

## RECENTLY PATENTED INVENTIONS.

## Mechanical Devices.

**ORE WASHER AND SEPARATOR.**—HENRY P. HOLDEN, Washington, D. C. This apparatus, which is intended for use in placer mining, is designed for treating the ores in large quantities. The invention embodies various novel features by which to increase the capacity of such apparatus. The improvements relate to the construction and arrangement of the different parts of the apparatus, including the riddle, screen and hopper, as well as to the rake, which is counterbalanced and operated in one direction by a suspended weight.

**BAND-SAW MILL ATTACHMENT.**—ZEBULON Z. LINTON, Fernwood, Miss. This attachment relates to feed-out devices, and embodies novel features to the end that springy timber will be prevented from clamping the band-saw, and the timber will be held in proper alignment as it passes from the saw, so as to insure uniform and straight lumber. A spring-seated kerf-guide yielding laterally to heavy pressure allows springy timber to follow the proper course.

**OIL-CAN.**—WILLIAM L. HOWLAND, Monmouth, Ill. This oil-can has a piston pump attached to force out the oil in an ample, steady stream. The can spout at its inner end enters the lower end of the pump cylinder, and a single valve controls the inlet to the cylinder and the outlet to the spout.

## Agricultural Implements.

**DRAFT EQUALIZER.**—HENRY CARPENTER, Edmond, Oklahoma. The distinguishing feature of this equalizer is a bar called by the inventor a "pusher bar," which is pivoted to the eveners and ranges rearwardly in a diagonal direction against the tongue, connections being provided for effecting, through the medium of the pusher bar, an equalization of the draft of two, three or more horses.

**HARVESTER REEL.**—EDWARD O. BECKMAN, Piper City, Ill. This inventor has devised a reel in which the blades are connected with the shaft by parallel connecting bars so that the parts fold after the manner of a parallel ruler. Adjusting bars connect with the blades and with a sliding collar on the shaft. The reel is adapted to be easily detached and to be folded into small compass, for economizing shed space.

## Wagons and Harness.

**VEHICLE RUNNING GEAR.**—JOHN E. YORK, inventor. The purpose of the running gear devised by this inventor is to prevent side lash on the pole and to enable the wheels to readily surmount stones or like obstructions. The front wheels are mounted on stub axles formed centrally on spider-frames, two vertically aligned arms of which are pivoted to the axle, the remaining two arms of the spider being pivoted to transverse links which connect the spiders at opposite ends of the axle. The invention, we understand, has proved advantageous on wagons bearing heavy loads. Particulars may be had from George M. Pillsbury, Lowell, Washington.

**HORSE-COLLAR FASTENER.**—JOHN H. EMERSON, Quincy, Ill. In this ingenious collar fastener, the connecting billet at the meeting ends of the collar is fastened at one end by a buckle, by which the necessary adjustment to the neck of the animal is obtained, and this adjustment is not again disturbed in removing or placing the collar. To the opposite end of the billet is secured a slotted plate and a stay strap. The plate is slipped over a staple on the collar and the stay strap passed through the staple. Thus the collar may be quickly placed on the animal or removed without disturbing the buckle connection.

## Household and Culinary Devices.

**LID HOLDER FOR VESSELS.**—BENJAMIN F. KOCH, Brooklyn, New York city, and JOHN W. COGSWELL, Hoboken, N. J. The device forming the subject of this patent is designed to hold the lid on a cooking vessel while pouring liquid contents therefrom. The holder is in the shape of a frame with hooks for engaging the flange of the vessel, finger-pieces for engaging and releasing the hooks, a spring for normally holding the hooks engaged, and a handle portion to aid in tilting the vessel.

**FRAME FOR MOSQUITO CANOPIES.**—LOTTMAN BROTHERS MANUFACTURING COMPANY, Houston, Tex. The latest patented improvement in the very useful canopy frames of this company is ingeniously and simply constructed of wire and in a manner to give the side-arms the form of braced cantilevers with the strength to maintain the canopy frame in the proper position and sustain it against downward strain.

**BROILER.**—ADRIEN TENU, Manhattan, New York city. In the ordinary broiling devices that are adapted to contain a charcoal or like fire, and used, by hotels largely, in lieu of broiling over ranges or the like, the fire is very destructive on the broiling grate, and the inventor mentioned has provided for lessening this destructive action by arranging a sliding grate, and the casing is arranged so that the hot coals may be raked under the grate in one position, while when not in use the grate is not subjected to the intense heat of the coals.

