

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

AN INQUIRY ANSWERED.

H. W. Johns Mfg Co., 87 Maiden Lane, New York. MY DEAR SIRS. I have replied to inclosed letter from Mr. Good as follows, and perhaps you would be interested to know it: "I have had Johns' Asbestos Paint upon the outside work of my house in exposed positions for four years, and after that time there is no chalky appearance, it does not rub off, has not worn or lost its color or brightness, and is in no need as yet of renewing. The paint is yet in good order. Some lead and oil paint on other parts of the house no more exposed than the Asbestos Paint, has been renewed twice, and the last coat is now worse looking than the four-year-old Asbestos Paint. The roof of my piazza, painted in stripes of red and green of Johns' paints three years ago, is still bright and fresh and in good order." HENRY STEWART, Formerly Editor American Agriculturist.

Elm Boards Wanted.—C. Ledig, 13 Peck Slip, N. Y. Attention, Patentees.—A Good, Practical Invention Wanted for Introduction. Address C. M. H., Room 31, 157 Broadway, New York.

For Belt Studs, Belt Hooks, Belt Couplers, Belt Punches, Baxter Wrenches, write Greene, Tweed & Co., N. Y. Type Writer Wanted; good and cheap. Penfield Block Co., Lockport, N. Y.

Wanted.—Manufacturers of Lubricants addresses. Box 777, Bradford, Pa. Wm. J. McDougall.

List of 3,000 responsible Farmers in Penn., New Jersey Md., and Va., selected. Mailed on receipt of \$2. Farmers Register, 2623 Warnock St., Philadelphia, Pa.

"Little Giant" Engines and Boilers, users say, are "the best ever made." Madison Machine Co., 406, 408 Broadway, New York.

Valuable Patent for Sale; price low. Address A. B., Post Office Box 2032, Philadelphia, Pa.

Our goods rank first for quality, safety, and durability. Please compare them with any other make, and if not found better and cheaper, quality considered, we will bear the expenses of the trial. Lehigh Valley Emery Wheel Co., Lehigh, Pa.

Granville Hydraulic Elevator Co., 1193 B'way, N. Y. The Mining Record, devoted to mining, contains the latest reliable reports from all the mines, with perfect reports of the Mining Stock Market. Subscription, \$4 yearly. Sample copies free. A. R. Chisolm, Proprietor, 61 Broadway, New York.

For Leather, Rubber, or Cotton Belting, Linen Hose or Rubber Hose, write Greene, Tweed & Co., New York.

To Stop Leaks in Boiler Tubes, use Quinn's Pat. Ferrules. Address S. M. Co., So. Newark, N. H.

Light and Fine Machinery and Tools to Order. Lathe catalogue for stamp. Edward O. Chase, Newark, N. J.

Malleable and Gray Iron Castings to order, by Capital City Malleable Iron Co., Albany, N. Y.

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J. Combination Roll and Rubber Co., 27 Barclay St., N. Y. Wringer Rolls and Moulded Goods Specialties.

Send for Pamphlet of Compilation of Tests of Turbine Water Wheels. Barber, Keiser & Co., Allentown, Pa. Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N. J.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock, 80 to 88 Market St., Chicago, Ill.

Wood-Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

"How to Keep Boilers Clean," and other valuable information for steam users and engineers. Book of sixty-four pages, published by Jas. F. Hotchkiss, 84 John St., New York, mailed free to any address.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Split Polleys at low prices, and of same strength and appearance as Whole Polleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, Pa.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsbg., Pa.

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y. Improved Skinner Portable Engines. Erie, Pa.

Clark & Heald Machine Co. See adv., p. 62. Ajax Metals for Locomotive Boxes, Journal Bearings, etc. Sold in ingots or castings. See adv., p. 61.

Draughtsman's Sensitive Paper, T. H. McColin, Phila., Pa. For Mill Mach'y & Mill Furnishing, see illus. adv. p. 60.

Skinner's Chuck. Universal, and Eccentric. Sep. 61. C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 77.

The Sweetland Chuck. See illus. adv., p. 78. Electric Lights.—Thomson Houston System of the Arc type. Estimates given and contracts made. 631 Arch, Phil.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Also manufacturers of Solomon's Parallel Vise, Taylor, Stiles & Co., Riegelsville, N. J. Peck's Patent Drop Press. See adv., page 94.

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y.

The Brown Automatic Cut-off Engine; unexcelled for workmanship, economy, and durability. Write for information. C. H. Brown & Co., Fitchburg, Mass.

Ball's Variable Cut-off Engine. See adv., page 92. The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 15,000 Crank Shafts, and 10,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

Diamond Engineer, J. Dickinson, 64 Nassau St., N. Y. The Improved Hydraulic Jacks, Pumps, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Paragon School Desk Extension Slides. See adv. p. 93.

Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, Mfrs, 23d St., above Race, Phila., Pa.

Brass & Copper in sheets, wire & blanks. See adv. p. 94. Geiser's Patent Grain Thrasher, Peerless, Portable, and Traction Engine. Geiser Mfg. Co., Waynesboro, Pa.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 93.

For the manufacture of metallic shells, cups, ferrules, blanks, and any and all kinds of small press and stamped work in copper, brass, zinc, iron, or tin, address C. J. Godfrey & Son, Union City, Conn. The manufacture of small wares, notions, and novelties in the above line, a specialty. See advertisement on page 93.

Supplee Steam Engine. See adv. p. 93. Magic Lanterns and Stereopticons of all kinds and prices. Views illustrating every subject for public exhibitions, Sunday schools, colleges, and home entertainment. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., New York.

New Economizer Portable Engine. See illus. adv. p. 95. Sewing Machines and Gun Machinery in Variety. The Pratt & Whitney Co., Hartford, Conn.

Saw Mill Machinery. Stearns Mfg. Co. See p. 93. For Shafts, Pulleys, or Hangers, call and see stock kept at 79 Liberty St., N. Y. Wm. Sellers & Co.

Wm. Sellers & Co., Phila., have introduced a new injector, worked by a single motion of a lever.

Lightning Screw Plates and Labor-saving Tools, p. 93.



NOTES TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

Were new 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 do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

TO OUR CORRESPONDENTS.—The destruction of our old offices by fire January 31, 1882, caused the loss of a considerable number of inquiries from correspondents and of our replies thereto, which we had in hand for publication. Those of our friends who find their inquiries neglected will know from the above the reason why; and they will oblige the editor by repeating their inquiries without delay.

(1) J. W. L. asks: Will the result be the same in hardening steel either by a charcoal fire or by illuminating coal gas? Process: 100 twist drills packed close in a 1 1/2 inch wrought iron tube, one end left open to the fire; to be heated exactly the same temperature in both cases, and to be cooled in sperm oil. A. Yes; if heated to the same temperature they can only be uniformly heated with gas by using great care. A better mode of heating is in a metal bath of proper composition, and kept at uniform temperature above the fusing point.

(2) F. P. H. asks: What is the best form of engine for aeronautical experiments? A. Direct acting; working parts light; made of steel or gun metal. It should be accurately balanced, and run at high velocity.

(3) B. C. writes: On burning white (letter) paper on an earthenware dish a dark thick substance is left. Will you please let us know what it is composed of? A. Carbonaceous matters and ash or mineral matters. The latter vary with different papers. Usually this part of the residue consists chiefly of talc or soapstone (silicate of magnesia), clay (silicate of alumina) and sulphate of alumina. By heating the mass to redness for a few minutes in contact with air the black carbonaceous matter burns away, the mineral portion alone remaining. Talc, clay, and alum compositions are used in weighting and sizing the paper, hence their presence in the ash.

(4) G. W. S. asks: Can you give a receipt for plating metals—anything that will change the color of brass to imitate silver? A. You will find direction for plating brass, etc., in SUPPLEMENT, No. 310.

(5) E. M. E. asks why smokestacks of ships are somewhat inclined backward, while it is not so on steamboats, locomotives, etc. I have found no one yet to give me a satisfactory explanation. A. It is a mere fancy of the builders to make the ship look more "rakish."

(6) C. C. asks: Why are oscillating engines not more generally used? A. Because of unequal wear and somewhat complicated valve gear.

(7) J. B. B. asks whether we consider the so-called granite and marbled ware now so commonly sold as a safe article to use for culinary purposes. A. According to recent tests by our health authorities these enamels do not appear to be unwholesome; and are not liable to contaminate food cooked in contact with them.

(8) F. M. L. asks: Has any means been devised of using as fuel the siftings, dust, etc., of coal mines? If so, what is the device? A. Yes; they are

burned successfully on some of the locomotives of the Pennsylvania Railroad, by a patent apparatus or arrangement. We cannot give you the details.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated: A. H. J.—It is not meteoric—but consists chiefly of augite and quartz—possibly carrying a little zinc and silver.

