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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 This is for our information, and not for publication.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) D. D.—The recovery of tin from tin scrap is practiced by several chemical manufacturers in and around New York, but not in the metallic state. The tin may be burned and thoroughly oxidized by fire with a free circulation of air. Then treat the oxides with sulphuric acid, which unites with the iron, forming sulphate of iron, which may be decanted and crystallized and converted into rouge, or the red oxide of iron, while the remaining tin sediment may be further oxidized and made into polishing powder, or, as by some chemists, made into sulphomuriate of tin, as used by dyers. It requires some chemical knowledge to carry

on the recovery of tin scrap to profit, as well as an abundance of scrap.

(2) W. P. M.—Galvanized iron chain pumps do not affect the water perceptibly for drinking or cooking purposes. They are largely used in wells and cisterns.

(3) J. I. V. D. asks the formula and apparatus necessary for etching pocket cutlery. A. Write with a chloride of gold solution. 2. A brown ink for writing on polished steel. A. We would suggest the following as giving you a colored ink: sulphate of copper 1 ounce, sal ammoniac 1/2 ounce, pulverize separately, adding a little vermilion to color it, and mix with 1 1/2 ounces vinegar. Rub the steel with soft soap, and write with a clean hard pen without a slit, dipping in the mixture. To produce a bronze color, it would be necessary to first use a black ink, and subsequently coat with bronze powder.

(4) B. P. T. asks: 1. What material is used to bleach skeletons? A. See "Preparation of Skeletons for Museum Purposes" in SCIENTIFIC AMERICAN SUPPLEMENT, No. 106. 2. What are the "green soaps" made of which are used in skin diseases, and who manufacture them? A. Green soaps are prepared from potassa and fixed oils. They are officinal, and therefore can be procured from any druggist. 3. What is the mucilage used on the back of postage stamps made of? A. Gum dextrine 2 parts, acetic acid 1 part, water 5 parts. Dissolve in a water bath, and add alcohol 1 part.

(5) C. P. asks what is the commercial hydrocarbon gas black, and how is it made? A. The preparation of gas black is probably similar to that of lamp black, and is therefore produced by burning ordinary illuminating gas in a supply of air which will be insufficient to completely oxidize it. The black fumes arising from this combustion deposit the carbon on cloths or, in some instances, on metallic plates suspended in order to receive it. Gas carbon, which is possibly what you refer to, may be obtained by passing olefant gas through a red hot porcelain tube.

(6) H. R. H. asks (1) for a practical recipe for the generation of oxygen gas, for the purpose of inhalation. A. See "How to Make Oxygen," in SCIENTIFIC AMERICAN SUPPLEMENT, No. 313. 2. What effect would the inhalation of sulphur fumes have on the system? A. The inhalation of sulphur has been recommended for the curing of contagious throat diseases, such as diphtheria, etc. The fumes are suffocating, and care must be taken in their inhalation.

(7) E. H. F.—Tonics or washes to make the hair grow can always be employed with greater or less success so long as there is any vitality left in the hair roots. If, however, these are destroyed or entirely dead, there is no possibility of producing a new growth of hair. The following is a well known tonic: Scald black tea 2 ounces with 1 gallon of boiling water, strain, and add 3 ounces glycerine, tincture cantharides 1/2 ounce, bay rum 1 quart. Mix well, and perfume.

(8) J. W. E. A. asks whether an analysis has ever been made of any of the petrifying lakes or wells in Europe or elsewhere, with a view to discover the petrifying properties of the water, and, if so, what was the result? A. Calcium carbonate, which is insoluble in pure water, but soluble in water containing carbonic acid, is frequently found in springs of carbonated waters which pass through limestone. Objects placed in such waters are coated with a deposition of the carbonate of lime. Travertine is the name given to such formations. Silica is likewise dissolved by certain mineral waters, and the deposits obtained by the evaporation of such waters are known as silicious sinter. Works on geology fully describe the process. 2. What chemical or combination of chemicals, apart from those ordinarily used in refrigeration, will freeze liquids? A. For this information, see table given in answer to query 4, in SCIENTIFIC AMERICAN for June 21, 1884.

