

Business and Personal.

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

Half Interest for sale in established Machinery Depot, new and second-hand. Steam fitting connected. Small capital, with energy, required. Address T. V. Carpenter, Advertising Agent, Box 773, New York.

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

I am active, have a clear record, and some capital. How can I make some money? F. Carmill, Box 1268, Boston, Mass.

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

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.

Can a round, spring-steel rod be drawn to any desired length, with a true taper to a point, with equal elasticity the whole length, and rolled temper? What is the price per hundred pounds, and where can they be procured? Answer "Sportsman," Malone, N. Y.

Manufacturers of Foot Lathes and other light machinery please address Geo. B. Kirkham, 167 E. 33d st., N. Y. city. Business of importance.

Safety Kerosene Lamps (Perkins & House's Patent). Explosion or breaking impossible; light equal to gas, and no odor. Families supplied and canvassers appointed, by Montgomery & Co., 42 Barclay st., New York, or Cleveland, O.

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.

Wanted.—Machines for manufacturing Pails, Tubs, and Matches. Also, competent man to superintend construction of buildings, and manage all parts of business when complete. Address, with descriptive circulars, price, etc., No. 266 Lexington avenue, New York.

Turbine Water Wheels, Portable and Stationary Engines, Gang and Circular Saw Mills, Rolling Mill Machinery, and Machinery for Axe Manufacturers, manufactured by Wm. P. Duncan, Bellefonte, Pa.

For best Power Picket Header in use, apply to Wm. P. Duncan, Bellefonte, Pa.

New Blind Wirer and Rod Cutter. B. C. Davis & Co., Binghamton, N. Y.

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.

See advertisement of L. & J. W. Feuchtwanger, Chemists, N. Y. \$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.

Peteler Portable R. R. Co. contractors, graders. See adv'tment.

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.

Millstone Dressing Diamond Machine—Simple, effective, durable. For description of the above see Scientific American, Nov. 27th, 1869. Also, Glazier's Diamonds. John Dickinson, 64 Nassau st., N. Y.

Steel name stamps, figures, etc. E. H. Payn, M'fr, Burlington, Vt.

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

Keuffel & Esser 116 Fulton st., N. Y., the best place to get 1st-class Drawing Materials, Swiss instruments, and Rubber Triangles and Curves

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

For the best Self-regulating Windmill in the world, to pump water for residences, farms, city buildings, drainage, and irrigation, address Con. Windmill Co., 5 College Place, New York.

The Merriman Bolt Cutter—the best made. Send for circulars. H. B. Brown & Co., Fair Haven, Conn.

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

Glynn's Anti-Incrustator for Steam Boilers—The only reliable preventive. No foaming, and does not attack metals of boilers. Price 25 cents per lb. C. D. Fredricks, 587 Broadway, New York.

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.

2d-hand Worthington, Woodward and Novelty Pumps, Engines 25 to 100 H.P., 60 Horse Loc. Boiler. W. D. Andrews & Bro., 414 Water st., N. Y.

Agents wanted, to sell the Star Bevel. It supercedes the old style. Send for Circular. Hallett & White, West Meriden, Conn.

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

For small, soft, Gray Iron Castings, Japanned, Tinned, or Bronzed, address Enterprise Manufacturing Company, Philadelphia.

Conklin's Detachable Rubber Lip, for bowls, etc., works like a charm. For Rights, address O. P. Conklin, Worcester, Mass., or A. Saul, Philadelphia, Pa.

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.

Facts for the Ladies.

In 1870, Mrs. W. made, with her Wheeler & Wilson machine, 2,255 vests, besides doing her family sewing for six persons.

The Pittsburgh, Pa., "Leader" says:

"The firm of Geo. P. Rowell & Co. is the largest and best Advertising Agency in the United States, and we can cheerfully recommend it to the attention of those who desire to advertise their business scientifically and systematically in such a way; that is, to secure the largest amount of publicity for the least expenditure of money."

After an exhaustive trial, at American Institute Fair for 1870, Pratt's Astral Oil was pronounced the safest and best.

Dyspepsia: Its Varieties, Causes, Symptoms, and Cure. By E. P. MILLER, M.D. Paper, 50 cts.; Muslin, \$1. Address MILLER, HAYNES & Co., 41 West Twenty-sixth st., New York city.

