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Some week you will be likely to find an inquiry for something that you manufacture or deal in. A prompt reply may bring an order.
Watch it Carefully

Notes and Queries.

QUESTIONS 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 This is for our information and not for publication.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.

(9659) A. E. R. asks: Can you refer me to an article on the construction of cement or pebble wash siding for houses over steel lath? I buy your Builders' Monthly and also the SUPPLEMENT, but never remember reading anything on this subject. A. We are sorry that we have no article which we can send you describing the construction of cement or pebble work siding for houses. This work is done by first securely fastening a stout wire lath over the portion of the house which it is desired to treat in this way. Sufficient space should be left between the lath and the sheathing of the house to permit the mortar to be worked through and get a good hold. Cement mortar is then put on the lath in the same way that ordinary plastering is applied, being always careful to work it through the lath in order to get a good hold. The mortar used for this purpose is one part of best Portland cement and three parts of clean sharp sand, thoroughly mixed and tempered with water, to which a small percentage of lime putty may be added to make the mortar work more freely. The less lime that is used, however, the better. After a thick layer of mortar has been applied in the manner above described, pebbles, stones, or other articles may be inserted, but care should be taken to see that they are embedded sufficiently deep for the mortar to get a good hold on them.

(9660) J. S. W. asks: Will you kindly tell me which is the most accurate way to determine the horse-power of a steam engine with a brake or indicator? Best make of brake, and how applied. Also best-known cylinder lubricant for steam engines, condensing and non-condensing. Does hydrocarbon, in any form, possess lubricating qualities of any value for cylinders of steam engines? A. First, the brake and indicated horse-power of an engine represent two different things. The first gives the power which the engine is capable of delivering to a generator or line shaft. The second gives the power which the steam generates inside the cylinder of the engine. The brake horse-power is less than the indicated horse-power by an amount equal to the entire friction of the engine. One, however, is as accurate as the other, but, as we have explained, they are measurements of different quantities. The simplest form of brake applied to an engine is a rope brake, consisting of a heavy manila rope, wrapped a number of times around a flywheel in such a way that one end may be tightened with a screw and handwheel, and the pull on the other end weighted in some simple way. All the lubricating oils are composed of various hydrocarbons, but their lubricating power depends upon their physical properties, not their chemical. The important thing in a cylinder oil is to have one which will retain its lubricating qualities at the temperature of the steam in the cylinder.

(9661) E. W. P. says: Will you please tell me which, if either, of your reference books will tell me all about fuses—what metals are used to fuse or melt at 125 to 160 degrees of heat? If this is not in one of these books, will you answer either by letter or in the columns of your valuable journal? A. An alloy consisting of 1 part lead, 1 part tin, 4 parts bismuth, 1 part cadmium, will melt at 155 deg. Fahr.

(9662) A. H. N. says: If soft coal ashes be mixed with water to the consistency of mortar and then put in a round oak or other soft coal heater on a good bed of coals and the drafts opened, this mixture will burn freely. How do you explain this anomaly? A. There is always a considerable percentage of unconsumed fuel or combustible in ashes—especially soft coal ashes—even though they may appear to be free from coal; so that they will have a certain amount of fuel wherever they can be burned without clogging up a fire and choking the draft. The addition of a moderate quantity of water to a hot soft coal fire has a curious effect. If the temperature is sufficiently high, the water is decomposed, forming free oxygen and hydrogen, which later reunite at a point usually some distance above the body of the fire in a hot flame. No heat is actually added to the fire, the effect being to abstract the heat from the coals and give back the same quantity of heat in flame above the fire, oftentimes giving the appearance, however, of making a hotter fire. In cases where a long

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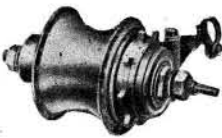
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flame is desirable, as in fire under a steam boiler, it is a common practice to wet the coal before firing it, for this reason. These facts will probably help you to explain the phenomenon you have observed.

(9663) W. G. M. asks: Will you please inform me through your Notes and Queries whether putting zinc in a stove affects in any way the formation of creosote in the chimney; if so, what is the theory? It is popularly said here that the zinc will prevent the evil.

NEW BOOKS, ETC.

THE SECRET OF THE CIRCLE AND THE SQUARE. By J. C. Willmon. Los Angeles: The McBride Press, 1905. 12mo.; pp. 30.

In this small book the author endeavors to demonstrate the possibility of constructing a straight line equal to any given arc of a circle, and also of constructing a square equal in area to any circle, and vice versa, together with solutions of similar geometrical problems.

THE SPINNING AND TWISTING OF LONG VEGETABLE FIBERS. By Herbert R. Carter. Philadelphia: J. B. Lippincott Company, 1904. 8vo.; pp. 360; 161 illustrations. Price, \$5.

This book is a practical guide for the technical student and man engaged in the business, to the spinning of the long vegetable fibers, such as flax, hemp, jute, tow, and ramie. The same general principles underlie the preparing and spinning of all these long vegetable fibers, and so it is merely the details of the various processes which differ somewhat on account of the coarseness or special nature of the different fibers.

REFUSE DISPOSAL AND POWER PRODUCTION. By W. F. Goodrich. New York: E. P. Dutton & Co., 1905. 8vo.; pp. 384. Price, \$5 net.

The sanitary destruction of garbage is one of the great problems of all large cities. The author of the present volume has gone into this subject very thoroughly, and, after describing the usual methods of disposing of refuse by dumping it at sea or on land, he goes into the modern and more scientific methods of disposal by burning it under a steam boiler for power-generation purposes.

LES DECHETS INDUSTRIELS. RÉCUPÉRATION—UTILISATION. By Paul Razous. Paris: Vve. Ch. Dunod, 1905. 8vo.; pp. 379. Price, \$4.20.

Much progress has been made in the last few years in the utilization of the waste products and residues of large industrial plants. In the present volume, M. Razous has shown this progress, and indicated what may be done with waste products in various industries.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

June 6, 1905

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

- Adding machine, Wolfe & Merten..... 791,849
Adding machine recording mechanism, W. H. Pike, Jr..... 791,941
Air brake slack adjusting device, L. T. Block..... 791,605
Anchor, ship's, R. Fowler..... 791,893
Animal catching device, W. McEnderree..... 791,933
Annealing box, W. E. Harris..... 791,901
Audiophone instruction apparatus or set, H. G. Pape..... 791,573
Axle box, car, W. W. Wallace..... 791,518
Axle gage, car, G. Rieinger..... 791,578
Axle lubricator, W. A. Jameson..... 791,697
Bag filling device, E. Kaiser..... 791,472
Bags or analogous packages, fastening attachment for, W. H. Coleman..... 791,609

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