

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 This is for our information and not for publication.

(8677) W. L. J. asks for an acid-proof cement; preferably one which will stand a reasonably high temperature.

A. Try a putty made of litharge and glycerin.

(8678) L. A. D. writes: I am a stereotypist.

What will I put in paste to make the matrix hard after it is dry? Give me a recipe for backing powder. What is the cause of blow holes in plate and cure for it?

(8679) W. S. S. asks for a recipe for a soap to clean woodwork that will not injure the finish or varnish or paint, but at the same time remove the dirt.

Also if such a soap will do the work should like it for cleaning carpets or rugs so that same will not be left sticky and stiff. Understand there are receipts for such soaps.

(8680) J. H. W. asks: Can you tell me in your query department what is the best size wire for the secondary winding of a spark coil for a gas engine.

Could the secondary wire be too fine? Have you a good book on the subject? A. Very rarely is any number of wire less than No. 36, A. W. G. silk covered, used in the secondary of induction coils.

(8681) A. M. L. asks: Kindly inform me through the SCIENTIFIC AMERICAN: 1. What substances best conduct sound?

A. If by best conductors is meant those through which sound travels most rapidly, the answer as given in Zahm's Sound and Music, price \$2.50 by mail, is steel, 15,470 feet per second; iron, 16,822 feet; fir wood, lengthwise the fiber, 15,218 feet; aspen, wood, along the fiber, 16,677 feet; white pine, 17,260 feet.

Table listing various items and their corresponding page numbers, including Telephone or telegraph pole, Tire motor, Tile, Tile press, etc.

DESIGNS.

Table listing various designs and their corresponding page numbers, including Automobile body, Bag frame, Candlestick, etc.

TRADE MARKS.

Table listing various trade marks and their corresponding page numbers, including Butter, E. O. Whitford & Co., Cleansing preparations, etc.

LABELS.

Table listing various labels and their corresponding page numbers, including 'A Pocket Hat Luer' for hat luer, 'Boston Light Gelatine' for gelatin, etc.

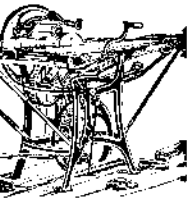
PRINTS.

Table listing various prints and their corresponding page numbers, including 'At the Top—Mathushek Pianos' for pianos, 'Priest's Napa Soda' for soda water, etc.

Main table listing various items and their corresponding page numbers, including Electric motor coupling, Electric snap switch, Electric snap, etc.

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bustible in it is destroyed. Volcanic lavas are also incombustible. Furnace slag is of the same character.

(8682) J. M. C. asks: How many watts a 16 candle power incandescent light will use? A. Sixteen candle power lamps of different types use from three to four watts per candle.

(8683) H. W. C. asks: Please advise me as to what book you recommend on designing of motors of the two-pole Edison type, with points as to effect of change of area of poles, position of greatest pull, etc., price of same and where to be had. Will Parkhurst's \$1 work cover it? A. For the principles of designing of motors on direct current we recommend Thompson's "Dynamo Electric Machinery," price \$6, as the leading authority. Hawkins and Wallis' "Dynamo," price \$3, discusses the principles of the machine. Wiener's "Designing of Dynamos and Motors," price \$3 last edition, is considered a reliable work. Parkhurst's little book, price \$1, contains the plans and details of two little motors which he designed. It has no instruction in reference to the mode of designing. The book "Electrical Designs," price \$2, contains a large number of plans of machines, some of which would probably be useful to you. The only way to learn the art of designing thoroughly is to take a course of electrical engineering and then work in the shops of some one of the great electrical companies. You will then become a designer with originality in your designs.