(9) T. F. W. asks what to put with pure white paraffine wax to make it pliable long enough when dipped in water to make imitation of roses. A. Use pure beeswax (white), and mix with paraffin.

(10) W. A. W. writes: Suppose two boilers 200 feet apart are connected by a 2 inch pipe, fire beneath one only, and gauge shows 150 pounds pressure. Would a gauge on the other boiler indicate same or less pressure, and if less, about what per cent? And would size of pipe or distance of boiler cut any figure? A witness in court testified pressure would be materially less in the distant boiler, owing to condensation, but I would prefer to have you say whether he is correct before I can believe so. A. The gauge on the farther boiler would indicate at first considerably less pressure, until the boiler and pipe had become heated by the condensing steam, when the gauges would indicate less difference, but the pressures would never be quite equal. A great deal depends upon the amount of surface exposed in pipe and boiler, and the outside temperature, in determining the per cent difference. The witness was correct.

(11) G. F. F. asks how to mix South Carolina rock (finely ground) with sulphuric acid so as to analyze 14 to 15 1/2 per cent of available phosphoric acid; what quantity of each to use. A. Take 1,000 tons or parts of the rock and 1,000 tons of sulphuric acid. 2. What grade of sulphuric acid? A. Sulphuric acid of 50° Baume. 3. Is there any artificial way of drying the mixture? A. It is not necessary to dry it. 4. Is South Carolina rock phos. as high in phosphoric acid when just mixed as it will be after lying a month, or does age improve it? A. The phosphoric acid reverts if allowed to rest for any length of time.

(12) L. H. M.—For information on lubricants, see SCIENTIFIC AMERICAN SUPPLEMENT, No. 316. For axle grease: Dissolve 1/2 pound common soda in 1 gallon water, add 3 pounds tallow and 6 pounds palm oil (or 10 pounds palm only). Heat them together to 200° or 210° Fah., mix, and keep the mixture constantly stirred till the composition is cooled down to 60° or 70°.

(13) D. D. L. desires a formula for making a good applicant (resin or rosin) for the bow of a

double bass, something with lots of "hold fast" in it. The objection* to most which is kept for sale in music houses is its tendency to prevent vibration rather than increase it. A. If the resin is too sticky, as we infer from your communication, the best thing to do is to re-boil it, when it will be found more satisfactory. If too hard, keep it in a warm room for several days.

(14) L. L. asks for formulas for making ordinary blue prints. A. See SCIENTIFIC AMERICAN of October 31, 1885, Photographic Notes, page 276.

(15) S. desires a recipe for cleaning micas in stoves. A. It is not possible to perfectly restore the micas after they have once been burned. Rubbing with a little alcohol and water may improve them slightly.

(16) J. G. H. asks the best means of precipitating lead in solution in strong water of ammonia without injuring the water of ammonia. A. Metallic zinc has the property of reducing lead to its metallic state when in solution. This method does not always give satisfaction. For the complete separation of the lead, it is best to treat the solution with the gas of hydrogen sulphide. See Fresenius' Qualitative Analysis.

(17) Machinist asks for a recipe to renew an old rubber coat or gossamer. A. Brush over with a solution of 1/2 ounce of pure rubber dissolved in 1 pint of carbon disulphide. By proper treatment and a series of coats a deposition of rubber on the fabric will be obtained. See "Rubber Waterproof Goods," in SCIENTIFIC AMERICAN SUPPLEMENT, No. 251.

(18) W. W. K.—Alcohol contains 91 per cent ethyl alcohol by weight, and has a specific gravity of 0.820 at 60° Fah. Proof spirit contains 49.24 per cent alcohol and 50.76 per cent water, and it has a gravity of 0.919 at 60° Fah. In other words, it is 50 per cent alcohol. Salep is the name given to dried timbers of numerous species of the genus Orchis, and in India of the genus Eulophia. Leading druggists can obtain it for you.

