

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all, either by letter or in this department, each must take his turn. Special Information requests on matters of personal rather than general interest, and requests for Prompt Answers by Letter, should be accompanied with remittance of \$1 to \$5, according to the subject, as we cannot be expected to perform such service without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Minerals sent for examination should be distinctly marked or labeled.

(1) T. E. M. writes: Having occasion to use the following:

- R. Sodii borat. 3 ss. Sodii bicarb. 3 ss. Acid carbonic. 3 ii. Glycerine. 3 ii. Aque ad. 3 viii. M.

I was astonished at the bottle bursting with great force. No effervescence occurs until the glycerine is added, when it equals a Seidlitz powder solution. The same preparation I have long used in about one-eighth or one-tenth the above proportions to the same amount of water, in which no such reaction occurs, and this strength was prepared for the purpose of diluting when used. Will you please explain the cause of the effervescence? It will not occur if either the borax or soda is left out, but only when both are used, and only when the glycerine is added, and in proportion to the quantity of glycerine. A. Messrs. Senior and Lowe reported to the Pharm. Journ. and Trans., 1878, the result of experiments made with a view of determining the cause of the effervescence alluded to. A solution of borax (or other acid borates) to which a little litmus was added turned deep blue, but on the addition of some glycerine changed to the characteristic wine red produced by free boric acid. When sodium monoborate was used instead of borax, no red color was developed. They conclude that the glycerine separates the boric acid into free boric acid and a more basic borate, the former causing the evolution of the carbonic dioxide. Mannite, levulose, and dextrose are said to act in a similar manner to glycerine. Carbonic dioxide may be liberated from a bicarbonate by boiling with borax. The subject is treated in the Druggists Circular for June, 1878, and July, 1883. The same question came up at the March meeting of the Kings County Pharmaceutical Society, and is referred to on page 103, Weekly Drug News, March 14, 1885.

(2) R. B. R. asks (1) a receipt for a strong glue or cement used in sticking the ends of the cylindrical small wooden boxes for pills and ointment, made use of in medical dispensaries. A. An excellent liquid glue is prepared as follows: Soak 8 ounces of best glue in 1/2 pint of water in a wide mouth bottle, and melt by heating the bottle in a water bath. Then add slowly 2 1/2 ounces of nitric acid, stirring constantly. Effervescence takes place under escape of nitrous acid gas. When all the acid has been added, the liquid is allowed to cool. Keep it well corked, and it will be ready for use at any moment. 2. Treatises with information regarding the machinery for matches, etc.? A. There is "A Practical Treatise on the Fabrication of Matches, Gun Cotton, etc.," by H. Dussauce, costing \$3.00. There is also an excellent article on the manufacture of matches contained in the recent Encyclopedia of Industrial Arts, two numbers, 75 cents each. 3. I am perfectly deficient in the sense of smelling. Is this a natural defect or arising from some disorder in the system? Will you kindly propose any remedy for the cure? A. This is a question for a physician to decide. The nerves of smell are deadened according to your statement, but whether they are destroyed we cannot venture to express an opinion.

(3) G. H. F. writes: 1. What is the method of refining kerosene oil? A. The different grades are separated by distillation, the lighter products coming over first, while the heavier ones come over later on, leaving a residue of coke in the retort. 2. How may any one test a sample of oil? I have tested by gently heating a quantity in a cup and watching the temperature as shown by thermometer with bulb immersed, applying a match to see at what temperature it would take fire. A. The method adopted by you is the process generally employed for testing kerosene, and is what is known as the flashing test. The degree at which the oil burns is known as the burning test. In Massachusetts there are specially appointed inspectors who examine the oil used for illuminating purposes. The Massachusetts law of 1869 fixes the flashing point of safe oil at 100° F., and igniting point at 110° F.

(4) J. M.—Wood engravings are made by first coating the wood with a white wash, and then drawing in freehand with pencil or brush directly on the wood the design which is wanted. The block is then cut an electrotype is made, from which the printing is made.—Lithography is described in answer to query 13, SCIENTIFIC AMERICAN for May 9, 1885.—Photo-engraving processes are numerous, and most of the best ones are described in the various issues of the SCIENTIFIC AMERICAN SUPPLEMENT. See catalogue of subjects.

(5) C. G.—Both zinc sulphate and iron sulphate are soluble in water. A saturated solution is one in which it is impossible to dissolve any more of the sulphate. In other words, use as little water as possible in making your solution.

