adjusted laterally back above the fixed shelving, thus utilizing the space above the fixed shelving and permitting the movable shelving-section to be conveniently brought within reach.

TOOL-HOLDER.—GEORGE R. SHERWOOD, Kearney, Neb. A suitable framing, clamping devices acting in conjunction with a base-block and a crown-block, the outer surfaces of which are convex and the inner surfaces flat, permit the adjustment of the tool to any angle and enable it to be clamped between the block surfaces in any desired position. The clamping devices are arranged to bind the tool between the base and crown blocks, the convex form of the outer sides of which blocks enable the blocks to rock to secure the desired adjustment of the tool.

GRAIN-CLEANER.—GEORGE L. BEADELL, Chicago, Ill. The cleaner comprises a box having a hopper at its upper end and containing a swinging hinged rougher extending in an inclined position and discharging the coarse material through an opening in the casing to the outside. A swinging hinged separator below the rougher and inclined in an opposite direction receives the material passing through the rougher. Screens arranged in zigzag manner below the separator receive the material. Deflectors spaced from the wall of the casing deflect the material from one screen to the other, the material passing from the lower end of the separator being discharged between the deflectors and the wall of the box.

Designs.

GAS-COCK.—ANDREW J. WIEGAND, Baltimore, Md. The design patent granted to Mr. Wiegand is for a self-lighting gas burner of novel design, having a main passage for the gas to the burner-tip, a perforated holder for platinum-sponge adjacent to the burner-tip, and a valve which controls the passage of gas to the main burner-tip or to the platinum-sponge so the gas may be ignited at the main tip from the platinum-sponge and the passage of gas to the platinum-sponge will be cut off after the gas has been ignited at the burner-tip.

VIOLIN-BODY.—ELIZA A. R. KITCHEN, Monroe, Ohio. The violin has a body partly heart-shaped, partly star-shaped, and an anchor-shaped head.

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

PENROSE'S PICTORIAL ANNUAL. THE PROCESS YEAR BOOK FOR 1899. Edited by William Gamble. London: Penrose & Company. 1899. 8vo. Pp. 108.

Process reproductions have almost entirely displaced all other methods of reproducing pictures, and while much has been lost, much has also been gained. At present there does not seem to be any limitation to process work, and the results as outlined in this Annual are wonderful. Some of the half-tones are very remarkable, and the color work is scarcely less so.

AMERICAN ANNUAL OF PHOTOGRAPHY AND PHOTOGRAPHIC TIMES ALMANAC FOR 1900. New York: The Scoville & Adams Company. 1899. 8vo. Pp. 370. Illustrated. Paper 75 cents.

The present volume is ably edited by Mr. Walter E. Woodbury and is the fourteenth of the series. It is filled with valuable articles and it is profusely illustrated. It strikes us as being the best annual we have seen and no photographer can afford to be without it.

METAL AND PLATE WORK. Its Patterns and Their Geometry; also Notes on Metals and Rules of Mensuration for the Use of Tin, Iron and Zinc Plate Workers, Coppersmiths, etc. By Charles Millis, M.I.M.E. London and New York: Spon & Chamberlain. 1899. 12mo. Pp. 456. Price $3.50.

This is an excellent book upon an eminently practical subject. Probably no trade requires such a comprehensive knowledge of geometry as metal plate work, and this book is calculated to give exactly the information which is needed by practical men. The methodical part of it is not neglected, but it is merged in the practical. It is an admirable book and is a complete treatise upon the subject.

STAR NAMES AND THEIR MEANINGS. By Richard Hinckley Allen. New York: G. E. Stechert. 1899. 8vo. Pp. 563. Price $5.

This list of star names is published in the endeavor to fill an acknowledged vacancy in our astronomical literature. It is not intended for the professional astronomer, who, as a rule, cares little about the old designations of the objects of his study, yet great scholars have thought this nomenclature not unworthy of their attention. The author has accomplished a most difficult task with rare discrimination and success. The work is most scholarly and reflects the highest possible credit upon the learning of its author. Very few men could have written this book, which is most beautifully printed by the DeVinne Press. It will certainly tend to foster a more intelligent interest in the nomenclature of practical astronomy, and the author should be well pleased with the result of his arduous labors.

MATHEMATICS. New York: Doubleday & McClure Company. 1899. 12mo. Pp. 340. Price $1 net.

This book is essentially practical, and is intended for young men and others who wish to obtain such a knowledge of mathematics as should be of service to them in their business as mechanics or engineers, and to obtain it by study at home. The bulk of the material was issued in The Chicago Record, and proved to be of the utmost interest and value. After a careful examination of the book, we are inclined to believe that the problems proposed are much more practical than in the stereotyped textbooks of mathematics.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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

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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.

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.

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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.

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.

(7815) A. J. W. asks: Can you give me the formula for government whitewash? A. The following coating for rough brick walls is used by the United States government for painting lighthouses, and it effectually prevents moisture from striking through. Take of fresh Rosendale cement, 3 parts, and of clean fine sand, 1 part; mix with fresh water thoroughly. This gives a gray or granite color, dark or light, according to the color of the cement. If brick color is desired, add enough Venetian red to the mixture to produce the color. If a very light color is desired, lime may be used with the cement and sand. Care must be taken to have all the ingredients well mixed together. In applying the wash, the wall must be wet with clean fresh water; then follow immediately with the cement wash. This prevents the bricks from absorbing the water from the wash too rapidly, and gives time for the cement to set. The wash must be well stirred during the application. The mixture is to be made as thick as can be applied conveniently with a whitewash brush. It is admirably suited for brickwork, fences, etc., but it cannot be used to advantage over paint or whitewash.

(7816) J. K. asks: 1. How much wire and what size would be sufficient to wind the voltmeter described in SUPPLEMENT, No. 1215, to register no higher than 75 volts? A. The same winding may be used for reading to 75 volts as to 110 volts. The scale will be shorter for 75 volts. 2. How many gallons of nickel solution will the plating dynamo described in "Experimental Science" plate? A. The machine is not to be rated by gallons. It will plate small articles, whether in much or little liquid. 3. What is a receipt for nickel solution or how is it made? A. For solutions to be used in plating see Van Horne's Electro-Plating. Price $1, by mail.

(7817) M. P. asks: What size wire should be wound on a dynamo, the armature of which is 2 inches in diameter and 4 inches long? The F. M. is 6½ inches high and 4 inches wide? A. No definite answer can be given to a question of this sort. To answer it one should have measurements so that a correct and complete drawing of the machine could be made from them, not simply one or two dimensions. The best we can say is, use any number between 24 and 30. You will get something.

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JANUARY 16, 1900.

AND EACH BEARING THAT DATE.

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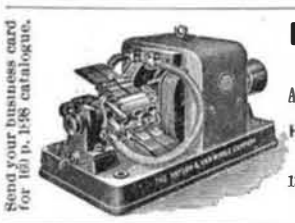

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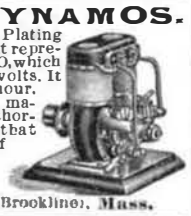

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