(8684) K. G. B. asks: 1. Will you kindly inform me through your valued paper whether there is any way of finding the "constant" of a Thompson recording wattmeter from the type, class, etc., as stamped on the metal plate attached to it? To illustrate: What would be the constant of a Thompson wattmeter Type M, Form E-3, Class 50, 220 Volts? The constant on these meters is always marked in ink, which makes it easy for electric light companies, if they are inclined that way, to change it to a higher figure, thus making the meter register more current than is consumed in reality. A. The constant of a Thompson recording wattmeter may be roughly verified by the following method: Turn on a number of lamps of a rated number of watts. Multiply the watts per lamp by the number of lamps. Observe the number of seconds required for a revolution of the disk, and multiply the watts used by the number of seconds per revolution of disk. Divide this product by 3,600, the number of seconds in an hour. The quotient is the constant required. If a stop watch is used the seconds per revolution can be found with great accuracy. The reason this is only a rough method is that lamps as they grow old take more than their rated number of watts. The meter is not liable to over-record the service, since the disk is not likely to run too fast. A better way is to connect an accurate wattmeter in series with the recording meter to be tested and compare the readings. 2. Is there any book or manufacturer's catalogue that will give accurate information on this subject? 2. Foster's "Electrical Engineer's Pocket Book," price \$5 by mail, and the circulars of the manufacturers.

(8685) H. H. asks: Kindly advise me of the method used for grinding glass for the mirrors of reflecting telescopes; I mean more particularly the means of describing the curve before beginning. Also if there is not a more practical way of getting a parabolic curve than that given in most text-books, which simply say it is the focus of a point equidistant from the focus and directrix? I understand the theory well enough, but often wonder if opticians have no more practical way of getting at it than constructing perpendiculars to the directrix and measuring to the focus; also if in getting at a spherical curve of, say, fifteen feet radius, it would be necessary to use a compass or stick of that length to construct it? If you know of any publication that would give me this information will you kindly let me know of it? A. A parabola is most correctly described by locating a sufficient number of points on the curve and passing a line through these points. Kent's "Engineer's Pocket Book," price \$5, gives four methods of describing a parabola. In shops the curves required are first described of full size and a template is made for use in work. Lofts or floors of sufficient size are necessary. For grinding lenses forms are turned and used in the machine or by hand to shape the glass. "Orford's Lens Work for Amateurs" gives instructions in this work.

(8686) N. J. R. asks: What are the proper proportions of gas and air to use for the greatest explosive force of acetylene, gasoline and crude oil gas. A. The strongest explosive power of acetylene gas is made by a mixture of 1 part acetylene to 9 parts air; of gasoline vapor, 1 part vapor to 8 parts air; crude oil illuminating gas, 1 part gas to 6 of air. See Hiscox's book on "Gas, Gasoline and Oil Engines," \$2.50 by mail.

(8687) D. P. asks: A says that the mechanical advantage of a movable pulley is due to the fact that it is a second-class lever. B says that the mechanical advantage is in the rope. A. The movable pulley is a second-class lever and the source of power. The rope is only the medium of its application. A is correct.

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The volume contains 6 tinted cover pages and 278 illustrations, including many fine examples of recent dwellings, gardens, views of groups and estates, interiors, exteriors and plans. Photographs of agricultural details, porches, doorways, mantels, etc., are especially helpful and suggestive. The illustrations of the Building Monthly are made from specially taken photographs and are not obtainable elsewhere. Most of the houses are accompanied with full sets of plans.

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### EDITORIAL ARTICLES...

Suggestive discussions on timely subjects for the home-builder: "Municipal Art"; "Roads and House"; "Washington the Magnificent"; "The House and the Terrace"; "The Art of Home-Building"; "Kitchen Ends and Back Yards."

### DEPARTMENTS...

The Departments of the Monthly cover a wide range of topics and summarize the latest advance in current architectural thought and practice: "Monthly Comment"; "The Household"; "The Garden"; "Legal Decisions"; "New Books"; "Country Life"; "The Country House"; "Fire Protection"; "Sanitation"; "Civic Betterment"; "New Building Patents"; "Publishers' Department."

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