(6) A. S. desires to know the method of preparing an insoluble cement from bichromate of potash and glue. A. In order to render glue insoluble in water, even hot water, it is only necessary, when dissolving the glue for use to add a little potassium bi-

chromate to the water and expose the glued part to the light. The proportion of bichromate will vary with circumstances; but for most purposes, about one-fiftieth of the amount of glue will suffice.

(7) E. B. writes: I am getting up a collection of different kinds of wood with the bark on. Can you tell me of any receipt to keep it in good condition, and also keep worms and bugs from destroying both wood and bark? A. As you say you do not wish to use varnish or shellac, which is usually employed, dipping the wood in a solution of corrosive sublimate would probably be best, as it is an excellent antiseptic and on account of its poisonous qualities. Solutions of chloride of zinc can likewise be used. Camphor and like substances protect by driving insects away, but they are of doubtful utility.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted,

July 21, 1885,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions such as Aerated beverages, Apparatus for filling and siruping, Agricultural machines, Air motor, Airtight vessels, Ammoniacal gas, Animal trap, Automatic sprinkler, Bags, etc., holder for, Bale tie, Baling press, Bark press, Barrel, keg, or similar article, Bed bottom, Bed pan, Bed, sofa, Bed, wardrobe, Bedstead, Beer into siphons, Beer into siphons, etc., preventing frothing when filling, Beer kegs, Bell circuits, Bench clamp, Berth, ship's, Billiard table, Blind, Venetian, Block and switch signal, Board, Boiler, Bolt lock, Book finishing machine, Boot or shoe, Bosom board, Bosom tab folding machine, Bottle stopper, Bottles, cleaning, Bottling machine, Box fastening, Brake, Bran duster, Breastpin, Brick moulds, Bricks, appliance for laying, Bricks, building blocks, Bridge, draw, Bridge, draw, W. D. Bullock, Bridge, draw, J. Groves, Buckle, back band, Buggy boot, Bung and faucet for ale and beer barrels, Burial case, Burial caskets, Burner, Bustle, Button attaching instrument, Button fastener setting instrument, Cable, elastic tubular, Cable roads, Calcinine compound, Can, Candlestick, Car brake, Car brake, Car brake, Car brake, Car brake, Car coupling, Car coupling, Car coupling, Car coupling, Car step, Car wheel and axle, Car wheels, Cars, head rest for railway, Carbonaceous antiseptic dressing, Carpet stretcher and tack driver combined, Crockett, Carriage brake, Carriage seat, Carrier, Cartridge shell, Case, Caster, Ceiling, fireproof, Centrifugal machine, Chain, drive, Chain, drive, Chain, drive, Chair, See Sewing chair, Check for horses, driving, Child's chair, Chuck, drill, Chuck, lathe, Churn, C. Hanna, Churn, J. G. Harris, Churn, J. C. Moody, Churn, K. A. Rodger, Circuit breaker, sparkless, Clamp, See Bench clamp, Car brake clamp, Skate clamp, Clasp, See Shoe clasp, Cleaner, Clipping horses, etc., machine for, Clutch or loose pulley device, Clock and indicator, combined gauge, Coffee roaster and cleaner, Coffin, Coil, neutralizing, Collar fastener, Collar or cuff, C. H. Denison, Collar or cuff, E. Kipper, Condenser, J. Klingel, Cooker, steam, D. M. Armstrong, Cooking utensil, Cooling and refrigerating apparatus, Corn sheller, Corn