

Business and Personal.

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

Edson's Time, Speed, and Pressure Recording and Alarm Gauge. The only perfect life-saving gauge in market.

HOBOKEN, N. J., December 3, 1881. H. W. Johns Manufacturing Company, New York.

Sparks and embers fell in large quantities on your Asbestos Roofing (with which our coal-saed and ferry-houses are covered) without injury to the roofs.

No repairs to the roofs have been made necessary by the fire. Yours truly, J. J. CHASE, Supt.

Wanted.—A few hundred yards of light Railroad Iron, about 20 lb. rail. R. N. & H. Valentine, Woodbridge, N. J.

For Machinists and Apprentices.—The Student's Illustrated Guide to Practical Drafting. Sent on receipt of price, \$1. T. P. Pemberton, 92 Liberty St., New York.

Combination Roll and Rubber Co., 27 Barclay St., N. Y. Wringing Rolls and Moulded Goods Specialties.

List of Machinists in United States and Canada, just compiled; price, \$10. A. C. Farley & Co., Philadelphia.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock, 30 to 38 Market St., Chicago, Ill.

Telegraphic, Electrical, and Telephone Supplies, Telegraph Instruments, Electric Bells, Batteries, Magnets, Wires, Carbons, Zincs, and Electrical Materials of every description.

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

Abbe Bolt Forging Machines and Palmer Power Hammers a specialty. S. C. Forsyth & Co., Manchester, N. H.

Cope & Maxwell M'fg Co.'s Pump adv., page 398. Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject.

Punching Presses & Shears for Metal-workers, Power Drill Presses, all sizes. Power and Foot Lathes. Low Prices. Peerless Punch & Shear Co., 115 S. Liberty St., N. Y.

Pure Oak Leather Belting. C. W. Army & Son, Manufacturers, Philadelphia. Correspondence solicited.

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

Peck's Patent Drop Press. See adv., page 398. Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, Limited, Erie, Pa.

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

Best Oak Tanned Leather Belting, Wm. F. Forpaugh, Jr. & Bros., 581 Jefferson St., Philadelphia, Pa.

Presses, Dies, Tools for Working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y.

Learn Telegraphy. Outfit complete, \$4.50. Catalogue free. J. H. Bunnell & Co., 112 Liberty St., N. Y.

List 27.—Description of 3,000 new and second-hand Machines, now ready for distribution. Send stamp for same. S. C. Forsyth & Co., Manchester, N. H., and N. Y. city.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 413.

Mineral Lanes Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 413.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 412.

Safety Boilers. See Harrison Boiler Works adv., p. 412. 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 448. Paragon School Desk Extension Slides. See adv. p. 450.

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.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Ajax Metals for Locomotive Boxes, Journal Bearings, etc. Sold in ingots or castings. See adv. p. 449.

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. 448.

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.

Magic Lanterns and Stereopticons of all kinds and prices. Views illustrating every subject for public exhibitions, Sunday schools, colleges, and home entertainment.

Drop Hammers, Power Shears, Punching Presses, Die Sinks. The Pratt & Whitney Co., Hartford, Conn.

For Shafts, Pulleys, or Hangers, call and see stock kept at 75 Liberty St., N. Y. Wm. Sellers & Co., Phila., have introduced a new injector, worked by a single motion of a lever.

The Sweetland Chuck. See illus. adv., p. 450. Skinner's Chuck. Universal, and Eccentric. See p. 449.

Don't buy a Steam Pump until you have written Valley Machine Co., Easthampton, Mass.

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.

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.

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.

(1) P. J. asks: How shall I construct a furnace so that in evaporating cane juice the pan will boil all the way alike? In the last stage, the fire being diminished, I have to stir from back to front, which darkens the sirup.

(2) J. A. L. asks: Is there any substitute for quicklime in the oxyhydrogen light which will be more permanent and less fragile? A clear, well-burned magnesian lime, prepared from dolomite, is better than ordinary lime.

(3) T. H. C. writes: 1. The SCIENTIFIC AMERICAN some time ago contained a reference to "Spence's" or "Spencer's" metal, a compound of sulphur with something else.

(4) S. S. Mfg. Co. ask: Will you please oblige us, through the medium of your valuable paper, with a recipe for making draughtsmen's sensitive paper for copying blue prints? It is extensively used by railroad companies for duplicating, and is a similar process to that used by photographers.

(5) J. D. B. asks: Is there a phosphorescent paint or wash that is of practical use in lighting, or that will assist in lighting a mill by night; and if so, how can it be made? A For direction for preparing phosphorescent paint, see page 53, last volume.

(6) H. B. asks how to make a solution for silver plating—a solution that will deposit the silver in a polished state. A. See Stereotyping and Electrotyping, Electrometallurgy, in SUPPLEMENT, No. 310.

(7) E. A. C. asks: 1. Can you give me information in regard to the composition known as "Spence metal," of recent discovery and origin? Can it be procured in quantities. How can I get a specimen? A. See "Spence Metal," in SUPPLEMENT, No. 222.

