

bath for electro-plating, but it is well to observe that the materials are extremely poisonous when introduced into the human system.

How can I make soft solder in thin sheets? A. By rolling.

(43) B. & S. ask how to detect the presence of benzine in turpentine? A. The presence of any notable quantity of benzine in turpentine can readily be detected by the sense of smell.

(44) R. L. F. asks of what the ink with which postage stamps are printed is made of? A. For the three cent stamps the ink is made of a mixture of Prussian blue and chrome yellow of a standard grade.

(45) N. C. L. asks how to copper plate leaves of trees, insects, feathers, and other perishable things, so as to preserve the form? A. Brush the leaves or other objects over with black lead.

How can I cast a medal, and what composition can I use? A. You can make the mould of calcined plaster of Paris. Old type metal is a good material to use for casting.

(46) G. R. G. asks: Is such a thing as a hydraulic ram without an air chamber practically possible? A. No.

(47) J. C. asks if there is a preparation or paint that, when applied to a building, will render it fireproof, and withstand the heat of a burning building adjoining? A. No.

(48) J. B. asks for a process for engraving on brass? A. Cover the plate with a film of wax and surround it with a border made of beeswax 1 part, pitch 2 parts, and tallow 1 part.

(49) A. S. asks for a recipe or composition for beeswaxing floors? A. In a hot solution of 5 lbs. of good pearlsh, in soft water, is stirred 10 lbs. of good yellow wax, shaved or rasped fine.

(50) L. P. S. asks for the quickest and best method of making vinegar from cider, and also which makes the best vinegar, early or late cider? A. Take, say 10 gallons, new cider, and suffer it to ferment fully, which will probably be in about two weeks if the weather be warm; then add about 8 gallons of new cider for producing a second fermentation, and in about two weeks add a like quantity to produce a third fermentation.

(51) Orator asks if the drug cucu possesses the power to make the bashful bold, as some persons claim for it? A. No; but a whiff or two of ether is said to allay "stage fright" and similar forms of nervousness.

(52) N. Y. asks: What is butter of antimony? A. It is liquid chloride of antimony. It is made by dissolving crude or roasted black antimony in muriatic acid with the addition of a little nitric acid.

(53) S. E. N. says: I want to prevent iron rollers from rusting that are used on wet and dry linen? A. Heat your rollers with steam if practicable.

(54) D. A. R. asks for a recipe for red ink, to be used with a rubber stamp? A. Mix aniline red 2 to 4 grains, alcohol 15 ozs., and glycerin 15 ozs.

(55) J. M. W. says: I send you a worm that I found in an old rotten log; is there several of the same kind in said log. Can you tell me the name of it? A. It is the julus multistriatus, belonging to the group millepedes. It is commonly found under sticks, etc. It is long, cylindrical, hard, with numerous feet, short and weak, attached to the under surface of the body nearly at the middle of the abdomen.

(56) A. W. P. says: I send a box containing a bug or fly; what is the name of it, and the product of the egg-laying? You will observe it was captured in the act of pregnant a piece of bark. The proboscis is perceived in the bark belongs enclosed in the sheath under the belly, which divides in halves to receive it. A friend says that the egg forms a grub between the bark and the wood. A. It belongs to the family of "horn-tails," urocerae, Leach, so called from the long prominent horn on the abdomen of the males, while the ovipositor or "saw," resembling that of the true saw flies, is at-

tached to the middle of the abdomen and extends considerably beyond its tip. The larvæ are "cylindrical fleshy grubs," of a whitish color, with a small rounded horny head and pointed horny tail. They are provided with powerful jaws, wherewith they bore long holes in the trunks of the trees they inhabit. They are wood eaters, and often do great damage to trees—mostly of pine and fir.