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

A. C. V.—The specimen is a white clay or kaolinite. It is valuable in the manufacture of pottery. It is found in various sections of the country. We would advise you to send it to some maker of pottery in your vicinity, in order that its burning qualities may be tested.—J. M.—The reddish specimen is a variety of clay, and from a superficial examination we think it has the properties of a fire clay. It would be necessary to test its burning qualities in order to positively determine this fact. The powder sent is likewise a clay containing iron and probably manganese. It does not seem to be of any value. C. H. C.—The specimen sent is a bit of manufactured wire, and is probably a piece of the drill which in some way has been broken off at the end.—W. A.—The powder is simply a clay ighly colored with metallic oxides, probably iron.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted, November 10, 1885,

AND EACH BEARING THAT DATE.

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

Table listing inventions with names and dates. Includes items like Air brake valve, Alarm, Alloy, Ammonium chloride, Arm and hand, Artificial Beacock, Asbestos, Ash or garbage receptacle, Asphaltic cement, Asphaltic mastic, Automatic sprinkler, Axle lubricator, Band or cord, Basin or tub, Basin, set, Bed bottom, Bed bottom, spring, Bed bottom, spring, S. S. Burr, Bed bottom, spring, E. E. McIntyre, Bed, folding, Beehive, Belt, bodice, Belt, safety, Bicycle, Blacking box, Blind, shutter, or door stop, Blind, window, Board, See Laying-out and embalming board, Boiler, See Magazine boiler, Marine boiler, Steam boiler, Tubular boiler, Boiler furnace, J. Maller, Boiler furnace, steam, S. T. Owens, Boiler, connecting box for water tube, W. Kent, Boilers, making connecting boxes for, W. Kent, Bolt fastener, E. G. Holden, Bookbinding machine, Durkee & Campbell, Boot or shoe, M. Walker, Boot or shoe heels, cutter head for trimming, B. Gallagher, Boot or shoe insole, C. F. Bosworth, Boots or shoes, metallic sole for, W. T. Milholland, Bottle and can washer, H. Koethe, Bottle stopper, A. Luedemann, Bottling machine, H. C. Walter, Box, See Blacking box, Box, E. Andrews, Brace, See Rail brace, Brake, See Marine brake, Velocipede brake, Brewing beer, C. Zimmer, Brick machine, S. Daly, Bricks, etc., machine for moulding plastic materials into, Brightmore & Dixon, Brush and scraper, combined blacking, C. E. Hatch, Brush, clothes, J. Stehlin, Brush handle, C. Donaghy, Buckle, M. L. Hall,

