

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.

THE SINGER MFG COMPANY'S CASE FACTORY, SOUTH BEND, IND., NOV. 4, 1881.

H. W. Johns Mfg Co., New York: GENTLEMEN: Some of your Asbestos Roofing was used to cover our dry kilns during 1879, and at this date is in good order. The under side of roof is exposed to steam and acid generated in drying lumber, and a temperature of 250 deg. heat.

While the roof rafters and sheathing have cracked by the heat, your roofing shows no signs of damage. Tin roofs painted both sides proved to last but a few months, while the ordinary gravel roofs are useless on our kilns.

Yours very truly, THE SINGER MFG CO., L. PINE, Supt.

For the Garden and Farm.—A great variety of Seeds and Implements. Send for catalogue. Address R. H. Allen & Co., P. O. Box 376, New York city.

To Stop Leaks in Boiler Tubes, use Quinn's Pat. Ferrules. Address S. M. Co., 80 Newmarket, N. H.

The Berryman Feed Water Heater and Purifier and Feed Pump. I. B. Davis' Patent. See illus. adv., p. 44.

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

Chemist's Pocket Book.—For Chemical Manufacturers, Metallurgists, Dyers, Distillers, Brewers, Sugar Refiners, Photographers, etc. By Thomas Bayley. \$2, mail free. E. & F. N. 2pon, 46 Broome St., New York.

Patent Wanted.—I want to buy whole or part interest, or manufacture on royalty. Address H. C. Lyon, New York.

Manufacturers, Steam Boiler Owners, Towns and Cities desiring pure water, send for circular to the Newark Filtering Co., 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 Hubber 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.

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

Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N. J.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock, 89 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 Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocum & 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., M. Lloyd, Son & Co., Pittsbg, Pa.

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

Cope & Maxwell Mfg Co.'s Pump adv., page 45.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's adv. p. 45.

Safety Boilers. See Harrison Boiler Works adv., p. 44.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 45.

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. McCollin, Phila., Pa. For Mill Mach'y & Mill Furnishing, see illus. adv. p. 60.

Common Sense Dry Kiln. Adapted to drying of all material where kiln, etc., drying houses are used. See p. 62.

The Porter-Allen High Speed Steam Engine. South-work Foundry & Mach. Co., 460 Washington Ave., Phila., Pa.

Skinner's Chuck. Universal, and Eccentric. See p. 61.

See Bentel, Margand & Co.'s adv., page 76.

Silica Paints (not mixed); all shades. 40 Bleeker St., N. Y.

Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. DuRoi, 24 Columbia St., New York.

50,000 Sawyers wanted. Your full address for Emerson's Hand Book of Saws (free). Over 100 illustrations and pages of valuable information. How to straighten saws, etc. Emerson, Smith & Co., Beaver Falls, Pa.

Eagle Anvils, 10 cents per pound. Fully warranted.

Peerless Colors for Mortar. French, Richards & Co., 410 Callowhill St., Philadelphia, Pa.

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

Gould & Eberhardt's Machinists' Tools. See adv., p. 77.

Gear Wheels for Models (list free); Experimental Work, etc. D. Gilbert & Son, 212 Chester St., Phila., Pa.

Barrel, Key, Hoghead, Stave Mach'y. See adv. p. 76.

For Heavy Punches, etc., see illustrated advertisement of Hiles & Jones, on page 76.

Centrifugal Pumps, 100 to 35,000 gals. per min. See p. 77.

The Medart Pat. Wrought Rim Pulley. See adv., p. 76.

Our goods speak for themselves, and a trial will convince the most skeptical of their superiority over all others. Lehigh Valley Emery Wheel Co., Lehighon, Pa.

Pays well on small investment.—Stereopticons, Magic Lanterns, and Views illustrating every subject for public exhibitions. Lanterns for colleges, Sunday schools, and home amusement. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., N. Y.

Combined Concentric and Eccentric Universal and Independent Jaw Chucks. The Pratt & Whitney Co., Hartford, Conn.

For best low price Planer and Matchner, and latest improved Sash, Door, and Blin Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa.

C. B. Rogers & Co., Norwich, Conn. Wood Working Machinery of every kind. See adv., page 77.

Portable Power Drills. See Stow Shaft adv., p. 76.

The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher, Schumm & Co., Philadelphia, Pa. Send for circular.

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.

Ore Breaker, Crusher, and Pulverizer. Smaller sizes run by horse power. See p. 77. Totten & Co., Pittsburg.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Also manufacturers of Solomon's Parallel Vise, Taylor, Stiles & Co., Riegelsville, N. J.