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

S. L. S.—No. 1, sample of clayey soil in small bottle, contains silica, alumina, lime, magnesia, oxide of iron, silicates, traces of sulphates, phosphates, and sulphides, organic matter, and about 15 per cent of water. It is not a rich soil. No. 2 is a deposit of carbonate of lime, with much carbonate and oxide of iron, in a trap rock.—W. H. W.—From the examination made, it appears to be a clay deposit, containing a large percentage of iron, moisture, and an oily or waxy substance somewhat resembling ozocerite—if the latter proves to be the case it may be of more value.—W. G. B. H.—It is semi-decomposed ferric sulphide—white pyrites—mixed with earth and iron oxides. The partial desulphurization may have been occasioned by heat.—A. D.—Dark greenish-blue powder. It is probably a mixture of sperm oil and aniline blue, with traces of copper and iron. The amount of substance was too small for a complete examination.

COMMUNICATIONS RECEIVED.

The Editor of the Scientific American acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects: On the Carolina Mantis. By C. F. S. On a Magnetic Railway. By J. W. C. Also inquiries and answers from the following: J. M. B.—W. W.—A. M. R.—A. T. O.—M. M.—E. H.—A. A. F.—M. M. S.—W. V. P.—A. W. P.—B. & N.—Mrs. L. N. C.

HINTS TO CORRESPONDENTS.

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 fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who publishes text books on journalism? Who makes well augers and drills?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States were Granted in the Week Ending

September 25, 1877,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table listing inventions with patent numbers and names of inventors, including items like Animal trap, Bale band tightening machine, Barrel head, Barrel head, J. L. Thomson, B. rrel-hoisting apparatus, S. A. Bates, Bath apparatus, vapor, J. V. Hirley, Bathshower, J. R. R. Morford, Bed bottom, W. M. Ward, Bed bottom and fire escape, R. O. Collis, Bed pan, C. S. Merriman, Bedstead, J. W. C. Peters, Bedstead, A. Hausen, Beehive, Hollingsworth & Walcott, Bell-striking apparatus, G. M. Stevens, Blacksmith's nippers and clincher, N. Brown, Bottle stopper, C. S. Barnard, Bottle stopper, F. Doll, Bottle stopper fastener, F. J. Seybold, Brake, car, L. T. Pyott, Brewers' grains, H. & S. H. Chapman, Broom, W. H. Paton, Buckle, composition-covered, O. Weiner, Buildings, joint for, C. Marcotte, Burial case, J. Askins, Burial casket, C. F. Spencer, Can for preserving food, A. S. Lyman, Candy, W. H. Towers, Cane and umbrella, T. F. Darcy, Cane juices, apparatus for, etc., J. Miller, Car axle, E. Danford, Car heater, C. A. West, Car tongues, B. McDevitt, Car wheel, W. Y. Cruikshank, Cars and vehicles, propelling, C. A. Gustafson, Carpeting package, Cobb & Evans, Carriage curtain fastener, W. B. Gould, Carriage tops, loop for, F. A. Neider, Celler bottom, J. R. Anthony, Chair, J. H. Rodebaugh, Chair, G. A. Waterhouse, Chair, folding, A. B. Cogswell, Chair, folding, C. H. Sutherland, Chair, folding, J. B. Wakefield, Chimney cap, E. Hawkes.