**SCRUBBER.**—MARY N. VAN DERBECK, Lincoln, Neb. A unique scrubbing device has been patented by this inventor, whereby an ordinary

scrubbing brush is clamped in a head having a pivoted handle and a wheel or roller to run on the floor at the rear of the clamping head. The roller serves to hold the brush level as the device is forced over the floor, and also bears a part of the thrust incident to the manipulation of the device.

## Miscellaneous Inventions.

**CARVING OR DELINEATION MACHINE.**—ARTHUR C. FÉRON, Manhattan, New York city. In this machine a tracer traverses and follows the lines of a drawing or model, and a pencil or carving tool reproduces the lines followed by the tracer, but in a reverse position. The invention provides a most useful instrument where a plurality of figures of the same kind are to be reproduced and it is necessary to first reproduce from an original a reversed design and then use this as a pattern. In the Féron device there is a central elongated guideway, suspended as from a ceiling, and from a central pivot moving in the guideway, arms project at opposite sides and carry the tracer and the pencil or rotating carving tool, novel links and braces being provided to project like the main arms, on opposite sides from pivots traveling in the guideway.

**BOOK HOLDER AND LEAF TURNER.**—CLARK W. HADLOCK, Newton, Kans. This invention is especially intended for use by railway conductors, more particularly on freight trains, where frequent turning of the leaves in both directions is necessary in making up the complicated record of freight. The frame is adapted to secure the train book on the usual writing board, and so that the board can be held on the conductor's arm unaffected by the motion of the car and the leaves be readily turned as required.

**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 MEASUREMENT OF GENERAL EXCHANGE VALUE.** By Correa Moylan Walsh. New York: The Macmillan Co. 1901. 8vo. Pp. 580. Price \$3.

The author deals with the Nature of Exchange Values, the Correlation of Exchange Values, on the Measurement of General Exchange Values, Selection and Arrangement of Particular Exchange Values, Mathematical Formulation of Exchange Value Relations, the Question of the Means and Averages, Brief Comparison of the Means, the General Argument for the Geometric Means, Review of the Arguments for the Harmonic and Arithmetic Averages of Price Valuation, the Method for Constant Sums of Money, the Method for Constant Mass-Quantities, the Universal Method, the Doctrine of the Conservation of Exchange Value and the Measurement of Exchange Value in All Things, and, lastly, the Utility of Measuring the Variations in Exchange Value of Money. The author uses mathematics freely, and the book will prove interesting to political economists.

**HAND BOOK OF PRACTICAL MECHANICS FOR USE IN THE SHOP AND DRAFTING ROOM.** By Charles H. Saunders, Ph. D. Boston, Mass. 1901. 16mo. Pp. 227. Price \$1.

A full index gives a clew by which any of the tables and formulæ can be found. The tables are particularly valuable. The book varies greatly in typographical excellence. Many of the tables seem to have been prepared by photo-engraving. The book will prove of real assistance to mechanics and engineers in their everyday work.

**LES AUTOMOBILES ELECTRIQUES.** Par Gaston Sancier and A. Delasalle. Avec un préface de Charles Jeantaud. Paris: Vve. Ch. Dunod. 1901. Pp. 390.

The authors have produced a work on automobiles, which, without being too technical, describes various forms of electric carriages and trucks with an exhaustiveness that will be appreciated, particularly by the makers of electric carriages. It is to be regretted, however, that the admirable printing of the work is somewhat marred by cuts which are not often very clear. The book is to be welcomed, on the whole, as a valuable addition to the literature of the automobile. Particularly interesting is the chapter dealing with the various types of storage batteries.

**LA SÉRIE DE TAYLOR ET SON PROLONGEMENT ANALYTIQUE.** Par J. Hadamard. Paris: C. Naud. 1901. 16mo. Pp. 102. Price 50 cents.

**PRODUCTION ET EMPLOI DES COURANTS ALTERNATIFS.** Par L. Barbillon. Paris: C. Naud. 1901. 16mo. Pp. 103. Price 50 cents.

We have frequently had occasion to comment upon the admirable series of "Scientia" monographs published by Carré and Naud. The present two volumes maintain the high standard set by the previous works. The new light thrown by M. Hadamard on Taylor's formula will do much to illuminate a difficult mathematical problem. His work is scholarly, and for the mathematician decidedly interesting.