Table listing inventions with names and dates. Includes items like Buckle, suspender, J. R. Pollock, Buckle, trace, E. G. Latta, Buffer, R. P. Garsed, Bull tamer, J. C. Poor, Burner, See Petroleum burner, Butter package, B. Wood, Button fastener rod, F. H. Richards, Cable armoring machine, W. R. Patterson, Cable grip attachment, traction, Snelson & Judge, Calendar, B. R. Jolly, Calendar, T. McCarthy, Cam, H. P. Humphrey, Candles, apparatus for shaping and finishing, A. F. Baumer, Cane top and leaf cutter, sugar, E. Lobeck, Car and scow, dumping, W. Fallon, Car brakes, slack adjuster for, D. McLeod, Car coupling, J. R. Avery, Car coupling, W. F. Hill, Car coupling, L. D. Hoover, Car coupling, M. Spelman, Car coupling, W. Wilson, Car coupling pins, machine for making, M. Collins, Car platform, freight, A. C. Ferguson, Car replacer, J. E. Norwood, Cars and vehicles, motor for propelling, L. C. Pressley, Cars, escape hatch for railway, McIntyre & Loring, Cars, grip attachment for cable motor, T. Wright, Card, show, D. M. McLellan, Carpet cleaning machine, Gessler & McAfee, Carriage, child's, I. N. Forrester, Carrier, See Hay carrier, Cart, coal, T. Finnerty, Cartridges, making lubricating, W. J. Faul, Casting mold, S. N. Goodman, Castings, apparatus for forming cores or moulds for, R. Savage, Centrifugal machine, Nielsen & Pedersen, Chain, drive, J. M. Dodge, Chain, metal, F. Egge, Chair, See Folding chair, Reclining chair, Steamer, lawn, and invalid chair, Chair, L. A. Chichester, Chalk unbreakable, rendering billiard and writing, A. Hamann, Chimney top, I. Barker, Chopper, See Cotton chopper, Chuck, planer, T. H. Paul, Churn, F. P. Malott, Circuit closer, automatic, P. C. F. McCambridge, Clamp, See Hitching strap clamp, Printer's gauge clamp, Skate clamp, Cleaner, See Skate cleaner, Clothes drier, D. P. Sharp, Condenser, steam jet, L. Schutte, Cordage, manufacturing, J. Good, Core making machine, R. Savage, Corkscrew, M. A. Wier, Corset fastening, M. Hertz, Corset fastening, A. Rammoser, Cotton chopper and cultivator, T. B. Goldsmith, Coupling, See Car coupling, Pipe coupling, Cuff holder, Atkin & Steele, Cultivator, A. Cox, Cultivator, L. E. Chapin, Cultivator, J. M. W. Long, Cultivator, Monroe & Wiggins, Cultivator for listed corn, McCandless & King, Cultivator, wheel, E. P. Lynch, Cut-off gear for steam engines, J. Young, Cutter, See Pipe cutter, Vegetable cutter, Cutter head, E. K. Patten, Cutting bifurcated garments, J. C. Tracey, Damper regulator, automatic, R. Beachman, Dental appliance for mixing amalgam, D. Genese, Desk, J. F. Appell, Detector, See Time detector, Dish, butter, S. W. Babbitt, Ditching machine, J. W. Humphreys, Door check, A. Maurer, Door hanger, A. J. Bates, Door lock, sliding, Hayden & Dixon, Door roller, sliding, N. Lucas, Door, sliding, W. S. Brickell, Drawers support, T. E. Scott, Drier, L. Hagen, Drill, See Ratchet drill, Drills, scraper for wheels of wheat, H. Thoman, Dyeing, composition of matter to be used in, Waldstein & Muller, Electric cables, testing, W. R. Patterson, Electric light regulator, P. Lange, Electric machine, dynamo, E. P. Clark, Electric machine regulator, dynamo, C. E. Scribner, Electric wires, underground conduit for, T. D. Williams, Electrical conductor, A. C. Tichenor, Electrical conductor conduit, Caples & Lewis, Electrical wires, supporting, J. W. Tringham, Electrode for electrolytical purposes, carbon, H. Leipmann, Elevator, See Hay elevator, Engine, See Gas engine, Rotary engine, Rotary steam engine, Steam engine, Wind engine, Envelope or protector for cards, J. Markinsky, Exhaust muffler, C. L. Kidder, Eyeglasses, H. Borsch, Fabric turning implement, J. J. Deal, Fence, E. R. Michaelis, Fertilizer, A. E. Wemple, Fertilizer distributor, J. Kittle, Filtering apparatus, W. Oldham, Firearm, breech-loading, S. A. Sullenberger, Fire escape, J. Flietner, Flag, J. M. Ebersole, Flanging machine, R. Munroe, Flax, tank for curing, I. T. Quinn, Flush tank, automatic, A. Rosewater, Folding chair, E. L. Gaylord, Folding chair, Hall & Tripp, Foot rest, adjustable, O. M. Moore, Forging machine, radial, J. C. Richardson, Frame, See Net frame, Fuel, composition, L. Cline, Furnace, See Boiler furnace, Glass furnace, Glass flattening furnace, Tinner's portable furnace, Furnace, E. Boileau, Furnace for melting glass, etc., Pearson & Kitson, Furnaces, junction or separator lining for open-hearth, Murister & Gilchrist, Gauge, See Railway track gauge, Gauge and center square, combined, J. C. Eckert, Gas apparatus, R. H. Smith, Gas, apparatus for making illuminating, C. W. Isbell, Gas distribution, R. H. Smith, Gas engine, W. A. Graham,