Table listing inventions with patent numbers and names of inventors, including items like Chimney cleaner, S. H. Dickerson, Cigars, packing, J. W. Shaeffer, Closet for rooms, S. N. Stewart, Cloth-folding machine, J. D. Elliott, Cook, J. M. Graham, Cook, C. Jarecki, Coin detector, E. Kronenberg, Coin wrapper, R. L. Ryan, Commode, J. Kutscher, Corkscrew frame, J. L. Hyde, Corset, C. A. Griswold, Cultivator, J. W. Sohn, Cutlery strap safe, A. E. Hively, Distilling petroleum, H. C. Wood, Ditching and tie laying machine, R. E. Nevin, Door fastening, E. Felge, Dumb waiter, J. Murtaugh, Electroplate molds, W. B. Closson, Evaporating pan, C. McCauley, Eyeglass support, F. H. Moore, Feather renovator, T. J. Adams, Feed water heater, G. Kratz, Fence, A. O. Correll, Fence, N. B. & T. Gunn, Fence post, T. L. Pope, Fence post, H. J. St. John, Fence wire stretcher, N. Burnham, Fire arm, breech-loading, B. O. Fasoldt, Fire arm magazine, E. R. Quimby, Fire arm, revolving, T. W. Bearcock, Fire arms, sight for, M. L. McCord, Fire fender, R. R. Crouse, Fishing line reel, G. T. Copeland, Flower vase, C. H. Crater, Food for animals, Bowker & Sturtevant, Freight chute, Crompton, Nicol & Hawley, Fringe, E. Greasily, Furnace, English & Burr, Furnaces, S. C. Salsbury, Furniture spring, E. A. Turner, Gas engine, F. Dieckmann, Gas regulator, Fenn & Groeninger, Gate, K. E. Rudd, Gate, J. S. Winsor, Grain drills, J. S. Bogle, Grappling hook, Johnson & Hanson, Gum, preparation of, R. Cotter, Hair-curling device, R. M. Rose, Harrow, See & Simonson, Harrow, cultivator, etc., G. E. Cooke, Harrow, planter, etc., J. B. Wall, Harvester, T. D. McCormick, Hat bodies, machine for, W. H. Behrens, Hay elevator and conveyer, I. S. Krick, Hay press, G. Ertel, Heat-conducting media, A. Densmore, Hen's nest, T. W. Russell, Hinge, C. B. Clark, Hoisting apparatus, R. O. Pierce, Horse collar, S. Reynolds, Horse collar, A. Rutherford, Horse detacher, Respass & Lumley, Horses from cribbing, preventing, Snoad & Burns, Horses, fly net for, E. Crebs, Horseshoe nail machine, J. Roy, Hose coupling, F. Stewart, Hose nozzle, Poh & Shoop, Hosiery goods, crocheting, J. M. Merrow, Hot air registers, W. R. Lafourcade, Hydrant valve, J. F. Neall, Inkstand, E. W. Stiles, Ironing table, G. Nason, Ladder, M. Foss, Ladder, J. Berg, Ladder, L. C. Boyington, Lamp, C. Capel, Lamp bracket, J. W. Birch, Lamp, H. Wellington, Lantern, E. B. Requa, Lantern, T. Wigley, Lard cooler, H. Rieman, Letter box, etc., combined, C. B. Geer, Lifting jack, E. T. Carswell, Lock, J. H. P. Insee, Loom-shedding mechanism, H. Wyman, Looms, weft fork for, S. Cook, Mail bag crane, F. W. Bridenbecker, Medicinal compound, M. C. Peden, Milk, machine for creaming, Lefeldt & Lentsch, Milk cooler, O. S. Prindle, Milk pail, W. Heuermann, Millstone-dressing machine, A. E. Smith, Miner's drill, Powell & Seddon, Nut lock, R. A. Kelly, Nut lock, W. Lyon, Oakum, making, C. M. Winter, Ore-roasting apparatus, A. B. Crosby, Organ stop action, H. H. Winger, Packing, adjusting piston, J. Varon, Painting machine, J. S. Mills, Pantaloon, shaping, E. B. Viets, Paper bag machine, T. W. Grinter, Paper box, H. L. R. Wolf, Paper, H. F. Evans, Paper or board, J. M. Cobb, Paper pulp, grinder for, Bowers & Curtis, Piano, W. B. Tremaine, Picture frame, A. Greenwood, Picture frame, L. Pattberg, Plane, bench, H. M. Clark, Plane, circular, H. M. Clark, Planter, T. T. Butler, Planter, J. Campbell, Planter, J. K. Taylor, Planter, Oberhotzer & Wilcox, Plow, J. J. Platt, Plow, J. T. Speer, Plow, D. M. Funk, Plow point, M. M. Bowers, Plow, G. A. Ellis, Plow, frog plates for, T. Meikle, Post hole auger, H. P. Haskin, Pulley, etc., O. H. Jadwin, Pulley, A. Streit, Pump, J. W. Avery, Pumps, operating, J. A. & D. J. Hurley, Punching machine, S. W. Baldwin, Railroad gate, W. B. Smith, Railroad rail, Baker & Root, Railway, rope traction, A. S. Hallidie, Refrigerator, G. Collins, Refrigerator and water cooler, A. Axt, Refrigerator building, R. M. Birdsall, Roof, S. Farquhar, Roof, J. B. Clark, Roofing tile, J. W. Hoyt, Rotary engine, J. Moorhouse, Sausage stuffer, W. R. Hoock, Saw, J. T. James, Sawmill set work, J. A. Robb, Saw sharpening machine, J. Murphin, Saws, crank power for driving, J. Shear.