Dr. Barbillon's book is written for the electrical engineer, and is devoted to a mathematical discussion of alternating currents, which is thorough and scientific.

## 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. 1133.**—For dealers in second-hand books.

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

**Inquiry No. 1134.**—For manufacturers of saw and milling machinery.

TURBINES.—Lefel & Co. Springfield, Ohio, U. S. A.

**Inquiry No. 1135.**—For machinery for packing small nails.

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

**Inquiry No. 1136.**—For an automatic machine for knurling and curling thimbles and trimming flanges.

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

**Inquiry No. 1137.**—For broom-making machinery.

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

**Inquiry No. 1138.**—For manufacturers of portable houses.

Machine chain of all kinds. A. H. Bliss & Co. North Attleboro, Mass.

**Inquiry No. 1139.**—For portable wooden buildings.

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

**Inquiry No. 1140.**—For new and second-hand knitting machines for making men's half hose.

For Sheet Brass Stamping and small Castings, write Badger Brass Mfg. Co., Kenosha, Wis.

**Inquiry No. 1141.**—For the manufacturers of the "Nickel-in-the-slot" peanut machines.

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

**Inquiry No. 1142.**—For manufacturers of novelties.

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

**Inquiry No. 1143.**—For manufacturers of corrugated steel diaphragms for use in ammonia pressure reducing valve.

SAWMILLERS.—With variable friction feed. Send for Catalogue B. Geo. S. Comstock, Mechanicsburg, Pa.

**Inquiry No. 1144.**—For parties in Canada to manufacture grate boxes.

Machinery designed and constructed. Gear cutting. The Garvin Machine Co., 149 Varick, cor. Spring Sts., N. Y.

**Inquiry No. 1145.**—For parties dealing in heavy hydraulic tubing for hollow shafting. The size to be 3 1/2 inches outside diameter, walls 1/2 inch or 3/4 inch thick, to turn down to 3 inches diameter.

See our Collective Exhibit—Section "S." Electricity Building, Pan American Exposition. Standard Welding Company, Cleveland, Ohio.

**Inquiry No. 1146.**—For manufacturers in Canada of large toys, wagons, stepladders, etc.

To Patentees. Wanted to manufacture article which will retail to lady consumers for about \$1.00 leaving good margin of profit.—C. S. O., Box 773, N. Y.

**Inquiry No. 1147.**—For manufacturers of saw benches for sawing sheet brass and copper.

FOR SALE.—New process for making oil with fish and fish offal is offered for sale or licenses in United States of America. Address Foreign, Box 773, New York.

**Inquiry No. 1148.**—For manufacturers of electric shoe polishing apparatus.

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

**Inquiry No. 1149.**—For manufacturers of balloons.

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. 1150.**—For manufacturers of novelties in Canada.

WANTED.—A thoroughly competent engineer to push in United States of America a new, efficient and economical process, for dealing with large benefit towns' sewage and refuse waters from industry. Address France, Box 773, New York.

**Inquiry No. 1151.**—For dealers in roots and herbs.

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. 1152.**—For parties to make special machinery for weaving wire fences.

WANTED.—Punch and die work, press work and light manuf'g. Daugherty Novelty Works, Kittanning, Pa.

**Inquiry No. 1153.**—For manufacturers of flagstaves for small toy flags.

WANTED.—Souvenirs, premium goods, toys and Christmas novelties. Sherman, Arch Co., 142 Merrimac Street, Boston, Mass.

