

(2375) W. H. H. asks why it is that the manufacturers of best grades of barometers, both mercurial and aneroid, place the words stormy at about 28, rain at 29, dry at about 31, when the instrument has no such range. Is it not misleading and erroneous? A. It is misleading, and the custom should be abandoned. The variations of the barometer in conjunction with other meteorological observations may be used to foretell the weather. In any case and under the best conditions there is much uncertainty.

(2376) S. L. asks: What kind of red powder is used in the manufacture of the metal polishing paste used for polishing all kinds of metal? A. Red oxide of iron, colcothar or jeweler's rouge may be used for this purpose in the proportion of 25 parts to 20 parts of rotten stone. Both enter into the formula.

(2377) G. F. C. asks how to make a good rosewood stain. A. Boil 1/2 pound of logwood chips in 3 pints of water until very dark, then add 1/2 ounce salts of tartar. Stain wood with boiling hot mixture. When nearly dry, repeat. Two or three coats can be given. Streaks can be made on it with black stain applied with a graining brush. The black stain is made by boiling 1 pound logwood chips in 4 quarts of water and adding a double handful of walnut husks. After boiling, stain. Good ink may be used for the black streaks.

(2378) U. L. H. asks: 1. What is the best method to clean sea shells and prepare them for the cabinet? A. If in good natural condition, no cleaning is needed. If encrusted with parasitic calcareous matter, it can be removed with an engraver's tool or other similar instrument. A very weak mixture of hydrochloric acid and water may be used as a last resort. They should be soaked in cold water, dried well, oiled, and polished by rubbing. 2. How are star fish and sea weeds best preserved? A. Immerse in fresh water for some hours, extended and pinned down upon a plank and dried. Thrust the pins into the wood by the side of the rays, not through them. Dry in the shade. The flesh should be cut out of the larger specimens and a preservative applied before drying. 3. How are shells polished in the quickest manner? A. Place in cold water with quick lime and boil for some hours, cool slowly, apply strong acid to the epidermis, which will peel off. Polish with rotten stone and oil. 4. What is the best illustrated work on conchology? A. We recommend and can supply Structural and Systematic Conchology, by Tyron, 1 vol., cloth, \$12. 5. Where can I get a work on polishing shells, and a guide for lapidaries? A. We can supply you with a Handbook for Artists, Mechanics, and Engineers, by Byrne, price \$5, which contains a chapter on lapidary work. 6. In the process of embalming birds of any value? A. No. 7. How are fine shells shipped, also star fish? A. Pack as you would glass or china. 8. How long will specimens keep in alcohol? A. Indefinitely.

(2379) H. W. S. asks the meaning of the words "present" or "addressed," used in sending a letter to a person not far off. A. "Present" should mean left by writer, but is used often when a letter is sent by hand. "Addressed" seems to have no special meaning in this connection.

(2380) J. J. C. writes: I have a small barrel which held orange wine, and I wish to make root beer in it. How can I clean the cask? There is a sort of a mould in it. A. Fill one-quarter of the cask with water, burn sulphur in it, and shake repeatedly, removing the sulphur if necessary while shaking. This will destroy the mould if done well and effectually.

Replies to Enquiries.

The following replies relate to enquiries recently published in SCIENTIFIC AMERICAN, and to the numbers therein given:

W. T. M., in query 2348, in July 26 issue of the SCIENTIFIC AMERICAN, asks how to cut a large glass bottle. The method you recommend him you acknowledge to be a dubious one. If your correspondent will use a sharp triangular file kept wet with turpentine, he can file the glass with ease. It takes patience, but it will be successful.

Answer to query 2353, to keep milk or butter cool in warm weather. Take tin vessel, say 10 or 12 inches diameter and 4 or 5 inches deep. The cover should be conical, the center being raised 3 or 4 inches. On this place a linen cloth, large enough to hang over the side of the vessel. Take about a dozen strands of woolen yarn, slightly twist them together a portion of their length. From the cone of the cover spread the single strands of yarn over the linen. Immerse the twisted portion in a bucket of water near the can. One bucket of water will suffice for several cans. They should be placed on a bench under the shade of a tree. By this method milk may be kept sweet in the hottest weather.—J. M. C., Independence, Mo.

NEW BOOKS AND PUBLICATIONS.