Table listing inventions with patent numbers and names of inventors, including items like Saws, device for cooling, F. McDonough, Saws, etc., operating crosscut, E. Poincot, Saws, planing attachment to, J. T. James, Scale beams, marking, O. E. Russ, Seal lock, H. D. Barnes, Sewing machine, W. L. Grout, Sewing machine, G. W. Baker, Sewing machine take-up, A. Bocher, Shoe, J. W. Hatch, Show cases, T. H. B. Parks, Show stand, J. N. Heinel, Shutter fastener, G. W. Mudgett, Siphon, steam gage, J. S. Critchley, Sleeve and cuff retainer, M. M. Walk, Snap hook, C. W. Blakeslee, Soldering apparatus, A. S. Lyman, Spinning machines, mechanism for, A. P. Adams, Spoke-polishing machine, O. Allen, Spool holder and collar box, Flynn & Brown, Springs, making spiral, B. H. Lockwood, Stamp, cancelling, W. D. Wesson, Stamp for marking logs, J. L. Major, Stamp mill mortar, H. H. Scoville, Jr., Staples, inserting metallic, H. R. Heyl, Steam pipes, covering for, G. H. Lewis, Stocking supporter, C. C. Shelby, Stone-drilling machine, S. C. Nicolls, Stone-sawing machine, J. M. Ballou, Stove, M. Jones, Stove pipe elbow machine, A. Syversen, Stove pipe and chimney draft, G. H. Russell, Stoves, cover for, A. B. Summers, Stump extractor, W. Berry, Stump puller, H. M. Stitzer, Sugar, manufacturing, W. R. Elmenhorst, Sulky, W. J. Donley, Table, L. M. Bowdoin, Target, glass ball, W. Butterworth, Thill coupling, H. G. Morgan, Thrashing machine, W. W. Dingee, Ticket clasp, J. W. Lyon, Tillalarm, H. W. Morgan, Time lock, etc., J. Sargent, Tin foil, manufacture of, J. J. Crooke, Tinning apparatus, J. B. Jones, Tobacco, making plug, G. B. Okell, Tooth pick, J. S. Smith, Toy building block, H. M. Quackenbush, Treadle motion, H. B. & C. J. Barber, Trunk, C. F. Weston, Truss, L. T. J. Lubin, Turbines, gate for, J. H. Staples, Valve gear for steam engines, A. J. Vandegrift, Vegetable and fruit slicer, A. D. Sweet, Vegetable cutter, S. W. White, Vehicle body, H. Beard, Vehicle propeller, E. G. Adams, Vehicle seat, F. Reichle, Vehicle spring coupling, I. S. Krick, Vehicle, two-wheeled, E. B. Simpson, Vehicles, sand band for, A. Kaiser, Ventilating grain cars, W. S. Sampson, Ventilator, H. M. Sanders, Wagon jack, K. E. Rudd, Wagons, seat for, L. J. Bazzoni, Washing machine, O. Jurden, Watch key, D. D. Smith, Watch-winding device, W. H. Zinn, Whip and rein holder, G. C. Eastman, Whipsocket, G. P. Rose, Wood, splitting and bundling, O. Roelecke, Wrench and pipe cutter, B. Donohue, Yarns, dressing cotton, W. H. Perkins.

DESIGNS PATENTED.

- 10,258.—UPRIGHT PIANO CASES.—S. Beambach, New York city. 10,259.—BUTTONS.—A. H. Caron, Raunenthal, Prussia. 10,260.—PENCIL CASES.—W. S. Hicks, New York city. 10,261.—ORNAMENTING SPoons, FORKS, ETC.—D. B. Moulton, Lynn, Mass. 10,262.—HANDLES FOR SPOONS, FORKS, ETC.—G. W. Shiebler, Newark, N. J.

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