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.

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. B. L. asks: What is the explosive matter used in caps for toy pistols? Have tried chlorate potash and flour sulph; chlorate 2 grains to sulph., 1 grain. Will not work. I have also tried charcoal and chlorate, but without success, though the preparation explodes in a mortar. A. Usually a mixture of gunpowder and potassium chlorate. See Fulminating Compounds, page 48, volume xlv.

(2) F. F. writes: What can I put in sperm oil to prevent its gummy? A friend suggests a solution of soda. How could I mix it? Is there anything better that I could try, as I should think that the solution of soda would rust the machinery? A. Alkali will not accomplish what you require. The oil is usually treated by exposing it to contact with lead shavings for a few days. See "Lubricants," SUPPLEMENT No. 316.

2. Is sulphur good to cool hot bearings; and why? or what is the nature of sulphur, that it reduces the friction? A. No; when mixed with a heavy fluid vehicle it can sometimes be used advantageously on heavy bearings to relieve friction.

(3) B. C. B. writes: Is there any acid or compound that will dissolve or cut out the lime deposit in the waterback of a stove where hard water is used? A. We know of nothing that could be safely applied in the way proposed. Any solvent that would take out the lime would be apt to corrode the iron.

(4) F. H. L. asks what it is that is used on paper and silk that when it is exposed to heat or dampness will change from blue to pink—being blue when exposed to heat or dryness, and pink when exposed to cold or moisture. A. The liquid you refer to is very probably a dilute aqueous solution of pure cobalt chloride.

(5) J. B. G. asks: By what means can I blue the barrel of a gun or make it look like blue steel? I think chloride of iron and gallic acid are two of the compounds used, but I wish to be certain of it. A. Try the following: Scour the steel with a small quantity of a strong aqueous solution of soda, rinse in water, warm, and brush over with a solution of a quarter of an ounce chloride of iron dissolved in five ounces of water, and let it dry; then apply in the same manner a solution of one-fifth of an ounce pyrogallic acid in one ounce water, dry, and brush. Does not wear well without lacquering. The blue oxide is sometimes imitated by using a thin alcoholic shellac varnish colored with aniline blue or Prussian blue.

(6) R. S. M. writes: The countershaft of my planer and matcher broke square off, just at the edge of the journal. It is attached to frame, has three bearings, and ran smooth and had no jar. It just came in two, and stopped while running smooth. A. The probability is that the journal bearings were not in line, and the shaft was sprung at every revolution, until a break occurred, like bending a wire many times across the finger.

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending January 17, 1882, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

