

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address correspondents by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 100 a line, under the head of "Business and Personal."

All reference to back numbers must be by volume and page.

BURSTING OF FURNACE.—In answer to your correspondent's query, I will say that I have witnessed about a dozen explosions of furnaces within the last six months. In all these cases the roof was blown off; and, in a few of them, workmen were seriously burnt. I believe the explosion is due to the sudden conversion of water into steam of high tension. This happens in the least harmless way, when you strike with a wet hammer on a white hot tool, or when you drop the end of a hot tool into the liquid cinder in a furnace. In either case steam of high tension, and under some pressure, is suddenly formed. If the cinder is very hot, and the wet surface very large, and the weight of the body considerable (e. g., a wet brick or a bucket full of water), the explosion will be as certain as serious. A careful puddler, in cooling off a furnace, will at first throw only small quantities of water upon the foreplate, or against the sides of a furnace. In this way the water spreads harmlessly on the hot cinder. I have known such puddlers to work furnaces for twelve years, without blowing up a single one. It is the general opinion of puddlers that small pieces of scale or cinder, in the water thrown in, cause the explosion, but I doubt if this be sufficient for a serious explosion, especially as they will, at every heat, sweep small pieces of cinder off the fireplate into the furnace when throwing in water. Accordingly, the certainty and force of the explosion will stand in a definite ratio to the temperature of the cinder, the area of the wet surface, and to the rapidity and force with which it is brought into contact with the hot cinder.—P. M. B., of Pa.

SOLDERING CASTINGS.—W. S. B. can solder gray cast iron as follows: First dip the castings in alcohol, after which, sprinkle muriate of ammonia (sal ammoniac) over the surface to be soldered. Then hold the casting over a charcoal fire till the sal ammoniac begins to smoke; then dip it into melted tin (not solder). This prepares the metal for soldering, which can then be done in the ordinary way.—J. R., of Mo.

SPINNING TIN PLATE.—It is not practicable to spin common tin plate like brass, (except in the form of plates or covers). But T. J. R. can take the iron without the plate, and make it red hot, spin it or press it, and afterwards plate it. If he fail in this *modus operandi*, let him hire a practical man to work it out for him.—J. R., of Md.

L. A. M., of Mass.—There is no difficulty in dissolving amber in chloroform, but people are apt to think they fail, from the circumstance that it is only partially soluble. Take some broken amber mouth-pieces of pipes (your tobacconist will set you up with them), reduce to a coarse powder and place in a bottle with rather more than enough chloroform to cover them well; shake often, and in a few days if you try it by pouring a drop or two of the clear liquid on a glass plate, you will find you have a varnish of good body, which gives a strong glaze. Or you can make an amber varnish as follows: Take of amber, 3 ounces; benzole, 50 ounces; heat the amber in a closed vessel to a temperature of about 570° Fah. When it begins to soften and swell, emitting white fumes, then dissolve in the benzole.

R. H., of Ala.—To prepare a plaster cast for electrotyping, first dry the plaster cast in the oven thoroughly, then get equal parts of beeswax and common resin, melt them together, and boil the cast until it will not absorb any more; when cold, get some good blacklead and cover the cast entirely, not thick but a bright surface, then you can electroplate in your battery as usual.

SILVER SOLDER.—Let your querist get 1 pwt., of pure silver, and ½ dwt. of common pins, and melt them together; he will have an easy flowing solder, but must use a gas jet to solder with.

C. D. of Ga.—You can cement cloth to polished iron shafts, by first giving them a coat of best white lead paint; this being dried hard, coat with best Russian glue, dissolved in water containing a little vinegar or acetic acid.

PASTE THAT WILL KEEP.—Take one tablespoonful of flour, add gradually one pint of cold water; boil slowly, and stir well to prevent burning, till it thickens. Keep it boiling till it becomes thin; then add one teaspoonful of nitro-muriatic acid, and boil till it again thickens, when it is ready for use. This paste is harmless, cheap, and less difficult to prepare than the formulae in your last issue, and will neither turn sour nor mold.—H.

CEMENT FOR GLASS SYRINGES.—Let P. E. G. take resin two parts, gutta percha one part, melt together over a slow fire, apply hot, and trim with a hot knife.—H.

SOLDERING FLUID.—Let C. W. take muriatic acid and dissolve as much zinc in it as the acid will take.—J. K., of Mo.