sheller, E. C. Fisher, Corset, M. P. Bray, Corset, J. M. St. Claire, Coupling, Shaft coupling, Spring coupling, Thill coupling, Cradle, grain, Cultivator plant shield, Cultivator running gear, Cut-off valve, Cutter, Damper, automatic, Damper for shafts, Derrick, D. Sharp, Ditching machine, P. Ahnlund, Ditching machine, Titus & Morral, Door check, J. H. Shaw, Door check, T. G. Williamson, Door check, pneumatic, G. Vincent, Door hanger, S. Shreffler, Jr., Door opener, electric, T. A. Casey, Door spring, J. H. Shaw, Draught equalizer, A. Sellers, Draught regulator, automatic, M. H. Smith, Drill, See Grain drill, Rock drill, Drum, heating, J. P. Lydon, Egg packer, H. Handy, Electric indicating apparatus, Electric lights, holder for incandescent, Electric switch, E. B. Nicolaus, Electric switch, F. Schaefer, Electric signal apparatus, Electrical synchronous movements, effecting, P. B. Delany, Electrically maintaining synchronous movements, P. B. Delany, Elevators, automatic safety guard for, F. P. Hinds, Embalming device, J. Jackson, Embalming table, adjustable, G. P. Gaston, Embroidering machine, J. Sobotka, Embroidering machines, device for securing the needles in, W. H. Farmer, Embroidery, imitation bead, E. Cornely, End gate, wagon, S. G. Travis, Engine, See Gas engine, Pumping engine, Wind engine, Excavating machine, Scherff & Wolf, Expansion joint, P. Koch, Eyeglass, J. J. Bausch, Eyeglasses, A. C. Lord, Fabrics, machine for forming raised ornaments by threads on, R. Guerrand, Fan attachment, C. E. Eaton, Feed water purifier and heater, J. P. Warner, Fence machine, G. W. Homsher, Fence machine, wire, S. Watson, File, paper, R. H. Welch, Filter, hydrant, G. W. Shawk, Finger ring, adjustable, F. N. Foster, Firearm, breech-loading, W. S. Teall, Fire escape, G. W. Kern, Fire escape, portable, W. H. Bechtel, Fire extinguisher, chemical, J. A. De Mauler, Fire extinguisher, hand, G. I. Chapin, Fire extinguisher holder, E. C. Nelson, Fireplace, hot air, D. Pearson, Fishing rods, joint ferrule for, W. H. Reed, Floor cloth, waterproof cloth, etc., figured fabric or material for, Hebblewhite & Holt, Flouring mill rolls, adjusting device for, I. H. Eisenberg, Folding machine, J. G. Northrup, Foot rest, J. S. Clark, Furnace, See Roasting furnace, Furnace door arch, R. R. Zell, Gauge, See Saw table gauge, Garment and carrying device attached thereto, Myers & Rogers, Gas engine, J. F. Piacé, Gas engine, C. Shelburne, Gas, etc., heating burner for, H. B. Chess, Gas, method of and apparatus for generating, Isbell & Taylor, Gas regulator, T. Angell, Gate, See End gate, Hatch gate, Water gate, Gate, Carpenter & Dudley, Gate, W. A. Preston, Gate hanger, J. S. Pringle, Gear, reversing, H. D. Coleman, Gear wheel, J. C. Wilson, Sr., Gearing for reverse shafts, W. F. Cowden, Glass surfaces and signs, decoration of silvered, R. Stern, Governor, steam engine, J. Kelly, Grain and seed separators, recleaner for, A. Miller, Grain binder, J. E. Giles, Grain binder, C. M. Young, Grain drill, H. R. Wolfe, Grain separator, I. Hess, Gridiron, C. M. Cooke, Grinding mill, A. L. & W. T. Anderson, Guard, See Railway switch safety guard, Gusset, armhole, W. Sachs, Hanger, See Gate hanger, Harmonica holder, W. H. Dawley, Harrow, F. A. Johnson, Harvesting machine, corn, Lewis & Allen, Hatch gate, elevator, C. T. Schulze, Hay and straw burner, H. W. McClure, Hay gatherer, J. H. Posge, Hay loader, J. H. Lux et al.

