—For Britannia metal and sterling silver blanks ready for spinning.

**Inquiry No. 194.**—For spinning lathes.

**Inquiry No. 195.**—For the address of Chas. Platt, silver roller.

**Inquiry No. 196.**—For glass novelties, such as peppers and salts for ornamenting with silver.