

is customary to place crucibles in the muffle, back of the cupels, to keep them and the metal sufficiently cool for cupellation; but the placing and adjustment of such crucibles requires a great expense of time and labor, which it is the purpose of this invention to obviate.

ORE-SEPARATOR.—WILLIAM HOOPER, Ticonderoga, N. Y. This device is designed to separate gold from sand or gravel without the use of water. A flexible bed is secured to an inclined frame and is inclined down to the sides.

REIN-SUPPORT.—JOHN G. RYCKMAN, Knappa, Ore. To the bridle a strap is secured by one end, the other end being attached to the hames. A ring is secured to the central portion of the strap, and through the ring the driving-rein passes, whereby a support for the rein will be provided a short distance from and in front of the hames.

EGG-SEPARATOR.—JOHN A. BURNS, Woodbine, Iowa. It is the object of this invention to provide an apparatus for separating eggs from the filling material—bran, oats, etc.—in which they are packed and shipped.

GASOMETER.—WILLIAM F. COOPER, Meriden, Conn. The inventor of this gasometer has sought to dispense with the usual water-seal and to give the bell a larger range of movement to adapt it for acetylene generators.

BARREL-SHIELD.—WILLIAM A. FRASER, Guthrie, Oklahoma Territory. To provide a cover for barrels such as are used in grocery stores, the inventor has devised a shield of tin, zinc, sheet-iron, paper, or other suitable material, plated or japanned in colors and lettered to indicate the contents of the barrel.

CHOKEBORE ATTACHMENT FOR GUNS.—RAN- DOLPH P. CORY, St. Louis, Mo. This device is an improvement on a choke-attachment patented by the same inventor; and the present invention provides a means whereby the fastening strain in securing the choke-attachment to the gun-barrel is exerted in lines parallel with the axis of the barrel and choke-section.

SASH-HOLDER.—SCOTT A. MORROW and JARRET C. HALCOM, Commerce, Tex. In suitable recesses in the stiles of a sash, springs are held so that they will extend in a direction away from the stile and at an oblique angle to the side edges of the stiles.

FOLDING COT.—JAMES H. MARTINDALE, Fort Worth, Tex. The object of the invention is to improve the corner irons or brackets connecting the end and side bars and the legs, so that these parts will be rigidly held in their operative position.

Designs.

BADGE.—HERMANN SCHAEFFER, Brooklyn, New York city. The leading feature of the design consists of a bust picture of Dewey surrounded by a wreath, at the lower portion of which is a spread-eagle, anchor-arms, and two crossed cannons.

DOOR OR WINDOW SECURER.—GEORGE E. JOHNSON, Brooklyn, New York city. The device is designed to be inserted between the jamb and door or between the sash and frame to prevent the door or window from being opened on the outside.

MONUMENT.—JOSEPH OSSOLA, Barre, Vt. Upon the monument are represented a broken plant and a worm at the point of fracture as if the plant had been eaten through.

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Notes & 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.

(7726) H. P. W. asks: Which will stand the heaviest current of electricity, silver, platinum, or Mueset steel, without fusing or burning up? A. Platinum has the highest melting point of any of the metals ordinarily used in electrical work.

(7727) W. R. M. asks the use of and market value of columbium, niobium, or titanium minerals. A. The cost of niobium or columbium, as it is sometimes called, is \$7.50 for a 15 grain phial. Titanium costs \$2.50 for a 15 grain phial.

(7728) C. G. writes: I have a small motor which runs fairly well, but as a dynamo it will give no current at all. Could you tell me why it will not generate a current? A. The reason your small motor will not generate current when run as a dynamo is that its current is too weak to magnetize the fields.

(7729) C. F. T. writes: I write to ask if in your opinion lightning rods are any protection to buildings. A. We are very certain that lightning rods when properly put up are a great protection to any building.

(7730) M. C. W. asks: What is the best solder for to stop a leak in ammonia coils, something that ammonia will not affect. A. Pure tin is the only solder suitable for ammonia joints. It is in general use.

(7731) R. M. asks how can I oxidize brass and copper. A. 1. Dissolve sufficient platinum in aqua regia, and carefully evaporate the resulting solution (platinum chloride) to dryness. The dried mass may

then be dissolved in alcohol, ether, or water, according to the effect which it is desired to produce, a slightly different effect being produced by each of the solutions. Apply the solution of platinum with a camel's hair brush, and repeat the operation as often as may be necessary to increase the depth of tone.

NEW BOOKS, ETC.

THE PSYCHOLOGY OF REASONING. Based on Experimental Researches in Hypnotism. By Alfred Binet. Chicago: The Open Court Publishing Company, 1899. Pp. 188. Price 75 cents.

The publishers have done a signal service in translating the works of Binet and other great psychologists and sending them out in cheap form. We feel sure that this book will appeal to a large number of our readers who are interested in both psychology and hypnotism.

THE SALMON AND SALMON FISHERIES OF ALASKA. Report of the Operations of the United States Fish Commission Steamer "Albatross," for the Year ending June 30, 1899. By Commander Jefferson F. Moser, U. S. N. Washington: Government Printing Office, 1899. Pp. 178.

Like all publications of the United States Commission of Fish and Fisheries, it is a most interesting volume, and is freely illustrated with half-tone engravings. The salmon fisheries have obtained such enormous proportions that the commission is wise in bringing out a monograph on the subject which is exhaustive and important.

THE SOLUBLE FERMENTS AND FERMEN- TATION. By J. Reynolds Green, Sc. D., F.R.S. Cambridge: The University Press. American Publishers: The Macmillan Company, 1899. Pp. 480. Price, \$3.

Various problems connected with the phenomena of fermentation have received remarkable attention during the past few years by many investigators, and the present volume puts in a compact form all the results which have been obtained up to the present time, and it is a remarkably valuable book, and had been needed for some time.

SAJOUS' ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. Vols. II and III. By Charles E. de M. Sajous, M.D., and one hundred and sixty associate editors. Each volume 600 pages. Philadelphia, New York and Chicago: The F. A. Davis Company, 1899. Price \$5.

Very clearly and concisely written, giving a digest of the latest and best facts bearing on the several subjects treated of. Volume II covers notes between "Bromide of Ethyl" and "Diphtheria." Volume III "Diseases of the Infantile Myxædema." A book invaluable for physicians.

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INDEX OF INVENTIONS

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