THE DISPOSAL OF HOUSEHOLD WASTES. A discussion of the best methods of treatment of the sewage of farm houses, isolated country houses, suburban dwellings, houses in villages and smaller towns, and of larger institutions, such as hospitals, asylums, hotels, prisons, colleges, etc., and of the disposal of garbage, ashes and other solid house refuse. By Win. Paul Gerhard, C.E. New York: D. Van Nostrand Company. 1890. Pp. 193. Price 50c.

This little work has as the best evidence of its usefulness the author's name. Mr. Gerhard's authorship gives it the proper stamp. We can confidently recommend it to all interested in sanitary engineering as an excellent exposition of country and suburban practice.

PRACTICAL ENGINEERING FOR ELECTRIC LIGHT ARTISANS AND STUDENTS. By W. Slingo and A. Brooker. London and New York: Longmans, Green & Co. 1890. Pp. vi, 631. Price \$3.50.

Although overshadowed by the influence of the City and Guilds Technical Institute of London, a valuable

contribution is found in the present work to the science of engineering. It purports to be for electric light artisans and students and to embrace branches prescribed in the syllabus of the institute just mentioned. As this syllabus happens to be a very exhaustive one, the work is also comparatively complete. It will be found of value for students and readers in general. We presume it is well adapted for its end, facilitating the work of passing the examinations of the London examining bodies.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted July 22, 1890.

AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers and dates. Includes items like Acid, making acetic, Bang & Ruffin; Advertising vehicle, C. Stulpan; Aerial machine, S. Calmrose; Air moistening apparatus, W. R. Renaids; Alarm, See Fire and burglar alarm; Alloys of metal of the aluminum group, manufacturing, G. A. Faurie; Animal trap, J. M. Waddell; Arm rest, adjustable, E. J. Brandt; Armature for dynamo-electric machines, N. H. Edgerton; Auger, earth, A. V. Hartle; Automatic clamp, T. B. Moon; Axle boxes, dust guard for, T. H. Symington; Bag lock, J. F. Mains; Bands, rinks, etc., by electricity, manufacture of, E. Thomson; Bark mill, G. T. McLauthlin; Basin waste, H. M. Weaver; Bath, See Shower bath; Bath heater, J. L. Brandt; Battery cell, H. E. Walte; Battery plates, forming secondary, H. G. Morris; Battery plates, making secondary, W. P. Kooko-goy; Bearing, self-adjusting, Freeman & Donald; Bedstead, extension for, J. A. Belsber; Bicycle, locking device for, F. E. Wittig; Binder, temporary, W. Lumley; Bisulphite solutions, apparatus for producing, T. P. Burgess; Bisulphites, apparatus for producing, C. Cornwell; Bit, See Drenching bit; Blacking, leather, J. J. Baulch et al.; Blast furnace filling contrivance, A. E. Brown; Boiler bearing, T. B. Merrill; Boilerfurnace, steam, Harteau & Gaffing; Boilers, circulating device for steam, J. Keller; Boilers, fire and water indicator for steam, S. Smith; Bolt, See Railway spike bar bolt; Book attachment, T. F. Gregg; Boot jack, R. E. Heth; Bottle stopper and pouring nozzle, ink, E. H. Alling; Box, See Miter box, Paper box, Pencil box; Box clamp, R. H. Blair; Box lifter, Platen & Bennett; Box strap, J. Mahady; Brake, See Car brake, Locomotive driver brake, Power brake, Vehicle brake; Brake cylinder head, G. Westinghouse, Jr.; Bread cutter, G. W. Langdon; Brick and pottery kiln, N. S. Clark; Buckle, suspender, F. H. Richards; Burner, See Gas burner; Burnishing machine, J. J. Heys; Buttonhole barring machine, H. M. Essington; Button, tuft, Hutchinson & Cables; Cable, wire, T. Midgley; Calculator, time and date, W. R. Will; Calendar, sporting, A. H. Robinson; Callipers or dividers, J. Stevens; Can, See Oil can; Can nozzle, Melton & Webb; Can opener, Cook & Sheppard; Candle attachment, W. T. Ross; Candy rolling and cutting machine, W. Glynn; Car brake, E. Dederick; Car convertible freight, W. F. Mossop; Car coupling, J. Dwyer; Car coupling, B. Himeseth; Car coupling, M. R. Hubbell; Car coupling, W. R. Parkinson; Car coupling, N. T. Quevedo; Car, logging, G. F. Johnson; Car seat, H. S. Hale; Carstarter, L. Seebach et al.; Car, stock, D. N. Brownell; Car, street railway, E. C. Sessions; Carpet, moquette, R. F. Patterson; Carpet stretcher, J. Schilling; Carrier, See Sheaf carrier; Cart, road, C. C. Bradley; Case, See Map case, Thermometer case; Cash carrier apparatus, curve for, R. W. Soper; Cash receiver, J. S. Hagerty; Centrifugal reel, W. R. Dunlap; Centrifugal separator, C. Von Bechtolsheim; Chain link and splice, Hunter & Stansbury; Chair, See Window cleaning chair; Churn, R. H. Socolofsky; Churn, extractor, A. Wahlin et al.; Clamp, See Automatic clamp, Box clamp; Clasp or buckle, C. B. Griffin; Clay grinding mill, T. J. Clifford; Clevis and pin, N. B. Helm; Closet cistern, D. L. Dwinell; Clothes lifter, H. H. & H. E. Forsythe, Jr.; Clothes pin, F. S. Weaver; Clothes wringer, G. E. Jants;