[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending January 24, 1882, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 261 Broadway, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Table listing inventions with names and dates. Includes: Agitator or egg beater, G. W. Richardson; Amalgamator and concentrator, A. Oliver; Animal trap, F. Winslow; Arch bars, machine for bending and punching, C. G. Cross; Augers, countersink attachment for, C. W. Cutter; Axle box, carriage, F. A. Carnes; Bag fastener, T. Sanford; Bag holder, F. Allen; Ball trap for billiard tables, F. Saunders; Battery, See Voltaic battery; Bed bottom, C. H. Fitch; Bed bottom, spring, O. S. & W. S. Foster; Bed bottom, spring, M. A. Hunt; Bed bottom spring, T. A. & W. H. Rhodes; Bed lounge, J. L. Newton; Bicycle, J. E. Richard; Bird cage feed cup, J. Maxheimer; Bitters, alterative and tonic, D. W. Edwards; Blind, inside window, E. W. Bowlsleigh; Boiler, See Steam boiler; Boiler furnace, J. Gerber; Bolts, manufacture of, C. Hall; Book, manifold copying, J. R. Carter; Box, See Axle box. Letter box. Post office lock box. Toy money box; Bracelet stock, die for striking up, Keller & Frey; Bracket, See Lantern bracket; Brake, See Car brake; Brick and mould, angle, J. F. Edwards; Brick and tile machine, A. Wehlann; Burner, See Gas burner. Hydrocarbon burner. Vapor burner; Butter cutter, J. Porsch, Jr.; Button hole cutting machine, C. E. Langmaid; Button setting instrument, G. W. Prentice; Calender for cloth and other fabrics, Sarfert & Vollert; Canister or store can, D. F. Goodyear; Car, T. L. Wilson; Car brake, C. Higham; Car coupling, E. P. Goodrich; Car coupling, C. L. Horack; Car coupling, F. Johnson; Car coupling, W. Scott; Car for railways, wrecking and construction, L. K. Jewett; Car, railway, W. P. Prewitt; Car, stock, I. Kitsee; Car wheel, J. V. Dinsmore; Cars, heating and ventilating, M. D. Fitzgerald; Cars, ventilating, M. C. Jones; Carding machine, J. Wall; Carpet fastener and stair rod securer, combined stair, C. D. Stone; Carpet fastener, stair, M. Krickl; Carrier, See Thrashing machine straw carrier; Case, See Piano case; Chandelier, drop light, J. Trigge; Chain, drive, C. H. Low; Chinoline, preparation of, Pickhardt & Endemann; Cigar holder, W. J. Fitzgerald; Cigarette machine, E. Side; Clamp, A. Kraiss; Clasp, See Corset clasp; Clay, lawning and cleaning, S. G. Phillips; Clock movement, A. E. Hotchkiss; Coffee, compound for flavoring, F. Broz; Coke crusher J. R. Davis; Comb, V. W. Wilson; Corn sheller B. A. Adams; Corset clasp, W. F. Gilbert; Counter stiffeners, treating hide in the manufacture of, W. H. Metcalf; Coupling, See Car coupling. Cultivator beam coupling. Pipe coupling. Shaft coupling; Crib and table, interconvertible, S. S. Burr; Crusher, See Coke crusher. Quartz crusher; Crushing sugar, salt, etc., device for, E. P. Chesbro; Cuffholder, false, G. A. McIntire; Cultivator, A. Gump; Cultivator beam coupling, J. T. Hamilton; Cultivator, wheel, T. A. Palm; Cultivator, wheel, P. F. Wells; Cup, See Bird cage feed cup; Curtain cord tightener, C. Senwaibold; Curtain fixture, Darling & Griswold; Curtain fixture, M. S. Wing; Cutter, See Butter cutter. Pipe cutter. Vegetable cutter; Dental articulator, L. & J. W. Manker; Die, See Pipe die; Digger, See Potato digger; Draught equalizer, J. Horrigan; Draught equalizer, J. Sebastian; Draught equalizer, C. L. Spencer; Drier, See Fruit drier; Drill and countersink combined, W. H. Southwick; Earring, H. G. Mackinney; Electric cable, R. S. Waring; Electric lighting apparatus, M. G. Farmer; Electric lighting system, M. G. Farmer; Electric machine, short circuiting switch for dynamo, W. Hochhausen;

