

practical review of the mathematics of electricity within the scope of those who are not conversant with algebra and the higher mathematics.

PRACTICAL CARRIAGE BUILDING. Compiled by M. T. Richardson. Vol. II. New York: M. T. Richardson Co. 1892. Pp. 280. Price \$1.

Previous works have been published by this company on allied topics to the present. The exceedingly practical aspect of the volume under review, with its numerous illustrations, nearly 300 in number, and the eminently clear and simple way in which the matters are expressed, give the work distinctive value.

DYNAMOMETERS AND THE MEASUREMENT OF POWER. By John J. Flather. New York: John Wiley & Sons. Pp. vi, 215. Price \$2.

At the present day, when the measurement of power is so often required and when the indicated horse power alone is not accounted sufficient for the engineer's use, a work on dynamometers is peculiarly timely.

THE JEWELER'S ASSISTANT IN THE ART OF WORKING IN GOLD. By George E. Gee. London: Crosby Lockwood & Son. 1892. Pp. xxiv, 238.

The properties of gold, its precipitation in waste solutions, its colors, mixing and melting, dry and wet coloring, casting and the various kinds of gilding operations, practical manipulations of articles of plate and jewelry, alloys of bullion and imitations, with numerous receipts and practical hints and exhaustive tables of gold values and alloys, are the topics treated in this book.

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An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted August 16, 1892,

AND EACH BEARING THAT DATE. (See note at end of list about copies of these patents.)

Table listing inventions with their respective patent numbers and dates. Includes items like Acid resisting composition for lining tanks, Addressing machine, Adjustable chair, Air compressor, etc.

Table listing inventions with their respective patent numbers and dates. Includes items like Base attachment for chairs and other supports, Elastic wheel, Electric battery, Electric dispatoh system, etc.

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 This is for our information and not for publication.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.

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Minerals sent for examination should be distinctly marked or labeled.

(4500) J. L. writes: I have a large looking-glass and the quicksilver is spotted. Can you advise what will remedy the trouble? A. No effectual way of repairing a looking glass so damaged is known.

Fragments of the amalgam can be loosened from pieces of looking glass by a drop of mercury, and the amalgam can be slid off and dropped upon the worst spots, but your chances of effecting a good repair are doubtful. If the mirror is a silver-plated one, the above treatment is useless. You may then succeed in replating by some of the well known silvering processes.

(4501) B. A. H. asks: Will a bell that is struck on the inside give out any more sound than if struck on the outside? The bell not to swing in either case. A. The manner of arranging the hammer stroke on large bells is a matter of safety and convenience.

The outside stroke gives the strongest tone and the bell is less liable to crack. It will stand the strongest hammer stroke on the outside. The inside stroke should be avoided, save in swinging bells, where it is necessary.

(4502) A. W. H. asks how the air brake is applied to a train. That is, how is the pressure obtained? A. The air brake is worked by compressed air in a cylinder under the car. An air pump on the locomotive furnishes the compressed air through pipes under the cars. This air is forced into air receivers under each car. The compressed air is kept from entering the brake cylinder by a valve which is only kept closed by the compressed air with which the pipes are filled when the brake is off. To apply the brakes the engineer simply allows this air to escape from the pipes, when the valve on each car opens communication between the air receivers and the brake cylinders.

Communications Received.

Criticism of Animal Drawings. By W. P. Webster.—An Electrical Cabinet. By F. B. Widemayer.—On Aerial Navigation. By C. S. Remington.