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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.

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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) H. W. writes: I have some gutta percha chips; how can I soften them and then make them hard again, like gutta percha buttons? A. Soak the fragments in hot water. It will quickly soften them, and they will become hard on cooling.

(2) J. R. H.—The ordinary solid bluing consists of indigo and starch, or of artificial ultramarine. To make liquid bluing the following is a good receipt: Powder one ounce Prussian blue very fine, add it to one quart of very pure water, to which add one-fourth of an ounce of oxalic acid. This is very powerful. The oxalic acid is poison.

(3) O. T. asks: Can you give me a formula or two for brilliant, quick drying furniture polish? A. The following will dry in a moderate time: 4 ounces shellac is dissolved in 2 pints strong alcohol; to this is added 4 pints linseed oil and 1 pint spirits of turpentine. When mixed, add 4 ounces camphor ether and 8 ounces ammonia water. Apply with a sponge. For French polishing, shellac varnishes are often used. The following is good: Shellac 2 pounds, mastic and sandarach, of each 1 ounce, copal varnish 12 ounces. Alcohol 1 gallon. Make in the cold in a stoppered can or demijohn, and do not filter. This is for use in French polishing, which involves rubbing in with a rubber.

(4) W. L. T. asks for a receipt for gilding and silvering on wood. A. The wood must be coated with size. To make this boil half a pound parchment shavings with three quarts of water, constantly stirring. This gives a clear solution of gelatine, which must be passed through a sieve. Paint over the wood with this, and while it is still moist apply gold or silver leaf or Dutch metal. Much manual skill is necessary, and you should see the exact details practiced by a gilder. You may also gild wood by mixing bronze powder with copal varnish and painting it with the mixture. Finally, gold paint may be bought all ready for use and this will probably give you the most satisfaction.

(5) E. G. H.—To prevent the rotting of seines, we would suggest the use of raw linseed oil, applied to the seine while it was perfectly dry.

(6) A. R. J. writes: How can I remove the gold gilt and name from the cover of a book that is pressed in one-sixteenth of an inch? Can the indentation be entirely taken out? Also, is there any preparation to renew the muslin or leather covers of old books? Also can the stains of dampness, mould, or other discolorations be removed from the cover and leaves? A. The impressions on the outside of the book cannot be removed. It would also be very difficult or impossible to remove the discolorations you speak of.

(7) D. J. P. asks: 1. Is there any solvent of coal tar other than heat or "dead oil"? A. Turpentine, naphtha, kerosene, benzine, and many other similar liquids will dissolve coal tar. 2. How may the odor of coal tar be destroyed or disguised? A. It is extremely hard to remove or disguise its odor, as we have found by experience.

(8) T. F. asks (1) what two colorless or nearly colorless liquids when mixed will become black. A. Mix a dilute solution of copperas with an infusion of nut galls. 2. What colorless or nearly colorless vegetable or mineral solution will become dark by contact with a metallic solid, and what metal will effect the change? A. Mix a dilute solution of nickel sulphate with a very little hydrochloric acid and add sulphide of ammonium. A piece of metallic zinc will neutralize the acid and cause a black precipitate of sulphide of nickel which will color the solution before settling out of it.

(9) E. C. S. writes: 1. I have a lot of surgeon's isinglass adhesive plaster which is not very proof against water or moisture. What should I apply

to the silk side to render it entirely waterproof, so it won't wash off when slightly wet? A. After applying it give it a coat of shellac dissolved in alcohol, or coat it and the skin surrounding it with collodion. 2. What is the liquid used on muslin drilling, or cotton duck to make it waterproof, and fit for coats, horse and wagon covers, etc.? It gives the material a slightly yellowish tint. A. Linseed oil.

(10) H. C. W. writes: 1. Please give us in "Notes and Queries" the formula for a good liquid shoe dressing; one that will not injure the leather and which will give a luster without rubbing, and which will also answer for harness? A. Many receipts are given. We give the following, as it contains no oil of vitriol, and can be tried cheaply. Ivory black, 1 pound; molasses, 3/4 pound; sweet oil, 2 ounces. Mix well and rub together, then add beer, 1 pint, vinegar, 1 pint. Also see SCIENTIFIC AMERICAN, Vol. 48, No. 10. 2. Can you also give the formula for Day's liquid blacking, an English preparation? A. The formula for Day & Martin's English blacking is thus given: Fine bone black is mixed with sperm oil until a thorough mixture is effected. Sugar and molasses is mixed with a little vinegar, and added to the mass. Oil of vitriol is next added, and when effervescence has ceased vinegar is poured in until a proper consistence is attained. The quantities are not given; they probably run about as follows: Bone black, 1 pound; sperm oil, 1/4 pound, or enough to mix; molasses, 1 pound; oil of vitriol, 1/2 pound; vinegar enough to secure proper consistency.