Table listing inventions with names and dates. Includes: Electric machines, polarity protector for dynamo, W. Hochhausen; Electric signaling apparatus, Pickford & Gregory; Elevator, H. Roberts; Elevator safety attachment, F. T. Ward; Embroidering machine, C. A. v. Gonzenbach; Engine, See Road engine. Rotary steam engine. Steam and air engine; Evaporating salt brine, McBean & Watson; Explosive compound, C. Dittmar; Fan, C. Strickrodt; Farm engine boilers, fire box attachment for, H. Gillett; Faucet, measuring, J. H. Blum; Fence, electric wire, J. H. Connelly; Fence, portable, S. K. Rahn; Fence, wire, E. Ruane; Filter, water, A. Bell; Fire alarm, automatic, I. Kitsee; Fire annihilator, I. Kitsee; Firearm, breech-loading, H. Scott; Fire escape, G. W. Levi; Fire escape, Williams & Rundle; Fire kindler, E. E. Glaskin; Foot protector, W. Klein; Frame, See Lounge frame. Mosquito bar frame; Fruit drier, domestic, J. B. Sweetland; Fruit jar cover, G. H. Brown; Furnace, See Boiler furnace; Gauge, See Water gauge; Galvanic pad, L. Hechinger; Gas burner, electrical, J. Redding; Gas for preserving food, preparing, E. R. McCall; Gas lighting, electric, J. Redding; Gate, W. O. Stiecker; Gelatine and glue from animal refuse or offal, manufacture of, A. J. Huet; Glove fastening, S. Montgomery; Grain header, J. W. & A. B. Jory; Grain separator and cleaner, D. Salisbury; Grate, J. Kraupa; Grinding and reducing grain, etc., mill for, J. Stevens; Guard, See Spinning machine thread guard; Hame staple, C. Lange; Handle, See Plow handle; Harrow and seed sower combined, sulky, A. C. Scarr; Harrow evener, H. H. Fischer; Harvester, W. N. Whiteley; Harvesting machine, L. H. Lee; Harvesting machine, C. M. Young; Heel trimming machine, Tyler & Stone; Hinge, spring, H. Howson; Hoisting and conveying apparatus, F. A. Clarkson; Holder, See Bag holder. Cigar holder. Cuff holder. Pin jewel holder. Stereotype plate holder; Homologues of phenol, naphthol, and resorcin, manufacture of the higher, A. Liebmann; Hoof protector, J. M. Goodman; Hook, See Snap hook; Hoop cutting machine, L. Holt; Hopper, feed, J. R. Walsh; Horseshoe, J. B. Finch; Hydrocarbon burner, liquid, A. S. Munger; Insulator for telegraph wires, C. L. Gore; Ironing table and clothes bars combined, H. Keeler; Jug, J. Cook; Knob attachment, B. H. Lockwood; Lamp and generator, combined electric, E. Morey; Lamp, electric, H. S. Maxim; Lamp, gas, C. W. Muchall; Lantern, A. L. Baron et al.; Lanternbracket, W. M. Phelps; Lathe, engine, G. A. Gray, Jr.; Lathing, metallic, A. Knisely; Lead by the old Dutch process, corroding house for the manufacture of white, W. H. Wetherill; Leading staff for bulls, S. M. Wells; Leaf and plant, artificial, C. I. Hahn; Letter box, street, T. McLaughlin; Lever, steam, J. B. Collin; Life preserving garment, C. Williams; Lock, See Nut lock; Lounge frame, J. F. Komp; Lubricant, W. Parkinson; Magneto-electric machine, W. Hochhausen; Metal articles, machine for bending and shaping, A. R. Woodyatt; Metallic fastener, G. W. McGill; Mill, See Roller mill. Sugar mill. Windmill; Mosquito bar frame and canopy, combined, C. P. Howe; Motion, device for converting, J. W. Anderson; Motion, mechanism for converting rotary into oscillating, J. Hornig; Motor, See Windmill motor; Mucilage receptacle, W. Kennish; Musical instrument, automatic, J. McTammany, Jr.; Musical instrument, mechanical, Morris & Brott; Nail driving machine, J. J. Burk; Nut lock, Beamer & Richardson; Nut lock, A. Berryhill; Nut lock, B. F. Click; Nut lock, J. Frederick; Ore concentrating and separating apparatus, M. J. Butzel; Ore washer, S. P. Speers; Organ stop action, reed, W. C. Kantner; Overstitching machine, J. E. Richard; Oxidizing lead bullion containing precious metals, apparatus for and process of, J. Tunbridge; Pad, See Galvanic pad; Parer, apple, F. W. Hudson; Pea shelling machine, F. Molint; Piano case, J. & J. P. Becker; Pin jewel holder, F. Gundorph; Pipe coupling, J. C. Githens; Pipe cutter, C. Fenton; Pipe die, drain, W. L. Ogden; Pipe gripe, W. B. Tatro; Planter and fertilizer distributor, corn, W. Cassill; Planter corn, L. Scofield; Planter, cotton, Byers & Dorser; Planter, cotton and corn, J. M. Turley; Planter, seed, J. W. Robertson; Plow attachment, R. Updike; Plow handle, W. P. Brown; Plow handles, bending, G. C. Avery; Plow, sulky, H. Miller; Post office lock box, W. H. Taylor; Potassium, manufacture of carbonate of, C. R. Engel; Potato digger, J. J. Meldericks; Press, See Printing press; Pressure regulator, pneumatic, H. F. Fitzpatrick; Printing press, J. Henry; Protector, See Foot protector. Hoof protector. Sole and heel protector; Pump, G. S. Bartlett;