**Inquiry No. 1154.**—For manufacturers of wood for the frame of box kites.

**Inquiry No. 1155.**—For manufacturers or dealers in Spanish tile roofing.

**Inquiry No. 1156.**—For a bag fastener known as the "Boss Fastener."

**Inquiry No. 1157.**—For manufacturers of machinery for making cardboard pie plates, butter dishes etc.

**Inquiry No. 1158.**—For manufacturers of gas engines in New York City.

**Inquiry No. 1159.**—For manufacturers of machines for making wooden pegs for shoes.

**Inquiry No. 1160.**—For manufacturers of ice machines.

**Inquiry No. 1161.**—For manufacturers of electric dynamos.

**Inquiry No. 1162.**—For address of parties having Swedish anvils for sale.

**Inquiry No. 1163.**—For dealers in second-hand turning lathes and drill presses in Chicago, if possible.

**Inquiry No. 1164.**—For manufacturers of a condenser 1/2 to 1 microfarad capacity.

**Inquiry No. 1165.**—For manufacturers of air pumps and compressors.

**Inquiry No. 1166.**—For dealers in elevating machinery for elevating grain and feed, and machinery for cleaning oats.

**Inquiry No. 1167.**—For manufacturers of electrical heating apparatus.

**Inquiry No. 1168.**—For manufacturers of models of locomotives made of cardboard.

**Inquiry No. 1169.**—For manufacturers of coffee roasters of about 150 pounds capacity and a cooler for same.

**Inquiry No. 1170.**—For the present address of the Farmers' Handy Wagon Company.

**Inquiry No. 1171.**—For manufacturers in the United States of a mechanical apparatus used for loading coal inside the pits.

## Notes &amp; 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.

(8295) P. C. T. writes: I would like instructions for making a simple, very cheap and easily made galvanometer for measuring currents from 1 to 4 Leclanche cells if you have papers having such instructions. A. We have no paper giving instructions for just the instrument you require. SUPPLEMENT No. 1215, price 10 cents, gives a voltmeter and an ammeter which you might modify to your needs. Bottone's "Electrical Instrument Making for Amateurs," price 50 cents by mail, contains descriptions of these instruments as well as many others.

(8296) C. P. R. asks: May I trespass on your valuable time with a query with hope of answer? It was recently stated that at Bahrein, on the southwest coast of Persia, on the Persian Gulf, the natives obtain their supply of fresh water from springs at the bottom of the Gulf more than a mile from shore, and that divers go down 200 feet, fill their goatskin bags or sacks with fresh water as it bubbles from the springs at the bottom, and bring it to the surface without allowing the salt water to mix with it. The article further stated that no one knows how the natives learned of the supply, but that the water had been taken in that way probably for centuries. Now can and will you give me any light on this matter, as to the probability or improbability of the water supply coming from such a source and being secured in such a manner? A. There is nothing impossible nor improbable in the statement that fresh water is collected from springs which come up through the earth at the bottom of salt water. We personally know several places where pump logs have been put down into such springs and fresh water is pumped up through the salt water. The only improbable point in the story which you quote is in regard to the distance to which the men descend under water to secure the fresh water. Submarine divers have not gone below 200 feet from the surface with the advantage of armor, air supply and weights to sink them. The effort has been made to reach a wreck in 240 feet of water. The accounts state that at 130 feet the diver began to experience serious trouble. At 200 feet, after suffering terribly, he lost consciousness and was hauled up. Divers cannot work much below 100 feet. It is very improbable that men can be in the habit of descending 200 feet below the surface of the ocean.

(8297) W. H. asks: Could you inform me what is the best coating for the glass plates of static machines, whether shellac varnish or other varnish? I have been using bleached shellac varnish and it blisters and flakes off. A. Shellac varnish is the best coating. The glass must be perfectly clean and dry when the shellac is applied. A very slight trace of grease, such as a finger-mark, will prevent the adhesion of the varnish to the glass. Glass may be cleaned by washing it first in strong sodic hydrate (caustic soda), then in nitric acid, and last in distilled water. It is then allowed to dry. The surface should not be touched by anything, cloth or hands, after it leaves the acid. It will then be chemically clean. Before applying the shellac the glass should be warmed to render it perfectly dry. If these directions are followed there will be no trouble with the adhesion of the varnish.

(8298) D. G., Jr., asks how to temper steel dies in imitation of cloth or fine hair line, etc., so as to avoid the scale that appears on the surface of the die. A. Bright-faced dies that are to be kept free from scale in the hardening process should have their faces covered with a layer of hard soap and the die heated face up, which will keep the air from oxidizing the surface. Then it will come out of the hardening bath bright.

(8299) C. B. B. asks: Will you please tell me whether the dynamos described in SUPPLEMENTS 844 and 865 can be used to run electric furnace described in SUPPLEMENT 1182? A. The dynamo of SUPPLEMENT 865 will give current enough for a small electric furnace. A lower voltage is to be preferred, and a dynamo especially designed for such work would be very much better than one which was intended for lighting.

(8300) W. T. B. asks: I would like information in regard to the best manner of placing rods for the protection of buildings from lightning. A. The putting up of a lightning rod is a simple matter and requires very