(11) C. F. S. asks: Is there any way we can keep glue from getting thick after reducing down very thin? What can we put in it to destroy the offensive odor while cooking? A. Add acetic acid to the glue. This will keep it liquid and tend to overcome the odor. Try also muriatic acid or acetate of lead; both are good.

(12) E. Bros. ask if this is intended to make a first class mucilage for gumming large sheets of paper which may be kept for use without curling, and stick well on glass or other substances when wet, viz., paste or glue for paper labels:

- Starch.....2 drachms.
White sugar.....1 ounce.
Gum arabic.....2 drachms.
Water.....q. s.

Dissolve the gum, add the sugar, and boil until the starch is cooked. A. This seems to be a good paste. Try the following, said to be that used on postage stamps: Gum dextrine, 2 parts; acetic acid, 1 part; Water, 5 parts. Dissolve in a water bath and add alcohol, 1 part.

(13) J. W. R. asks how to make green japan for tin, such as is used on toy caps, bird cages, etc. Say what ingredients to use, and how to mix? A. Color the japan green by adding a mixture of King's yellow (or other good yellow) and Prussian blue; also try aniline greens.

(14) F. W. writes: 1. Will you please answer the following questions, and oblige: At what degree of heat will platinum melt? A. 4,590 Fahr. 2. Has it a clear ring like silver? A. It is not nearly so sonorous as silver. 3. What is its worth per pound? A. About \$155.00.

(15) L. R. G. writes: I forward you with this a sample of white quartz sand from a deposit in this State. Would you inform me whether the sample is of a kind suitable for fine glass manufacture, and also if it is likely that the sand would find a market as a commercial article if suitably prepared? Would you also acquaint me through the SCIENTIFIC AMERICAN what are the requirements of manufacturers in their choice of sand for different classes of articles, and wherethe most suitable are found in this country? A. The value of sand for manufacturers in general consists especially in its freedom from iron. The sample you send seems very pure and well adapted for glassmaking. Correspond with some of the large glass factories, and send them samples if they ask for them.

(16) G. W. H. writes: Will you please inform me in your answers to correspondents how steel plate engravings can be transferred to vases and other articles for ornament. Some method by which the ink can be softened and transferred to any kind of hard surface? A. Varnish the surface to which the engraving is to be transferred with copal or dammar varnish. After it has dried for six hours and is still sticky, wet or soak (if necessary) the engraving, using soft water for the purpose. Then press the engraving well upon the varnished surface, carefully avoiding the formation of bubbles. Let the whole dry perfectly (which will take a day more). Then with a wet sponge and the fingers and soft rubber wash off the paper in pieces, and the lines of the engraving will be left upon the glass or porcelain surface. This must then be revarnished.

(17) A. A. R. asks: Can you give a process whereby empty ink bottles can be sufficiently cleaned, so that they may be used without injury to health in bottling and preserving catsup, table sauce, etc.? A. Muriatic acid followed by water will answer we think, it depends on what kind of ink the bottles held.

(18) A. G. asks: Are the colors used in making pastel pictures durable, or will they fade after a time? A. Most of the colors are very permanent.

INDEX OF INVENTIONS For which Letters Patent of the United States were Granted September 25, 1883.

AND EACH BEARING THAT DATE. [See note at end of list about copies of these patents.]

Table listing inventions such as Abrading cylinder, Adjustable chair or seat, Agricultural boiler, Air compressor, etc.