Vital Force: How Wasted and How Preserved; or, Abuses of the Sexual Function, their Causes, Effects, and Means of Cure. By E. P. MILLER, M.D. Paper, 50 cts. Address MILLER, HAYNES & Co., 41 West Twenty-sixth st., New York city.

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.

MIXING METALS.—All the hard gray American charcoal iron, of which car wheels and all such work are made, requires more heat and a longer time to melt than soft iron, especially Scotch pig, which is the most fluid and the easiest to melt of any iron. Consequently, unless the melter exercises good judgment in charging, the Scotch pig will melt and run off before the car-wheel iron is melted. If G. H. P. be particular in the quality and strength of his iron, he will make better results by using soft American charcoal pig, with old car-wheel iron. It will make stronger castings, mix better, and melt more uniformly; but he should always recollect in charging his furnace that soft iron will melt before hard in the same position, in the cupola. I also think he had better use a larger proportion of soft pig, as every time cast iron is melted it becomes harder, so much so that iron which can be filed and turned with ease, when re-cast will often be found too hard to work.—J. T., of N. Y.

HARDENING TALLOW.—If E. H. H. will use one pound of alum for every five pounds of tallow, his candles will be as hard and white as wax. The alum must be dissolved in water, then put in the tallow, and stirred until they are both melted together, and run in molds.—F. O. H.

L. L., of N. Y.—According to Ure, strass is made as follows: 8 ounces of pure rock crystal or flint, in powder, mixed with 4 ounces of tartar, are to be baked and left to cool. The mixture is then poured into hot water, and treated with dilute nitric acid till it ceases to effervesce, and the "frit" is then washed in water till the water comes off tasteless. The frit is then dried, and mixed with 12 ounces of white lead, and this last mixture reduced to fine powder, and washed with distilled water; 1 ounce of calcined borax is now added to every 12 ounces of the mixture, the whole rubbed together in a porcelain mortar, melted in a clean crucible, and poured out into pure cold water. This melting and pouring into water must be done three times, using a clean, new crucible each time. The third frit is pulverized, five drachms of niter added, and then melted for the last time, when a clean, beautiful white crystal mass results.

C. M. S., of Wis.—There are no precise proportions observed in making the coal-tar and gravel walks of which you speak. The aim is to saturate the gravel with the hot tar without surplus. The interstices of the gravel are simply to be filled, and the amount required to do this depends wholly upon the coarseness or fineness of the gravel employed.

W. P. T., of Ohio.—Two teams of horses, of equal strength, pulling against each other, by means of a rope, would create the same tension in the rope, as one of the teams drawing against an immovable object.

W. H. B., of Va.—Ice can be made by compressing air, and after it has radiated its heat, allowing it to extract the heat of water with which it is brought into contact. The temperature of air at 59° Fah., would be raised, by compressing the air to one fourth its original volume, to 317° Fah; and the air would radiate and absorb again, in expanding, about 190 units of heat.

E. T. H., of Ga.—The friable sandstone, a specimen of which you send us, may, we think, be rendered firmer by soaking it in a solution of silicate of soda, and allowing it to stand till dry.

J. A. V., of Ohio.—The use of steam expansively, by means of cut-off appliances, enables the expansive force of the steam to be utilized, which cannot be done when the pressure is maintained at one standard, and steam admitted through the full stroke. It takes no more power to do a given amount of work in one case than in the other, but more boiler capacity, and more fuel, as the working power of the steam is more economically applied when the cut-off is used.

Geo. F. R., of Ohio.—Type metal is composed of 3 parts lead and 1 part antimony for smallest, hardest, and most brittle types; 4 of lead and 1 of antimony for next grade; 5 of lead and 1 of antimony for medium sizes; 6 of lead and 1 of antimony for larger types; and 7 of lead and 1 of antimony for the largest.

E. J. M., of Texas.—The term "power of a boiler" means its evaporating power, and in that sense is proper. If its evaporative power be sufficient to perform a given amount of work, it is proper to estimate that work in horse power. Water can not be pumped out of a pipe from which atmospheric air is excluded. A pipe driven into a soil impervious to air, can never yield water unless the water is forced up by hydraulic power, as in the artesian system.