(8) J. L. writes: Would the developer, described in SCIENTIFIC AMERICAN of May 7, 1881, in answer to S. B. D., work without the addition of nitrate of silver? As the formula given by W. D. Richmond, SCIENTIFIC AMERICAN SUPPLEMENT, No. 226, shows that all of the AgNO3 is converted into AgBr.

(9) C. K. asks: Will you tell a number of us how thermometer tubes are graduated? A friend ordered a box of them. There were no two alike; all were of the same length.

(10) W. M. M. asks: Is there any difference of water level at the Isthmus of Panama, between the Pacific Ocean and the Caribbean Sea? A. There is no absolute level; but, since the tides are much greater on the eastern side of the Isthmus, the water level at high tide on that side is several feet above high water level on the western side.

(11) F. H. G. asks: How can I make a solution for copper plating? A. See Electrometallurgy and Copper Deposits, in SUPPLEMENT, No. 310.

(12) E. M. H. asks: 1. What can I use for packing the plunger of a lead pump for oil of vitriol? Rubber will not stand. A. Try asbestos packing. See our advertising columns for addresses of dealers.

(13) W. T., Jr., asks: Has there been any means invented to successfully prevent the reuse of canceled postage stamps? A. No.

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

S. B.—It consists chiefly of copper and iron sulphide and carbonates, probably carrying silver. If the sample is representative of the body of ore, the property is likely to prove a valuable one.—R. J. C.—It is a piece of burnt iron or steel—of artificial origin.—M. A.—It is impure phosphocalcite—a native phosphate of copper.



Notes & Queries

HINTS 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. 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 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.

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending December 6, 1881. AND EACH BEARING THAT DATE.

Table listing various inventions with their patent numbers and dates. Includes items like 'Acid, manufacture of sulphuric', 'Adding machine', 'Aerial navigation', 'Air, apparatus for purifying', 'Alarm', 'Annunciator for telephone signals', 'Apple corer', 'Aspersorium', 'Axle box, car', 'Axle lubricator', 'Baling press', 'Ball, See Tube welding ball', 'Bar, See Harvester linker bar', 'Battery, See Galvanic battery', 'Bedstead, sofa', 'Beer cooler', 'Belt tightener', 'Berry crate', 'Bird cage', 'Board, See Bosom board', 'Boiler, See Range boiler', 'Bolt threading machine', 'Book clasp', 'Boot and shoe burnishing and polishing machine', 'Boot and shoe heels and soles, protecting plate for', 'Bosom board', 'Botting machine', 'Botting machine, compound', 'Box, See Axle box', 'Braid roll binder', 'Brake, See Sled brake', 'Brush', 'Bucket, sap', 'Buckle, G. M. Hubbard', 'Buckle, shoe', 'Burner, See Lamp burner', 'Button, detachable', 'Button fastener', 'Button or stud', 'Camera plate holder', 'Cap, knit', 'Car coupler', 'Car coupling', 'Car coupling, C. L. Cloutman', 'Car coupling, R. Jones', 'Car couplings, draw bar attachment for', 'Car curtain, flexible', 'Car, dumping', 'Car replacer', 'Car seat', 'Car, stock', 'Car wheel', 'Car wheels, manufacture of', 'Card, thread', 'Carpet and oil cloth fastener', 'Carriage spring', 'Carriage wheel', 'Cartridge capper and uncapper', 'Case, See Writing case', 'Cask or barrel, knockdown', 'Caster', 'Chair, See Folding chair', 'Chair, J. W. H. Doubler', 'Chuck, lathe', 'Chuck, lathe, J. N. Skinner', 'Churn, rocking', 'Cigar box', 'Clamp, See Net clamp', 'Clasp, See Book clasp', 'Cleaner, See Grain cleaner', 'Cloth cutting machine', 'Clothes pounder', 'Clutch for hoisting apparatus', 'Coal and rock drilling machine', 'Cock or valve, globe', 'Coffee, etc., apparatus for roasting', 'Coffee roaster', 'Collar, horse', 'Comb, See Currycomb', 'Commode chair', 'Connecting rods, device for increasing the throw of', 'Cooler, See Beer cooler', 'Copying pad', 'Coupling, See Car coupling', 'Crate, See Berry crate', 'Crate for vegetables, fruit, etc.', 'Crib and cradle, folding', 'Crutch', 'Cultivator', 'Cultivator fender', 'Cultivator shovel', 'Cupola and blast furnace', 'Currycomb', 'Cut-off and throttle valve for steam engines', 'Safety', 'Dental flask', 'Drawer pull', 'Drill, See Rock drill', 'Electric circuit wires, underground conduit for', 'Electric conductor, subterranean', 'Electric machines, armature for dynamo', 'Elevator, See Hay elevator', 'Water elevator'.

COMMUNICATIONS RECEIVED.

On German Hygienic and Life-saving Exhibition. On a Rainbow. By J. B. D.