Table listing inventions such as Animal trap, Annealing furnace, Auger, J. Swan, Axle, car, A. T. Peirce, Bag holder, A. Sherman, Bale tie, cotton, W. L. Jones, Baling press, T. G. Holloway, Bar, See Draught bar, Railway splice bar, Vehicle spring center bar, Basin, enameled iron wash, Milligan & Chaumont, Bath tub attachment, G. P. Bassett, Battery, See Secondary battery, Belt fastener, J. Bachmann, Beltshifter, W. R. Santley, Berths, swinging arm for securing folding steps to movable, Castle & Skaats, Bicycles, backbone coupling for, R. C. Scherling, Billiard table leveler, T. Eubank, Bit, See Brialte bit, Block, See Paving block, Board, See Plow mould board, Boiler, See Agricultural boiler, Boiler feeder, E. Del Valle, Bolt, See Flour bolt, Flour and meal bolt, Bolt pointing machine, W. B. Edwards, Book, memorandum, E. A. Hemphill, Boring rocks under water, apparatus for, Jones & Wild, Bottle lock, G. E. Brundage, Bottle stopper, C. G. Hutchinson, Bottling machine, J. Bryan, Box, See Check box, Fare box, Miter box, Paper box, Box nailing machine, W. H. Brock, Brake, See Car brake, Elevator safety brake, Wagon brake, Breeching loop and holdback ring, T. H. Joyce, Brialte bit, O. Wiener et al, Buckle, harness, S. S. Sargeant, Bung extractor, B. Notting, Burner, See Gas lighting burner, Caliper gauge, E. Sauter, Can, See Oil can, Cane and fan combined, W. Verbeck, Car brake, J. C. Patterson, Car coupling, A. C. Ellis, Car coupling, C. L. Hathaway, Car coupling, I. Kling, Car coupling, Leonard & Snow, Car coupling, T. D. Lobb, Car coupling, J. F. Rice, Car coupling, M. L. Sterling, Car coupling, C. H. Zimmerman, Car mover, J. Spengler, Car, railway, J. W. Post, Car seat, A. J. E. Readie, Car seat, Richards & Dinsley, Car signal, revolving, A. A. Bissell, Carving cylinder, J. H. Leather, Carding engines, feeding mechanism for, J. F. Gebhart, Carpet sweeper, G. W. Gates, Carriage jump seat, H. P. Wells, Carriage springs, die for making, R. S. Hunzeker, Carrier, See Cash carrier, Egg carrier, Case, See Shot case, Cash and parcel carrying railway, H. A. Baker, Cash carrier, H. A. Baker, Caster, J. A. Keller, Caster frame, table, O. F. Bacon, Ceilings, hollow tile arch for, P. B. Wight, Chain, drive, Patzern & Wagner, Chair, See Adjustable chair, Railway rail chair, Chaneller, extension, R. B. Perkins, Check box, D. Lubin, Check rower, Putnam & Berry, Chest, See Flourchest, Churn washer, D. R. Shriver, Churn motor, O'Bannon & Snider, Cleaner, See Sink cleaner, Cloth impervious to water, process of and compound for rendering, E. B. Collins, Clutch, friction, G. W. Baker, Clutch, friction, W. H. Eady, Condenser, steam, B. T. Stowell, Conveyer, F. I. Pearce, Cooler, See Milk cooler, Cooling water, apparatus for, R. M. Downie, Corn and other grain implement for shocking Indian, T. G. Conkling, Corn crushing and splitting machine, E. A. Porter, Corset, nursing, I. Strouse, Cotton press, self-packing, Rummel & Fiedler, Counters, foot railing for, J. Gaetje, Coupling, See Car coupling, Pipe or hose coupling, Thill coupling, Cream and milk transporter, J. E. Baggott, Crimping, machine for radial, McCreary & Smith, Crusher, See Ore crusher, Cultivator, Day & Gregory, Cut-off valve gear, H. H. Meyer, Damper regulator, steam, G. M. Githens, Derrick, I. H. Yeaw, Doll, M. L. Wellington, Door hanger, B. J. Cloes, Draught bar for sleighs, D. N. Barker, Drawing and design, movable outline, M. J. Sweeney, Dredges, head block for A-frames of, R. R. Os-good, Drier, See Glue drier, Drill, See Ratchet drill, Rock drill, Drilling machine, W. F. & J. Barnes, Drinking flask, J. P. Eubank, Ear jewel fastening, G. W. Washburn, Easel, B. Smiley, Eaves trough hanger, J. P. Abbott, Egg carrier, J. W. Palmer, Electric apparatus regulator, C. J. Van Depoele, Electric lighting system, M. G. Farmer, Electric machine, dynamo, C. E. Ball, Electric machine, dynamo, R. J. Sheehy, Electric machines, armature for dynamo, C. F. Brush, Electric machines, device for adjusting the brushes of dynamo, C. J. Van Depoele, Electric motors, armature for, C. E. Ball, Elevator, See Package elevator, Elevator attachment, J. D. Sinclair, Elevator safety attachment, O. S. Nowell, Elevator safety brake, C. Lossow, Engraving machine, A. F. Skinner, Evaporator, T. L. West, Excavating and apparatus therefor, F. Brother-hood, Extractor, See Bung extractor, Fare box, T. W. Fowler, Faucet, beer, A. O'Reilly, Feed rack, W. W. White, Feed water, purifying, C. B. Dudley,