Table listing inventions with patent numbers and dates. Includes items like Clutch, friction, J. Clark; Confectionery machine, J. H. Smith; Cooker, steam food, O. C. Christin; Core making machine, sand, D. Carlin; Corn cutter, Carr & Mallahan; Corset, H. Phillip; Corset fastening, F. Beauchamp; Corset or analogous fastening, T. C. Stodd; Corset, waist, M. P. Bray; Cotton huller and cleaner, C. Young; Coupling, See Car coupling, Pipe coupling, Rod coupling, Rope coupling, Shaft coupling; Crate, J. C. Scoggias; Crayons, etc., holder for, G. Sandell; Cuff holder, H. H. Baker, Jr.; Cultivator, L. S. Crittenden; Current and switch controlling mechanism, E. W. Rice, Jr.; Cutter, See Bread cutter, Corn cutter, Dado cutter, Feed cutter, Leatherthong cutter; Dado cutter, W. R. Fox; Darning last, L. D. Carhart; Dehorning shears, T. Fields; Dental mould, L. F. Seeger, Jr.; Desk and its supports, W. A. Rous; Die cutting machine, H. Thurston; Dipper, M. L. Schoch; Dirt conveyer and grader, J. Toohy; Door, C. M. Amaden; Door check, Fishel & Hotchkiss; Door check, J. B. Thompson; Dredging and other machinery, roller way or track for, D. C. Kingman; Drenching bit, S. A. Cox; Drill, See Rock drill; Drills, machine for making twist, S. Moore; Drills, machine for straightening and sizing twist, S. Moore; Drying fish and other articles, apparatus for, E. Robinson; Dumping cage, automatic, Russell & Parsons; Dynamo, welding or other, E. Thomson; Ear protector, G. B. Hamilton; Eccentric, variable, D. Best; Elbow blanks, machine for trimming, D. A. Ritchie; Electric cut-out, S. D. Field; Electric light shade, J. H. Goshst; Electric lights, filament for incandescent, L. N. P. Poland; Electric lighting system, Cooke & Mackay; Electric machine, dynamo, H. W. Spang; Electric machine, dynamo, E. Thomson; Electric meter, E. Thomson; Electric motor, H. Humbert; Electric motors, automatic lubricating device for, S. L. Barriett; Electric motor, brush reverser for, A. Reckensau; Electrical communicating system, A. G. Holcombe; Elevator, See Loading elevator; Elevator, A. H. McLean; Elevator controller, J. Reilly; Endgate, wagon, W. Beckwith; End gate, wagon, H. M. Purdy; Engine, See Fire engine, Gas engine, Gas motor engine, Steam engine; Envelope machine, S. A. Grant; Envelope moistener, J. Dawson; Eraser, C. L. Woolley; Exercising machine, W. J. O. Bryon, Jr.; Fan for elevator cars, Richter & Lancaster; Fan, toilet, B. R. Maybeck; Fastening device, M. Hamburger; Feed cutter, H. Wiese; Feed trough, F. R. Kent; Feedwater strainer for boilers, L. O. Crocker; Fence, machine, wire, E. S. Morgan; Fence post, G. W. Bond; Fermenting, E. Cares; Fiber, producing, S. Fritsch; Filter, T. A. Myers; Fire and burglar alarm, C. C. Henderson; Fire engine, chemical, R. T. Van Valkenburg; Fire escape, W. Hubart; Fire escape, W. J. Pratt; Fire extinguishing apparatus, J. H. Scholding; Fire extinguishing compound, R. T. Van Valkenburg; Fire kindler, Ford & Baird; Fishing reel, E. F. Payne; Flues, spiral smoke, heating and ventilating, T. T. Moore; Fracture apparatus, T. M. Miller; Frame, See Grain binder frame; Frog for overhead wires, E. Thomson; Furnace, See Boiler furnace, Glass finishing furnace; Furnace, C. F. Miller; Furnaces, apparatus for charging, P. T. Berg; Game, A. Cousen; Garment supporter, W. E. Pullen; Gas, apparatus for manufacturing wood, J. Hanlon; Gas burner for heating and cooking purposes, J. H. Keyser; Gas engine, J. C. Beckfeld; Gas lighter, electric, J. H. Lehman; Gas motor engine, G. McGhee; Gaseous fuel, apparatus for producing, J. M. Ayer; Gate, See End gate; Generator, See Steam generator, Steam and hot water generator; Glass finishing furnace, A. Ferrari; Glove, J. J. Kennedy; Governor, steam engine, S. T. Williams; Grain binder frame, H. Tuttle; Guard, See Railway cattle guard; Gun, breech-loading magazine, L. F. Bruce; Hair curler, K. A. Ryer; Hair separating machine, plastering, H. A. Garvey; Harrow, D. Easton; Harvester, corn, A. N. Hadley; Harvester, corn, J. W. Terman; Harvesters, platform flag for, H. E. Pridmore; Harvesting machine, corn, W. H. Chase; Haap, car or barn door, H. W. Seemann; Hat, D. C. Mowry; Hat ventilator, A. L. Elbel; Hay rake, horse, A. H. Colby; Head rest and cane, combined, T. S. Minnias; Heater, See Bath heater; Heating by electricity, W. J. Burton; Heel stiffener machine, A. F. Stowe; Helicobromy, composite, F. E. Ives; Hotting and loading apparatus, D. L. Van Eman; Holder, See Cuff holder, Music holder, Paper holder, Poulitce holder, Sash or blind holder; Hook, See Saw hook;

