

TO INVENTORS.

An experience of more than thirty years, and the preparation of not less than one hundred thousand applications for patents at home and abroad...

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line.

Steam Tug Machinery. Engines, Boilers, Sugar Machinery. Atlantic Steam Engine Works, Brooklyn, N.Y.

Jarvis Patent Boiler Setting, same principle as the Siemens process for making steel; burns screenings and all kinds of waste fuel, without blower.

The new fragrant Vanity Fair Cigarettes. New combinations of rare Old Perique and Virginia.

Artificial Stone.—Wanted to buy receipt for making. Address Wm. A. Morrison, Alton, Ill.

New Gear Cutting Attachment for Lathes. Lace Leather Cutter. Something new. Send for lists.

Oval Spools.—L. F. Beals, of Marquette, L. S. Mich., wishes to correspond with parties who make them.

Send for Circulars of Indestructible Boot and Shoe Soles to H. C. Goodrich, 40 Hoyne Ave., Chicago, Ill.

An Electrician of ten years' practical experience, engaged in manufacturing electrical apparatus, desires a situation as superintendent or electrician for some telephonic exchange.

For Sale.—Brown & Sharpe Universal Milling Machine; 4 horse; Baxter Engine. W. E. Lewis, Cory, Pa.

For Sale.—One Putnam Gear Cutter, Brown & Sharp Miller, Screw Machines, and other good second-hand machinery.

For Power & Economy, Alcott's Turbine, Mt. Holly, N.J. Circulars for Inventors and Manufacturers.

Two of the handsomest and best Guns ever brought to this country, but little used, for sale for less than half their cost.

A Cupola works best with forced blast from a Baker Blower. Wilbraham Bros., 2318 Frankford Ave., Phila.

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

Vertical Burr Mill. C. K. Bullock, Phila., Pa. Corliss Engines. Watts, Campbell & Co., Newark, N.J.

Case Hardening Preparation. Box 73, Willimantic, Ct. H. Prentiss & Company, 14 Dey St., N. Y., Manufs. Taps, Dies, Screw Plates, Reamers, etc.

Needle Pointed Iron, Brass, and Steel Wire for all purposes. W. Crabb, Newark, N. J.

Belcher & Bagnall, 25 Murray St., N.Y., have the most economical Steam Engines, Boilers, Pumps, in market; also improved wood and iron working machinery.

Hydraulic Elevators for private houses, hotels, and public buildings. Burdon Iron Works, Brooklyn, N. Y.

Belcher & Co.'s Hydraulic Elevator. Great power, simplicity, safety, economy, durability. 94 Liberty St., N.Y.

Parties furnishing Machinery for making Truck or Plain Barrels cheaply, address P. O. Box 3234, N. Y. city.

Nickel Plating.—A white deposit guaranteed by using our material. Condit, Hanson & Van Winkle, Newark, N.J.

The Lathes, Planers, Drills, and other Tools, new and second-hand, of the Wood & Light Machine Company, Worcester, are to be sold out very low by the George Place Machinery Agency, 121 Chambers St., New York.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Buffing Metals.

Solid Emery Vulcanite Wheels—The Solid Original Emery Wheel—other kinds imitations and inferior.

Steel Castings true to pattern, of superior strength and durability. Gearing of all kinds.

Mill Stone Dressing Diamonds. Simple, effective, and durable. J. Dickinson, 64 Nassau St., N. Y.

Elevators, Freight and Passenger, Shafting, Pulleys, and Hangers. L. S. Graves & Son, Rochester, N. Y.

Machine Cut Brass Gear Wheels for Models, etc. (new list). Models, experimental work, and machine work generally.

"Vick's Floral Guide" contains a colored plate, 500 illustrations, 100 pages, descriptions of the best flowers and vegetables, and how to grow them; all for 5 cents; in English or German.

For Shafts, Pulleys, or Hangers, call and see stock kept at 79 Liberty St. Wm. Sellers & Co.

Excelsior Steel Tube Cleaner. Schuyllkill Falls, Phila., Pa. Deoxidized Bronze. Patent for machine and engine journals.

Wheels and Pinions, heavy and light, remarkably strong and durable. Especially suited for sugar mills and similar work.

Best Power Punching Presses in the world. Highest Centennial Award. A. H. Merriman, W. Meriden, Conn.

Mellen, Williams & Co., 57 Kilby St., Boston, Mass. Wiegand Sectional Steam Boiler. Etna Rocking Grate Bar

Howard Patent Safety Elevators. Howard Iron Works, Buffalo, N. Y. Holy System of Water Supply and Fire Protection for Cities and Villages.

Inventors' Models. John Ruthven, Cincinnati, O. Sheet Metal Presses, Ferracute Co., Bridgeton, N. J.

NEW BOOKS AND PUBLICATIONS. GREAT INDUSTRIES OF GREAT BRITAIN. Vol. 1. Illustrated. London and New York: Cassell, Petter & Galpin. \$3.

A handsome volume, devoted mainly to the popular description of the industries based on cotton, hemp, flax, jute, wool, and worsted, iron and steel, and shipbuilding, with well written descriptions of the leading English establishments devoted to each.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC for 1879. This excellent little annual is now before us, brimful of valuable information for the photographer and all who are interested in the progress of this most useful art.

Notes & Queries. (1) R. J. F. writes: I have some carbons and porous cups of an old Leclanche battery. What shall I do to prepare them for use in a bichromate battery? A. Soak them a day or so in warm water.

(2) J. H. P. writes: I am building a steam yacht after plans taken from your paper, and I wish to ask of what quality of iron should the boiler be made to stand the Government inspection.

(3) R. G. asks: I can you give me the best method of setting buggy axles? A. You should consult some good treatise on the subject, as any instructions that we could give you in our limited space would be of little service.

