Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion.

Notes & Queries

(1) E. A. G. asks: What is the number of strings used in common pianos, also the size and material from which the wire is made? A. There are generally three strings for each note, some of the lower notes having two or one. The strings are made of steel wire, and some of them are wound with fine copper or iron wire.

(2) T. & D. say: We have built a steam yacht, and are greatly disappointed in her speed. We want her to go at least 10 or 12 miles an hour. The hull of boat is 31′ in length, 6½′ beam, depth in center 3½′. We have a horizontal returned flue boiler 5′′ long, 30′ in diameter. Number of flues 44, 2 inches diameter, firebox width 26′′, height 18′′, length of grate 19′′. We have an upright engine 5 x 5. We have an eagle wing propeller 28′′ 3½′ pitch, and with a steam pressure of 120 lbs., 210 revolutions per minute, we gained 5 miles an hour. We can gain a greater speed by using a different propeller. A. We judge from your account that the machinery is not sufficiently powerful to obtain the speed you desire—as the propellers you have used seem to have worked with a very moderate slip, if, as we understand you, the speed was estimated when running against the current.

(3) D. E. S. asks how to make nitro-glycerin? A. To a mixture of nitric and sulphuric acids, successively add small quantities of glycerin. The nitro-glycerin falls to the bottom of the vessel. Acids of the purest quality should be used, and the introduction of foreign matters carefully avoided, otherwise slow decomposition may occur, which will result in spontaneous explosion.

(4) P. E. D. asks how to bleach Panama hats? Also how to dye felt hats black? A. To bleach Panama hats, wash the goods clean, and while slightly damp, expose to the fumes of burning sulphur in a closed vessel. To color one dozen hats, take 12 lbs. logwood, 1 lb. sulphate of iron, and ¾ lb. verdigris. Digest the logwood for some time. Add the sulphate of iron and the verdigris. Dip the hats in the bath several times and hang in the open air. By the peroxydisement of the iron with the atmospheric oxygen the hats will be more completely blackened. When fully dried wash thoroughly in running water.

(5) E. C. P. asks for a recipe for dyeing woolen pants black? A. To dye black, allow 1 lb. of logwood to each lb. of goods to be dyed. Soak the logwood over night in soft water, then boil it an hour, and strain the water in which it is boiled. For each lb. of logwood, dissolve 1 ounce of blue vitriol in warm water sufficient to wet the goods. Saturate the goods in this and then immerse in the logwood dye. Drain the goods and dry in the shade. When dry set the color by putting them into hot water in which has been dissolved a teacupful of salt to three gallons of water. Let the goods remain in until cold, then dry, without wringing out.

(6) C. W. W. says: I have been using plaster of Paris moulds for casting small objects in fusible metal. I find that the upper part of moulds does not fill as perfectly as the lower part, and that the metal becomes agitated even when the moisture is thoroughly excluded from the mould. A. See article on casting in fusible metal on p. 272, No. 17 of the SCIENTIFIC AMERICAN SUPPLEMENT. If the alloy is of low fusibility the mould should be sufficiently heated at the time of pouring in the metal to prevent too rapid cooling. If the mould is double, care should be taken to provide a sufficient number of air vents. The agitation is due to the escape of steam from the mould.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

R. F. G.—It is mostly iron pyrites with a little copper, but may contain more valuable metals.—S. M. S.—Answered August 11, p. 92.—C. A. C.—The shining scales are mica—a mineral consisting of silica, alumina, and potash. The other fragment appears to be a variety of serpentine—composed of silica, magnesia, and water.—Dr. M. P.—We could not well give an opinion as to the proper proportions of assay flux for the ore without having seen it. By following the rules you can best determine this for yourself by experiment.—W. T. J.—No. 1 is mica schist. No. 2 contains mica, felspar, quartz, and epidote (red)—a silicate of iron and manganese.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

On the Man of War of the Future. By G. V.
On a Prehistoric Stone Wall. By J. C. W.
On the Axial Motion of the Earth. By J. P.
On the Postage Cancellation Problem. By H. P. S.
On the Adiabatic Curve. By R. A.
On a Curious Appearance of Aniline Red. By W. J. W.
On the Medicinal Uses of Chalk. By T. C. T.
On a Problem of Circles and Lines. By J. M. R.
On Geometrical Problems. By K. N. H.
On Bees and Hives. By Mrs. L. E. C.
On Leaks in Gas Pipes. By M. A. J.
On Carving a Base Ball. By T. E. H.

Also inquiries and answers from the following:
A. H. P.—E. B. E.—A. L. R.—F. B. S.—J. L. S.—W. D. S.—J. O. G.

HINTS TO CORRESPONDENTS.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who makes machines for cutting veneers? Who publishes books on torpedoes and explosives? Who makes or sells lubricants for heavy machinery?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

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AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

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DESIGNS PATENTED.

10,102 to 10,107.—CARPETS.—J. Fisher, New York city.
10,108.—CIGAR BOX.—S. Lowenthal, Cincinnati, Ohio.
10,109 to 10,120.—CARPETS.—E. J. Ney, Lowell, Mass.
10,121.—PICTURE FRAME.—L. Pattberg, Jersey city, N. J.
10,122.—BUTTER COOLERS.—B. T. Steinhardt, New York city.
10,123 to 10,128.—CARPETS.—C. W. Swapp, Lowell, Mass.
10,129.—HEATING STOVES.—J. A. Lawson, Troy, N. Y.
10,130.—CARD BASKET.—P. Rosenbach, Brooklyn, N. Y.

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