COATING FOR BOAT BOTTOMS.—Let A. A. B. take 5 gallons boiled linseed oil, 4 gallons raw oil, 1 gallon benzine, and 80 pounds of Rocky Mountain vermilion.—H.

IVORY KEYS.—To glue on the ivory veneers, let J. H. take two parts pulverized gum arabic, and one part calomel, and add water sufficient to make a paste.—H.

PULVERIZED SOAP.—To pulverize hard soap, let M. B. C. pare it very thin with a hot knife, or spatula, and pulverize it in a mortar.—H.

PAINT FOR OLD WEATHER BOARDING.—The recipe for coating for boat bottoms, given above, is also excellent for old weather boarding.—H.

W. R. B., of Wis.—You can carry steam 200 feet from boiler to engine, without serious loss. We advise you to use the cement felting noticed in our last issue. Use a 1½-inch pipe, which, though larger than is theoretically necessary, will, on account of its size, reduce the loss of pressure from boiler to engine.

W. A. M., of Me.—We are of the opinion that iron rails made of cast iron, cast upon wrought iron bars, would not prove desirable in use. However, the experiment could be easily tried, and that is the true way to determine their value.

C. O., of —.—Any hollow sphere containing air will not float as high on the surface of water, as the same with the air exhausted.

S. P., of Quebec.—The filling of your mill with smoke from the forges issuing to the flue having too small capacity. The smoke and gas discharged into the mill is decidedly deleterious to the workmen.

H. R. O., of Mass.—It is probable that the acids used in making shoe polish do injure the leather more or less. Their action is, however, not very decided. In the recipe given recently in this column, in our issue of March 11, we think there is too large a proportion of acid, for a good blacking.

B. Y. C., of Va.—We know of no cheaper pipe than the tin-lined lead pipe that combines all the requisites of a first-class water pipe you specify.

D. C. R., of Ill.—We have not investigated into the nature of the anti-incrustation powders to which you refer, but we have usually found such preparations harmless.

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Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

For the best and cheapest Lubricating Oils, for Sewing Machines, Engines, and other Machinery, send for Price List and Samples, to Chard & Howe, Manufacturers, 134 Maiden Lane, New York.

The paper that meets the eye of manufacturers throughout the United States—*Boston Bulletin*, \$4 00 a year. Advertisements 17c. a line.

Blake's Belt Studs.—Cheapest, strongest and best Belt Fastener in use. Old Belts that will not hold lacing can be fastened with studs, and wear till the belt is worn out. Greene, Tweed & Co., 10 Park Place.

Oak-Tanned Leather Belting.—We make an extra quality, cheapest for the consumer. Greene, Tweed & Co., 10 Park Place.

Patent Dealers send address to Box 144, Cuba, N. Y.

Carpenters wanted—\$10 per day—to sell the Burglar Proof Sash Lock. Address G. S. Lacey, 27 Park Row, New York.

Manufacturers' and Patentees' Agencies, for the sale of manufactured goods on the Pacific coast, wanted by Nathan Joseph & Co., 619 Washington street, San Francisco, who are already acting for several firms in the United States and Europe, to whom they can give references.

Columbus, O., Feb. 27, 1871.—Messrs. McBeth, Bentel & Margendant:—Your Universal Wood Worker is giving entire satisfaction. Shall be most happy to inform any one of the many advantages that it certainly possesses over any other wood-working machine with which I have had experience. Yours truly, M. P. Ford, Master Car Builder, P. C. & St. L. R. R. Co.

Send Circulars and Price List of New Goods, suitable for Agents, to Novelty Agency, St. Louis.

Controlling interest offered in the best Piston Meter. Claim to superiority verified beyond doubt. Box 3675, New York.

See advertisement of a Woolen Mill for sale. A bargain.

Pattern Letters for Machinists, Molders, and Inventors, to letter patterns of castings, all sizes. Address H. W. Knight, Seneca Falls, N. Y.

Gage Lathes for Broom and other handles, Chair Rounds, etc. Price \$20. With attachment for Null work, price \$30. Also, Wood-turning Lathes. A. L. Henderer & Co., Binghamton, N. Y.

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A complete Paper Collar Factory for sale cheap. Capacity 80,000 per day, ready for immediate operation. Price \$5,000; terms easy. Apply to B. R. Western, Room 23, 37 Park Row, New York.

