

ject for themselves. The experiments which form the central part of the book are carried out with the simplest possible apparatus. Although the main purpose of the book is to set forth the purely scientific aspects of electro-chemistry, the practical side of the subject has not been left altogether unknown.

Woodworkers' Tools (400 pages, price \$1), by Charles A. Strelinger & Company, of Detroit, Mich., is a good deal more than an ordinary catalogue; for, in addition to its numerous illustrations of tools and machinery, it gives a great deal and a wide variety of practical information relative to their employment, well calculated to assist the workman or apprentice.

SCIENTIFIC AMERICAN BUILDING EDITION

AUGUST, 1897.—(No. 142.)

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- No. 1. Two perspective elevations (one in colors) and floor plans of a cottage at Binghamton, N. Y., recently erected at a cost of \$3,500 complete. Mr. Alfred Bartoo, architect, Binghamton, N. Y. An attractive design in the English style.

Business and Personal.

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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 This is for our information and not for publication.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.

(7189) E. G. A. asks: Please say in what number of your paper I can find instructions for making a kite without a tail. A valuable illustrated article on the construction and flying of tailless kites will be found in SCIENTIFIC AMERICAN, Nos. 20, vol. 55; 12, vol. 53; 10, vol. 70; 11, vol. 71; 11, vol. 74; 4, vol. 76; also SUPPLEMENT, Nos. 588, 1013, 1016, 1070. Price 10 cents each prepaid by mail.

(7190) W. H. asks: 1. In making the eightlight dynamo described in SUPPLEMENT, No. 600, could not the armature core be built of thin disks of iron, extending to the shaft, or could the wooden sleeve be replaced by one of brass? A. The armature core may be built of disks of the softest sheet iron about one-twentieth inch in thickness.

(7191) D. K. writes: I wish to light a 6 candle power 9 to 12 volt lamp for about 4 hours per night. I have 6 storage cells of 5 plates each, plates 6x8 inches. 1. How many Grove, Bunsen or Daniell batteries would it take to charge the above? A. Use 15 Daniell or gravity cells, or 10 Grove or Bunsen.

(7192) J. J. R. asks: 1. What does a dry battery consist of? How is it made up? Give me all the facts and what powders to use to bring out the electric spark. This must be a dry battery and a small one. Give me the cost of its make up. A. There are no dry cells, that is, cells containing only dry powders. The so-called dry cells are usually Leclanche cells in type.

no minerals which give out electric heat and a glow spark with pyro-electricity. Tourmaline, boracite, and other minerals will be electrified by heating so as to attract light bodies to their ends, in a manner similar to rubber sealing wax. Mica will glow in the dark on being suddenly split, and a lump of sugar will do the same on being crushed or cracked.

(7193) A. J. C. asks for a recipe for making white metal. A. White metal is made by a number of formulas. It depends upon the use to which it is to be put. Try the following: Tin, 9 ounces; lead, 2 ounces; antimony, 1 ounce; bismuth, 2 ounces.

(7194) R. H. D. asks: How can I fasten cloth to brass or zinc? A. Use equal parts of pitch and gutta percha melted together and used hot. The following formula has also been recommended for the purpose: Gutta percha, 16 parts; pure, unvulcanized rubber, 4 parts; pitch, 2 parts; shellac, 1 part; linseed oil, 2 parts.

(7195) E. A. B. says: Please answer the following in your query column: In using a Baume hydrometer for acids at 60° F. in a diluted solution of 2 or 3 per cent acid, what is the variation of the hydrometer reading when the thermometer reading in the solution is over 60° up to 80° or 90°, for instance? A. The small amount of acid in solution 2 or 3 per cent will change the density of the water very little.

(7196) N. E. S. asks: Will you please publish in "Answers to Queries" in SCIENTIFIC AMERICAN, the formula for making the hectograph? I have been a reader of this valuable publication for over three years past. I have noticed this formula in one of my papers, I think, but, as some of my papers were accidentally destroyed, I lost the formula.

TO INVENTORS. An experience of nearly fifty 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 17, 1897, AND EACH BEARING THAT DATE.

- See note at end of list about copies of these patents.] Abrasive materials, applying, W. L. Kann. 588,441 Accumulator battery, J. V. & H. H. Sherrin. 588,189 Acid and making same, trimethylbenzyl uric, E. Fischer. 588,412 Acing machine, C. H. Bigelow. 588,274 Adding machine, W. J. Ensworth. 588,409 Advertisements, machine for exhibiting movable, H. L. Peters. 588,172 Air compressor, I. H. Spencer. 588,236 Alarm. See Burglar alarm. Animal trap, J. H. McWhirter. 588,167 Anyil guide, J. L. Thomson. 588,505 Ash conveying apparatus, F. J. Weber. 588,518 Autographic register, T. F. Schirmer. 588,359 Autoharp, Taylor & Eschemann. 588,396 Axle lubricator, railway, W. Silver. 588,247 Bag or purse frame, Hering & Fuller. 588,334 Bale tie, C. G. Warren. 588,514 Ball float, G. B. Moore. 588,461 Bar. See Bicycle handle bar. Spring bar. Velocipede handle bar. Batteries, application of solar heat to thermo, H. C. Baggan, Jr. 588,177 Battery. See Accumulator battery. Bed clothing retainer, C. F. Heath. 588,427 Bed fastening, S. B. Regester. 588,475 Bedstead, M. S. Keeler. 588,442 Beer pipe cleaner, P. F. Gaynor. 588,418 Bicycle, C. R. Harris. 588,274 Bicycle, J. C. Raymond. 588,472 Bicycle brake, Steele & White. 588,538 Bicycle fork crown cover plate, C. S. Smith. 588,190 Bicycle gear ease, H. J. Buell. 588,124 Bicycle guide and lantern bracket, F. G. Smith. 588,435 Bicycle handle bar, adjustable, J. J. Rexroth. 588,242 Bicycle or vehicle brake, F. Ecaubert. 588,270 Bicycle stand, H. L. & G. A. Banker. 588,376 Bicycle stand, H. K. Porter. 588,291 Bicycle support, G. H. Williams. 588,542 Bicycle, trolley, R. T.ONEY. 588,465 Bicycle valve, J. A. Steurer. 588,364 Bicycle wheel, G. Hayes. 588,332 Block. See Fuse block. Fulley block. Blower or exhauster, D. R. Ward. 588,513 Blower, rotary, T. W. Green. 588,329 Blowpipe, J. C. Van Slyke. 588,200 Bolt or wire cutter, R. Rowe. 588,187 Bottle, A. Bourke. 588,216 Bottle, G. T. Fitzgerald. 588,413 Bottle and stopper therefor, J. H. Springfield. 588,499 Bottle, non-refillable, W. L. & V. R. Roth. 588,295 Bottle stopper, C. Meyer. 588,285 Bottle stopper lock, G. L. Abbott. 588,211 Box. See Journal box. Musical box. Paper box. Bracket. See Clamp bracket. Braiding machine, A. V. Groupe. 588,421 Brake. See Bicycle brake. Bicycle or vehicle brake. Car brake. Vehicle brake. Brake and fender, combined, A. H. Wheeler. 588,255 Brush, clothes, R. T. Hewlett. 588,148 Burglar alarm, electric, C. Coleman (reissue). 11,926 Burial casket, C. A. Ruebekam. 588,482

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