Table listing inventions with names and patent numbers. Includes items like Alarm, Attrition mill, Axle box, Axle box, car, J. C. Richardson, Ball bending machine, Barber's paper clip, Basin, flushing, B. Williams, Bed bottom, spring, D. L. Campbell, Bed bottom spring, J. V. Jarrett, Bed, cot, C. H. Hard, Beadstead, A. P. Brown, Beadstead, N. T. Melvin, Belt lifter, A. Gairing, Benzole from gas obtained by distillation of coal, manufacture of, J. A. Kendall, Bicycle head blanks, die for forging, H. B. Hicks, Billiard table adjuster and leveler, O. F. Hoover, Blankets, putting up, D. A. Swaney, Blotter, T. C. Townsend, Board, See Electric switch board, Sign board, Boat raising, lowering, and detaching apparatus, G. G. Laurence, Boiler furnace, W. Ennis, Bolt, See Chain bolt, Bolt, C. H. Goebel, Bolt heading machine, J. C. Duckworth, Boot and shoe heel, J. Kieffer, Bottle, drop, C. Gebert, Bottle stopper and fastener therefor, G. B. Stuart, Box, See Axle box, Cuff box, Packing box, Box, W. Livingstone, Box cover press, E. Austin, Bracelet and clasp, W. C. Edge, Bracelet, spring hinged, A. H. Engel, Brake, See Wagon brake, Branding chute, R. York, Bread and meat slicer, S. L. Denney, Bread cutter, A. Moore, Brick kiln, E. N. Hutchison, Bridge, J. B. McPherson, Bugzy, adjustable, W. T. Angus, Burner, See Vapor burner, Burning air and hydrocarbon vapors, device for, M. G. Fagan, Button, spring, L. Goulding, Button, swivel, S. O. Parker, Cable, anti-induction, W. R. Patterson, Cake pan frame, W. J. Cashen, Calipers, L. B. Woodruff, Can, See Oil can, Sheet metal can, Candle, illuminating, R. F. W. Loper, Car coupling, E. J. Roberts, Car coupling, L. Wilkerson, Car door fastening, C. C. Kilts, Car roof, G. B. Simons, Car, stock, G. F. Patterson, Car ventilator and dust arrester, C. C. MacConnell, Carbon conductors, apparatus for the preparation of, L. K. Böhm, Carbons, manufacturing, L. H. Latimer, Carpet sweeper, M. G. Stolp, Carriage spring, G. Pennoyer, Case, See File case, Cattle tie, A. Bynell, Chain bolt, C. H. Goebel, Chair, See Opera chair, Wheel or nursery chair, Chart, dress, E. E. Palmer, Chart for draughting garments, E. J. Linck, Chopper, See Cotton chopper, Churn washer, Taylor & Hamilton, Churn power, steam, T. Mayhew, Cigarette, H. A. Cuppia, Cigarette paper, A. V. D'Costa, Clamp, See Cultivator standard clamp, Rope clamp, Clip, See Barber's paper clip, Clock movement, A. E. Hotchkiss, Clock movement, B. B. Lewis, Clothes drier, rotary, H. Palmer, Coffee beans, apparatus for drying, W. A. Diesel-dorf, Coffee substitute, L. Chiozza, Colors upon vegetable fibers, producing azo, T. Hoiliday, Compound engine, G. B. Massey, Cooler, See Milk cooler, Copper and silver from their ores, extracting, J. Deby, Corn sheller, H. A. Hawkins, Cotton chopper and cultivator, J. D. Patterson, Cotton opener, R. Kitson, Coupling, See Car coupling, Thill coupling, Cream of tartar, manufacture of, E. Muller, Crimping machine, rand and welt, M. C. Flint, Cuff, I. P. Turner, Cuff box, I. P. Turner, Cultivator, M. Pate et al., Cultivator, W. B. Young, Cultivator standard clamp, H. C. Stahl, Curtain fixture, Darling & Nicholson, Cutter, See Bread cutter, Peg cutter, Dairy vat, D. H. Burrell, Dial, sun, H. A. Behn, Jr., Digger, See Potato digger, Disinfecting compound, D. Warren, Disinfecting device, water closet, D. Warren, Door hanger, E. U. Scoville, Door spring, A. B. Tanner, Double tree, E. Spear, Drier, See Clothes drier, Driving wheel, J. A. Hafner, Drying machine, centrifugal, T. Long, Electric lights, circuit regulating device for, C. M. Ball, Electric machine, dynamo, C. A. Hussey, Electric machines, commutator for dynamo, A. G. Waterhouse, Electric signal printing register, automatic, Wood & Brower, Electric signaling apparatus, automatic, Brower & Wood, Electrical switch board, J. B. Odell, Elevator, See Grain elevator, Hay elevator, Embroidering, M. Hoffmann, End gate, J. W. Handayside, End gate, wagon, D. H. Bauer, Engine, See Compound engine, Locomotive engine, Pumping engine, Reciprocating engine, Rotary engine, Excavator, coal, H. Wilverth