Improved mode of Graining Wood, pat. July 5, '70, by J. J. Calow, Cleveland, O. See Illustrated S. A., Dec. 17, '70. Send stamp for circular.

All parties wanting a water wheel will learn something of interest by addressing P. H. Wait, Sandy Hill, N. Y., for a free circular of his Hudson River Champion Turbine.

Ashcroft's Low Water Detector, \$15; thousands in use; 17 year's experience. Can be applied for \$1. Send for circular. E. H. Ashcroft, Boston, Mass.

Self-testing Steam Gage. There's a difference between a chronometer watch and a "bull's eye." Same difference between a self-tester and common steam gage. Send for Circular. E. H. Ashcroft, Boston, Mass.

\$3.50. Stephens' Patent Combination Rule, Level, Square, Plumb, Bevel, etc. See advertisement in another column. Agents wanted.

American Boiler Powder Co., Box 315, Pittsburgh, Pa., make the only safe, sure, and cheap remedy for "Scaly Boilers." Orders solicited.

Belting that is Belting.—Always send for the Best Philadelphia Oak-Tanned, to C. W. Army, Manufacturer, 301 Cherry st., Phil'a.

E. Howard & Co., Boston, make the best Stem-winding Watch in the country. Ask for it at all the dealers. Office 15 Maiden Lane, N. Y.

For mining, wrecking, pumping, drainage, and irrigating machinery, see advertisement of Andrews' Patents in another column.

The best place to get Working Models and parts is at T. B. Jeffery's, 160 South Water st., Chicago.

Brown's Coal-yard Quarry & Contractors' Apparatus for hoisting and conveying material by iron cable. W. D. Andrews & Bro., 414 Water st., N. Y.

Improved Foot Lathes. Many a reader of this paper has one of them. Selling in all parts of the country, Canada, Europe, etc. Catalogue free. N. H. Baldwin, Laconia, N. H.

Cold Rolled-Shafting, piston rods, pump rods, Collins pat. double compression couplings, manufactured by Jones & Laughlins, Pittsburgh, Pa.

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E. P. Peacock, Manufacturer of Cutting Dies, Press Work. Patent Articles in Metals, etc. 55 Franklin st., Chicago.

Peck's Patent Drop Press. Milo Peck & Co., New Haven, Ct.

For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa.; for lithograph, etc.

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Taft's Portable Hot Air, Vapor and Shower Bathing Apparatus. Address Portable Bath Co., Sag Harbor, N. Y. (Send for Circular.)

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For Fruit-Can Tools, Presses, Dies for all Metals, apply to Bliss & Williams, successor to May & Bliss, 118, 120, and 122 Plymouth st., Brooklyn, N. Y. Send for catalogue.

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English and American Cotton Machinery and Yarns, Beam Warps and Machine Tools. Thos. Pray, Jr., 57 Weybosset st., Providence, R. I.

To Ascertain where there will be a demand for new machinery or manufacturers' supplies read *Boston Commercial Bulletin's* Manufacturing News of the United States. Terms \$4 00 a year.

APPLICATIONS FOR EXTENSION OF PATENTS.

STEAM PRESSURE GAGE.—Clara A. Eastman, Boston, Mass., has petitioned for an extension of the above patent. Day of hearing, May 31, 1871.

HYDRANT.—George P. Perrini, Richmond, Va., and James E. Boyle, New York city, have petitioned for an extension of the above patent. Day of hearing, June 7, 1871.

PICKER SAWING MACHINE.—John Haw, Hanover County, Va., has petitioned for an extension of the above patent. Day of hearing, June 7, 1871.

PASSENGER FARE BOXES.—John B. Slawson, New York city, has petitioned for an extension of the above patent. Day of hearing, July 12, 1871.

SELF-ACTING RAKE FOR HARVESTERS.—Salem T. Lamb, New Albany, Ind. has petitioned for an extension of the above patent. Day of hearing, June 14, 1871.

MACHINE FOR RIVETING BOILERS.—Silvester Bennett, Jefferson Parish La., has petitioned for an extension of the above patent. Day of hearing, June 14, 1871.

New Patent Law of 1870.

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When the invention consists of a medicine or compound, or a new article of manufacture, or a new composition, samples of the article must be furnished, neatly put up. There should also be forwarded a full statement of its ingredients, proportions, mode of preparation, uses, and merits.

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