Table listing inventions such as Fence, L. D. Cather, Fence, J. Newton, Fence, J. W. Read, Fences, wirelock for, J. W. Page, Fertilizer, J. B. Beck, Fertilizer distributor, L. Heath, Fertilizer distributor, force feed, C. F. Johnson, Fifth wheel, F. P. Bates, Firearm sight, J. M. Farrington, Fire escape, R. E. Andrew, Fire escape, O. N. Brooks, Fire escape, W. H. H. Doane, Fire escape, E. C. Eyl, Fire escape, J. R. Fell, Fire escape, P. T. Forsyth, Fire escape, Frazee & Culver, Fire escape, W. A. King, Fire escape ladder, S. D. Shattuck, Fire extinguishing apparatus, C. E. Buell, Fires on vessels, apparatus for extinguishing, A. F. Spaw, Fishing reel, H. C. A. Kasschau, Flask, See Drinking flask, Flour and meal bolt, W. Mosher, Flour bolt, centrifugal, Holcomb & Heine, Flour chest and cupboard, combined, T. J. Corr, Folding table, H. A. Tobey, Fork, See Manure fork, Frame, See Caster frame, Grinding wheel frame, Frame, pedestal, vase, etc., decorated, R. Marsh, Frog, W. J. Mordean, Furnace, See Annealing furnace, Glass annealing furnace, Regenerative furnace, Reverb-eratory furnace, Rotating furnace, Gauge, See Caliper gauge, Gauge for elongation and compression of mate-rials under strain, W. H. Paine, Game apparatus for playing parlor quoits, H. A. De Windt, Gas generator for furnaces, J. E. Bott, Gas lighting burner, electric, D. Rousseau, Gas, process of and apparatus for manufacturing, Hanlon & Leadley, Gate, W. Gosshorn, Gate, J. L. James, Gate, B. Selting, Gate, H. W. Taylor, Gate for sheep feeding yards, J. W. Scott, Generator, See Gas generator, Glass annealing furnace, D. G. Barnard, Glass, composition of matter for the manufacture of, R. B. Shepard, Glassware, mould for pressing articles of, J. B. Lyon, Gold and silver from their ores, apparatus for washing and separating, W. J. Tanner, Governor, engine, G. H. Reynolds, Grain binders, bundle discharging device for, C. M. Young, Grain drill fertilizer attachment, L. M. Watkins, Grate, L. Merriman, Grease trap for sinks, J. Tucker, Grinding mill, J. Fitzgerald, Grinding wheel frame, D. B. Hyde, Guard, See Hatchway safety guard, Saw guard, Hame fastener, A. Niccum, Hammer, atmospheric, J. C. Butterfield, Hammer, power, J. C. Butterfield, Hammers, helve of power, C. W. Willard, Hanger, See Door hanger, Eaves trough hanger, Picture frame hanger, Harness, J. Beha, Harrow, A. Michael, Harrow and colod crusher, combined, S. Miller, Harvester, C. Colahan, Harvester cover, W. H. Hill, Harvester knife grinder, G. W. King, Harvesters, grain carrier for, J. S. Davis, Harvesting machine, R. Brown, Hatchway safety guard, elevator, J. P. Richard-son, Header, J. H. Winn, Heater, See Steam boiler heater, Heating and ventilating buildings, system of, N. Wheeler, Heating apparatus, H. Howe, Heel nailing machine, M. V. Ethridge, Hoe, H. H. & C. Finn, Holder, See Bag holder, Paper holder, Pen holder, Rein holder, Stovepipe holder, twine holder, Hook, See Ladder hook, Suspension hook, Hoop cutting machine, J. A. Grant, Horse-bolt, E. Barnard, Horseshoe, J. N. Clarke, Horseshoe, soft ground, L. Brigham, Ice and salt mixing apparatus, A. J. Stoll, Ice machine, W. B. Bushnell, Incrustation preventive, J. B. Hannay, Index, J. H. Wagstaff, Indicator, See Station indicator, Inhaier and irrigator, nasal, J. Keck, Injector, J. H. McPhail, Inlaid articles, manufacturing, G. Hirst, Insulating electric conductors, machine for, H. O. Phillips, Insulating electrical conductors, H. O. Phillips, Intrenching tool, G. F. Elliott, Joint, See Railway rail joint, Joint or coupling for rods, etc., J. E. Langdon, Kiln for burning tiles, earthenware, etc., D. Laemmle, Kitchen utensil, W. H. H. Smith, Ladder, O. V. Flora, Ladder hook, J. F. Manahan, Lamp, C. F. Chew, Lamp chimneys, manufacture of, Willetts & Butt-lear, Lamp, electric, E. Weston, Lamp, electric arc, J. B. Tibbits, Lamp, electric arc, E. Weston, Lamp, extension, G. & J. E. Bohner, Lantern, S. B. Pangborn, Lantern, tubular, C. T. Ham, Leather, artificial Russian, E. M. Freeley, Level, spirit, G. B. Youngs, Lock, See Bottle lock, Nut lock, Railway rail lock, Sash lock, Seal lock, Lock, J. Breyer, Loom for weaving moquette carpets, H. Skinner, Lubricator, M. L. Conway, Lubricator, J. V. Renchard, Mail bag fastening, T. H. Smith, Manure fork, etc., wheel mounted, G. H. How-land, Match, friction, F. Gerken, Metal, producing Babbitt, A. C. Mann, Metal tubes, making, E. K. Coas, Milk cooler, D. B. Wooster, Mill, See Grinding mill, Stamp mill, Millstone driver, W. C. Hale,