Table listing inventions with names and patent numbers. Includes items like Extractor, Fanning machine, Flowers & Talmage, Fare register, J. B. Benton, Feather trimming, ostrich, J. Hawlowetz, Fence, I. L. Landis, File case, index, H. E. Moon, File for bills, etc., J. T. Chynoweth, Fire alarm, E. Earley, Fire escape, B. Taylor, Fire extinguisher, automatic, P. Oriolle, Fire kindler, J. W. Blaisdell, Fish trap, Hoxie & Collins, Fishing reel, J. Vom Hofe, Fork, See Hay fork, Frame, See Cake pan frame, Piano action frame, Frame house, J. Boyd, Furnace, See Boiler furnace, Gas, method of and apparatus for the manufacture of combustible, N. A. Otto, Gate, See End gate, Sliding and swinging gate, Gate, N. C. Cooley, Glazier's points, machine for setting, G. W. Hubbard, Grain binder, S. D. Locke, Grain binder, automatic, P. F. Hodges, Grain elevator, E. C. Hinkley, Grain separator, J. Grube, Graphoscope, folding, J. Lee, Gun and gun carriage, D. M. Mefford, Halter and bridle trimming, J. S. Nelson, Hanger, See Door hanger, Harvester, S. M. Krigbaum, Harvester, W. N. Whiteley, Harvester, corn, E. W. Quincy, Harvester cutting apparatus, E. P. Curtis, Harvesting machines, adjusting the grain wheel of, W. K. Miller, Hay elevator and conveyer, S. E. Winsor, Hay elevator and stacker, J. Dain, Jr., Hay fork, C. Friberg, Hay rake, M. Butler, Hay stacker, L. W. Carson, Hay tedder, J. W. Ruhl, Hemp washer, T. J. Ferguson, Hinge, spring, G. M. Jewett, Hoisting bucket and dump car, combined, J. F. Taylor, Holder, See Pistol and carbine holder, Sash holder, Horseshoe, P. McCabe, House, See Frame house, Ice creeper, etc., H. Bland, Indicator, See Scale indicator, Jack, See Shoemaker's jack, Key, See Pole changing key, Kiln, See Brick kiln, Lamp, electric, M. G. Farmer, Lamp, electric, H. S. Maxim, Lamp, electric, J. Olmsted, Lamp or cigar lighter, hydrogen, F. Rhind, Lamps, carbon holder for electric, A. G. Waterhouse, Lantern for bicycles, P. Gray, Lantern, tubular, E. J. Hale, Lathe for trimming eccentric or polygonal forms, W. H. Lenhart, Leather dressing machine, W. Goodman, Life preserver, A. McDonald, Lifter, See Belt lifter, Pattern lifter, Light, See Skylight, Lock, See Nut lock, Permutation lock, Lock, W. H. Taylor, Locomotive engine, H. F. Shaw, Loom shedding mechanism, J. Denton, Measuring machine, cloth, A. Winter, Meat roaster, T. A. Gardner, Mechanical movement, C. H. Trask, Milk cooler, E. F. Smith, Mill, See Attrition mill, Rolling mill, Millstone driver, L. P. Weaver, Jr., Mirror, illuminate, Loth & Sinick, Moulding machines, guard for variety, G. Grill, Motor escapement, H. H. Hobert, Mower, lawn, M. Braun, Musical instruments, music rack for, W. H. Ivers, Necktie fastener, J. Goldberg, Nut lock, G. B. Hill, Nut lock, J. M. Williams, Nut lock, J. A. Simpson, Oil can, Righter & Griffith, Oil for mixing paints, treatment of resin, F. M. Reed, Opera chair, E. J. Smith, Ore washer, W. S. Wood, Organ bellows, J. W. Trainer, Packing and lining fabrics, machinery for manufacturing, R. H. Thompson, Packing box for fruit jars, etc., N. F. Tipton, Paint, distemper, W. S. & L. F. Welch, Pantry dresser, and sideboard, combined portable, L. O. Hudson, Paper bag machines, folding mechanism for, D. Appel, Paper feeding machine, J. C. Kneeland, Pattern lifter, Innis & Kane, Peg cutter, rotary, H. C. & J. N. Tower, Perforating checks and drafts, machine for, S. Ullman, Permutation lock, removable, R. W. Thurman, Piano action frame, upright, P. Gmelin, Pistol and carbine holder, L. S. Flatau, Planter, corn, L. Scofield, Planter, cotton, H. C. Tillery, Plow, D. P. Bigelow, Plow, F. Nitschmann, Pole changing key, W. E. Atbearn, Porch iron, H. S. Stauffer, Potato digger, H. Strait, Power, See Churn power, Power, apparatus for the transmission of, J. da Silva Sertori, Press, See Box cover press, Projectile, D. M. Mefford, Pump, C. Blasenroff, Pump, G. R. Hunter, Pumping engine, duplex, Reynolds & Rider, Quilting machine, Happe & Newman, Radiator, steam, T. P. Hardy, Railway alarm signal, T. H. Gibbon, Railway safety device, J. Gogerty, Railway signal, electric, Lebac & Loiseau, Railway signal, electric, C. D. Tidale, Rake, See Hay rake, Reaping machine, W. K. Miller, Reciprocating engine, L. B. Greer, Reel, See Fishing reel, Refrigerating, method of and apparatus for, T. S. Very, Register, See Fare register, Roaster, See Meat roaster, Rolling metal roll for, F. Holub, Rolling mill, W. E. Harris

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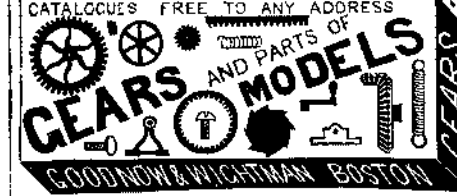


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Table listing various items and their prices, including rolling mills, saws, sewing machines, and other mechanical devices.

DESIGNS. Table listing various design items and their prices, such as pencil cases, range cooking, and sewing machine cases.

TRADE MARKS. Table listing various trade mark items and their prices, including cigars, corsets, and machinery.