A. P. Y., of N. Y.—You will find descriptions of iron enameling processes, on pages 257 and 408, Vol. XII. of this journal. It can be done in colors. See Ure's "Dictionary of Arts and Manufactures."

H. C., of Pa.—We do not think increasing the size of the journals of your car axles from 2½ inches to 6 inches diameter, would make them run lighter.

H. H. A., of N. Y.—The lining up of a beam engine, in a vessel, is a process for which no definite mode of procedure is exclusively applicable. It is an operation to which common sense and judgment must be brought, and for which each engineer must be a law unto himself.

J. S., of Va.—The use of horizontal propellers to force balloons up or down is not a new suggestion. It has been tried, but, we believe, without much practical success.

J. T. S., of N. Y.—You will find further information on the subject of transmitting power by compressed air, in our editorial columns of last week.

APPLICATIONS FOR EXTENSION OF PATENTS.

HARVESTERS.—William T. B. Read, Chicago, Ill., has petitioned for an extension of the above patent. Day of hearing, May 17, 1871.

MODE OF FASTENING SHEET METAL ON ROOFS, ETC.—Asa Johnson, Brooklyn, N. Y., has petitioned for an extension of the above patent. Day of hearing, May 3, 1871.

METHOD OF PRINTING IN COLORS.—Rosale Croome, Brooklyn, N. Y., has petitioned for an extension of the above patent. Day of hearing, May 3, 1871.

MACHINERY FOR COMPRESSING GASEOUS BODIES.—William A. Royce Newburgh, N. Y., has petitioned for an extension of the above patent. Day of hearing, May 10, 1871.

PLOWS.—John S. Hall, Pittsburgh, Pa., has petitioned for an extension of the above patent. Day of hearing, May 17, 1871.

CARRIAGE WHEELS.—James D. Sarven, New Haven, Conn., has petitioned for an extension of the above patent. Day of hearing, May 24, 1871.

New Patent Law of 1870.

INSTRUCTIONS

HOW TO OBTAIN

LETTERS-PATENT

FOR

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A SPECIAL EXAMINATION

is made into the novelty of an invention by personal examination at the Patent Office of all patented inventions bearing on the particular class. This search is made by examiners of long experience, for which a fee of \$5 is charged. A report is given in writing.

To avoid all possible misapprehension, MUNN & Co. advise generally, that inventors send models. But the Commissioner may at his discretion dispense with a model—this can be arranged beforehand.

MUNN & Co. take special care in preparation of drawings and specifications. If a case should for any cause be rejected it is investigated immediately, and the rejection if an improper one set aside.

NO EXTRA CHARGE

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MUNN & Co. give very special attention to the examination and prosecution of rejected cases filed by inventors and other attorneys. In such cases a fee of \$5 is required for special examination and report; and in case of probable success by further prosecution and the papers are found tolerably well prepared, MUNN & Co. will take up the case and endeavor to get it through for a reasonable fee to be agreed upon in advance of prosecution.

CAVEATS

Are desirable if an inventor is not fully prepared to apply for a Patent. A Caveat affords protection for one year against the issue of a patent to another for the same invention. Caveat papers should be carefully prepared.

The Government fee on filing a Caveat is \$10, and MUNN & Co.'s charge for preparing the necessary papers is usually from \$10 to \$12.

REISSUES.

A patent when discovered to be defective may be reissued by the surrender of the original patent, and the filing of amended papers. This proceeding should be taken with great care.

DESIGNS, TRADE-MARKS, & COMPOSITIONS Can be patented for a term of years, also new medicines or medical compounds, and useful mixtures of all kinds.

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.

CANADIANS and all other foreigners can now obtain patents upon the same terms as citizens.

EUROPEAN PATENTS.

MUNN & Co. have solicited a larger number of European Patents than any other agency. They have agents located at London, Paris, Brussels, Berlin, and other chief cities. A pamphlet containing a synopsis of the Foreign Patent Laws sent free.

MUNN & Co. could refer, if necessary, to thousands of patentees who have had the benefit of their advice and assistance, and to members of Congress and prominent citizens throughout the country.

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