(4) C. W. L. writes: I have a small engine, and wish to use a cast iron or rather an iron casting 8 1/2 inches diameter by 9 inches height, three sixteenths of an inch thick.

(5) S. writes: 1. The area of a pipe is 6.010 foot, what is the diameter of same in inches? A. 1.354 inch. 2. Give formula for reducing the area of circles in feet to the diameter in inches.

3. How shall I reduce the size of a piece of carbon if it is too large? A. File it or grind it. 4. It was also stated under that head that the person used 3 or 4 cells of a bichromate battery.

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(6) J. R. L. writes: We want to put up a steam engine on the table land, 40 feet from the brow of the hill. The spring from which we must get water to supply the boiler is about 40 feet below, at an angle of 45 degrees.

(7) W. H. F. asks: What is the horse power of an engine with 9 inches cylinder, 14 inches stroke, 100 lbs. mean pressure, making 350 revolutions per minute? Working by a rule given in the AMERICAN of January 4, I find it to be 157 horse power.

(8) C. R. G. asks: What is the best material for covering a 2 1/4 inch steam pipe and a 1 1/4 inch return pipe, each about 100 feet long, passing through a cold cellar to a radiator in the room above?

(9) I. W. S. asks who was the inventor of the Monitor. A. The question is in dispute, but the credit is usually given to a Mr. Timby.

(10) "Engine" asks: Can I acquire a knowledge of mechanical engineering by home study, and what books and time are required to accomplish it? A. We think it is very doubtful whether you can become proficient without some practical experience in the shops and elsewhere.

(11) E. L. W. asks: What is the best thing to put on a steam boiler to make it look well and prevent rusting? A. A black varnish made from petroleum.

(12) "Reader" asks whether the car wheels made of papier mache have a metallic tire? A. Yes.

(13) J. W. asks: What is the average weight of English locomotives, also the heaviest used there? A. They are made as heavy as 70 tons or more. Average weight, between 40 and 50 tons.

(14) J. H. asks: What is the pressure of lake water to the square inch at a depth of 25, 50, 100 feet, etc. A. The pressure is about 0.433 lb. per square inch for each foot of depth.

(15) G. C. E. writes: I use a 2 1/2 inch stream of water for condensing purposes, but as I take it from a brook, in the summer months I do not get the condensing power necessary on account of the temperature.

(16) M. B. asks: 1. What thickness of granite should be used in a bank vault to make it fireproof? The building is a two story brick, situated on a corner.

(17) A. C. G. asks how India rubber hand stamps are manufactured. A. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 83.

(18) S. B. G. asks: 1. How is it determined whether a snake can hear? A. By observation. 2. If they can hear, do they heed? A. Yes. 3. It is said that the birds of the northern climate go south in the fall; if they do, are there not more birds in the south in the winter than in the summer? A. Yes. 4. Which is proper, eighteen hundred and seventy-nine, or eighteen hundred seventy-nine? A. Both.

(19) H. J. B. asks: What kind of black paint is on the ordinary tin thermometers, and how is it put on? A. Asphaltum, one half pound; melt, then add hot balsam of copaiba, 1 pound; thin with turpentine oil, apply with a soft brush, and bake for some time in a japanner's oven.

(20) B. F. M. asks for a formula for preparing a good mucilage for pasting papers. Can you recommend anything better than gum arabic mucilage for pasting manifests and way bills into scrap books made of manila paper? A. Rice or starch paste is better.

(21) E. R. T. writes: I use an Argand burner, and though the wick fits apparently tight, when I suddenly turn it up or down, while burning, a blue blaze appears in the bowl of the lamp, though no explosion has ever occurred.

(22) N. O. M. asks: 1. Which of the various "Stubs" or "Stubbs" firms is the standard one, as there seem to be at least two or three concerns of that name? I would like to know the "original." A.—P. S. Stubs, we believe. 2. Also, what will remove paint or varnish stains from ground glass doors?

(23) A. M. D. asks: 1. For an easy and cheap way of tracing patterns for scroll or net work, without using a pencil. A. Place carbon paper between the pattern and the wood, and trace the design with a stylus. 2. Also to prevent the fret saws from breaking easily when working in the machine. A. Use a good machine, good saws, and exercise care.

(24) F. W. I. asks: Does a rapidly moving train cause a greater strain on a bridge than one moving slow. If so, why? A. Yes, because the motion of a train produces a series of blows on the rails.

(25) A. N. M. writes: I am preparing to construct a dynamo-electric machine according to the drawings in No. 161, SCIENTIFIC AMERICAN SUPPLEMENT. Will you answer the following questions, namely: 1. Should the brass caps at the ends of the armature play just within the electro-magnets, or just without? A. Just without. 2. What amount of each of the Nos. 14, 16, and 18 wire will be needed? A. 2 or 3 feet of No. 14, about 5 lbs. of No. 16, and 1/2 lb. of No. 18. 3. Should the vulcanite for the commutator be hard, or soft and yielding? A. It should be hard. 4. Can the electro-magnets be wound with separate wires and the wires united with a joint, or should they be wound with the same wire without a break? A. You can wind the two parts of the magnet separately, and unite them after they are fixed to the base. 5. Again, what is the force of the word "excess" as used in chemistry and medicine? I consider that it means a little more than enough of an acid to neutralize an alkali, or the reverse. Am I correct? A. Yes. 6. What is the meaning of gtt. of ss. and A in medicine or chemistry? A. Gtt. or gtt., gutta or guttæ, drop or drops; ss., semis, half; A or a, Ana (Greek ἀνά), of each the same quantity. The expressions are not used in chemistry, but in medicine.



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