

Business and Personal.

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The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins.

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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 This is for our information and not for publication.

Table with 2 columns: Item and Price. Includes Carbonic acid gas, Rubber, Hydrogen, Brick, Sea, Palladium, Storage battery, Coal, Simple electric motor, Grease to bleach, Sewer gas, Sparks in circuit breakers, Bells, Wood, Balloons, Ventilation.

(4050) H. W. G. asks: 1. Is there any preparation in existence which will produce oxygen gas? If so, what? A. No preparation known gives off oxygen gas without the application of heat to some extent in any practically useful way.

(4051) W. A. S. asks: Can you tell me what the actuating element is in the common form of metallic thermometer, and how used? A. A compound spiral of steel and brass.

(4052) O. P. asks: Will kerosene oil penetrate and rot rubber? And if so, is there any that can be prepared so it will not penetrate or rot it? A. Kerosene oil will have some effect upon India rubber, which will be more perceptible in proportion to the time of action.

(4053) J. M. U. de G. asks (1) for a cheap method of making hydrogen gas. A. Pass steam over white hot iron or copper contained in a tube.

(4054) O. S. E. asks: I have laid some pressed brick which some white substance comes out of. I would like to know what causes it, and what

will remove it and other stains from pressed brick. A. The white stains are chiefly due to the presence of salts of magnesia, and no satisfactory cure has as yet been discovered.

(4055) F. W. asks: 1. Does a cubic foot of lead weigh less at a depth of 10,000 feet than it does at a depth of 10 feet under the surface of the sea? A. The lead would weigh slightly less by the decreased gravity at great depths.

(4056) C. J. B. asks: 1. To what use is the metal palladium put? A. It has been used for graduated scales. It has very little use outside of the laboratory except as a constituent of alloys used for hair springs of watches.

(4057) H. G. M. asks: Will loadstone hold its power of attraction if not interfered with? A. Yes.

(4058) O. W. asks: 1. Is the flickering in arc lamps caused by impure carbon or unsteady feeding apparatus, or if neither of them, what causes this trouble? A. Both; and also to variations of E.M.F. and current.

(4059) E. S. F. asks: 1. How large a storage battery would be required to light one 10 candle power incandescent lamp for two hours? A. Supposing the lamp to be a 20 volt lamp, 10 or 11 cells of storage battery will be required to secure the necessary voltage.

(4060) B. I. T. asks whether there is any advantage or gain in wetting down the coal. Some claim the dry coal produces more heat, while others claim the wet coal produces most heat.

(4061) M. L. writes: I received your book "Experimental Science," and am well pleased with it. I am making the simple motor described in its pages, and would like to ask a few questions through Notes and Queries about it.

(4062) G. D. writes: I have taken the liberty of forwarding a sample of brown animal grease, which I am desirous of bleaching.

(4063) J. W. C. asks where the gelatine-like composition used instead of glass for holding the film for plates is manufactured.

cotton and camphor, and is called celluloid. It is made by the Celluloid Company, Newark, N. J., under patents.

(4064) J. L. F. asks: What number cotton-covered magnet wire should I use to make a magnet of about 20 ohms resistance? Also how much of it? A. 4865 feet of No. 16, 1924 feet of No. 20, 761 feet of No. 24, 1893 feet of No. 30, or 47 feet of No. 36.

(4065) L. A. P. asks: Is sewer gas odorless? By what chemical process can you detect sewer gas in a room? A. It generally has a depressing odor and usually contains sulphureted hydrogen.

(4066) A. J. O. writes: I desire to paint my roof with a coat of lead color instead of the customary red mineral paint.

(4067) J. D. H. writes: In relation to the induction coil described on page 548, "Experimental Science," allow me to ask the following questions: 1. Is it any advantage to varnish the layers of the secondary coil? A. Yes; but the advantage will hardly compensate for the trouble.

(4068) C. E. W. writes: 1. I made an induction coil a la Hopkins. Used two one gallon bichromates, made interrupter with platinum points, burnt out fast, made mercury breaker, worse than platinum, mercury vaporized, made condenser, 50 square feet tin foil, bunched together and wired as per directions.

(4069) G. A. M. asks: 1. Does it hurt the meter or converter on an incandescent system to short circuit the wires? A. It depends upon the way the meter is connected in the circuit.

(4070) H. K. asks: How many cells of storage battery (such as described in "Experimental Science") will it take to run the motor in SUPPLEMENT, No. 641.

(4071) A. C. W. writes: I have been trying to connect two buildings, about 1,300 feet apart, by two bells over one outside wire (No. 18 copper), using the ground as a return wire.

(4072) R. A. W. asks: 1. What is the best and quickest mode of polishing ornamental wood turning? Is it possible to mix a color with shellac to make the turned wood appear like mahogany and polish at same time?

You will find a great deal on wood stains and polishes in the "Scientific American Cyclopaedia of Receipts, Notes and Queries," which we can mail you for \$5.

(4073) A. S. asks (1) how to prepare the cloth for a small balloon intended to contain hydrogen. A. For preparing cloth for balloons see the SCIENTIFIC AMERICAN SUPPLEMENT, No. 726.

(4074) G. H. L. asks: 1. How can I make a cheap reliable air pump for experimental purposes, with a bell about eight inches high? A. For this we refer you to Hopkins' "Experimental Science," \$4 by mail.

(4075) C. B. asks: 1. A formula reads "solution chloride zinc" (U. S. Pb.), 1 quart. What quantity of zinc chloride granulated does it require to make proper strength to quart of water, so as to be like above U. S. Ph.?

(4076) H. J. S. asks: 1. Will you please explain the latest theory in reference to ventilation? A. The best method of ventilation is that in which the foul air is drawn from the upper and lower portions of the room and in which fresh air enters through the windows, doors, and other openings.

(4077) S. T. C. asks the difference between a square foot and a foot square. A. A square foot is any shaped surface that contains a square foot of area.

S. C. M. I. asks for a waterproof cement.—J. C. says: Will you please tell me how to repair the back of a mirror where the silvering has scaled off?—A. G. H. asks for a receipt for a good hard washing soap.

TO INVENTORS.

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

February 16, 1892.

AND EACH BEARING THAT DATE.

Table listing inventions with patent numbers: Acid apparatus for concentrating sulphuric, C. 468,891; Adjustable handle for taps, reamers, etc., T. E. Avery, 469,065; Advertiser, photoelectric, P. Ortega, 469,171; Air brake, E. G. Shortt, 469,176; Air cooling and purifying apparatus, I. F. Good, 469,207; Arm, artificial, W. Boardman, 469,115; Armature for dynamo electric machines, M. De Prez, 469,080; Asphaltum manufacturing, J. A. Dubbs, 469,887; Atomizer, A. Howard, 469,144.