Table listing inventions such as Hay loading and unloading apparatus, Heel blanks, Heel machine, Heel nailing machine, Hoist, miner's, Holder, Holder for legal blanks, Hook, A. B. Robinson, Hoopskirt, Horseshoe, C. Sheather, Horseshoe, W. Somerville, Sr., Horseshoe, expanding, C. C. Allen, Horseshoe nail, J. C. Kearns, Horseshoe pad, M. S. Starkweather, Hub, vehicle, P. P. Smith, Hub, vehicle, F. W. Starr, Hydraulic testing machine, U. Cummings, Hydrocarbon burner, H. A. Bradley, Ice machine, A. R. Kenney, Ice machine, J. M. W. Neff, Indicator, See Time and interest indicator, Valve indicator, Induction disturbances, apparatus for suppressing, Jackson & Chambers, Induction, neutralizing, Jackson & Chambers, Induction neutralizing coil, Jackson & Chambers, Induction, suppressing, Jackson & Chambers, Injector and injector nozzle, O. Westphal, Insecticide, A. Muller, Iron and steel, compound for purifying, W. H. Purdy, Iron and steel, compound for purifying, W. H. Purdy, Iron, utilizing the waste cuttings of tinned, J. H. Kolb, Joint, See Expansion joint, Rail joint, Toggle joint, Kerite compounds, manufacturing of crude, A. G. Day, "Kerite," making the compound termed, A. G. Day, "Kerite," vulcanized product termed, A. G. Day, Knife, See Oilcloth knife, Knitting machine needle, G. E. Jones, Ladder, extensible, T. R. Park, Ladder, folding, T. S. Diston, Ladder, step, C. E. Bronson, Lamp and holder, sealing wax, Hoyt & Nichols, Lamp burner, H. W. Hayden, Lamp burner, H. D. Place, Lamp extinguisher, automatic, W. S. Burgess, Lamp, incandescent electric, P. K. Stern, Lamp, miner's safety, Wolf & Friemann, Lamp, multiple incandescent electric, W. Stanley, Lamps, apparatus for suspending arc, J. Young, Lantern, E. K. Haynes, Latch, gate, S. B. Elzey, Laundry reel, B. R. Hawley, Lead, apparatus for the manufacture of white, H. G. Blyth, Leather blacking machine, J. Hodkinson, Leather, glazed kid, T. R. Clark, Lifter, See Stove lifter, Lock, See Bolt lock, Mortise lock, Seal lock, Lubricator, P. Barclay, Mail crane, J. H. Harden, Match boxes, machine for making, Newton & Beecher, Match splint machine, Flewelling & Harris, Mattress machine, Mears & Jennings, Metal working machine, compound, E. A. Oliver, Meter, See Oscillating meter, Mill, See Grinding mill, Windmill, Mortise lock, L. Tighe, Motion, device for converting, R. Campbell, Motion, device for converting, T. C. Fleming, Motor, See Air motor, Sewing machine or other motor, Water motor, Motor, Cloud & Vogt, Musical instrument, mechanical, R. W. Pain, Musical instrument, mechanical, L. T. Stanley, Nail, See Horseshoe nail, Nail machine, M. B. Brown, Neck and ear protector, combined, I. B. Kleinert, Nipple protector, C. Ware, Nut, cap headed screw, C. D. Thatcher, Nut lock, F. L. Miller, Nut lock, D. S. Troy, Oil and water, separator for mingled, H. H. Garrett, Oil cabinet, H. Kroemmelbein, Oil can, H. B. Hart, Oil can, A. Tufts, Oilcloth knife, A. S. Seaman, Oil previously used in mechanical operations, process of and apparatus for reclaiming, Cromwell & Coy, Oiler, car axle, Meneely & Gibbons, Ore feeder, J. Hendy, Organ reed, A. Newell, Organ stop-action, reed, J. A. Warren, Oscillating meter, E. Tatham, Oyster dredge, E. Watts, Pad, See Horseshoe pad, Paint, mixed, W. H. Van Keuren, Pan, See Bed pan, Paper and other fibrous material for journal bearings, beltings, etc., treatment of, H. W. Morrow, Paper pulp, treating vegetable substances for making, Young & Pettigrew, Paper stock, apparatus for bleaching, A. W. Wilson, Parcel transmitter for stores, D. M. Skinner, Pencil compass attachment, C. W. Stewart, Pin, See Breastpin, Pipe coupling, R. C. Nugent, Pipes, machine for forming flanges upon soft, M. Chase, Plating machine, bosom, G. W. Pine, Planing and finishing thin pieces of wood, machine for, Ford & Moore, Planter, A. & J. Y. Savage, Planter, cotton and corn, K. P. Alston, Jr., Planter, seed, A. E. Choate, Planter, seed, J. Friday, Plastering composition, J. W. Rees, Plow, C. Atkinson, Plow and seeder, combined, A. Glenn, Plow attachment, O. R. & G. B. Hanchett, Plow attachment, S. B. Williams, Plow beams, machine for finishing, W. C. Marge-dant, Plow, gang, J. Ingham, Plow harrow attachment, G. W. Spencer, Plow, sulky, W. S. Pates, Pool ball rack and spotter, G. Henkel, Potato vines with a poisonous solution, machine for sprinkling, A. O. Packard.