Table listing inventions with patent numbers and dates. Includes items like Horse arrester, A. Zalud; Horse detacher, G. W. Sikes; Horse detacher, J. R. Smith; Horseshoe nails, machine for forging, C. E. Moore; House interiors, finishing, M. Ohmer; Houses, construction of tenement, Smith & Peckwell; Huller, See Cotton huller; Ice breaking machine, T. Mills; Indicating races, apparatus for, G. H. Chappell; Ingots, making compound, L. L. Burdon; Ingots, manufacture of compound, L. L. Burdon; Inhaler, J. D. Averell; Inhaler and respirator, H. F. Williams; Jack, See Boot jack, Lifting jack; Jigging machines, motive power for, J. Nicholas; Joint, See Rail joint; Key, See Watchkey; Kiln, See Brick and pottery kiln; Knapsack and shoulder strap bag, combined, J. T. Dwyer; Knife, See Surgical knife; Knife, A. Schlieff; Knitting machine, circular, E. E. Kilbourn; Knitting machine needles with latches, machine for providing, J. J. Jenkins; Knob, sheet metal, W. A. Turner; Ladder, cot, ironing board, and chair, combined step, S. D. Fry; Lamp, arc, A. H. Lucas; Lamp, hydrogen, F. Aurnhammer; Lamps, windlass for raising and lowering, S. Morse; Last, D. F. Willis; Lathe for turning pinion shafts, D. H. Church; Lathe, screw cutting, E. F. Vallquet; Lead, manufacture of white, J. A. Board; Leatherthong cutter, C. E. Ramus; Lifter, See Box lifter, Clothes lifter; Lifting jack, I. N. Groves; Loading elevator, T. McConnell; Lock, See Bag lock, Mail bag lock, Nut lock, Seal lock, Trap lock; Locomotive driver brake, H. H. Welsh; Locomotives, variable exhaust for, D. Hanney; Loom picker motion, Hall & Young; Looms, electric stop motion for, D. E. Coughlin; Machine carriage, F. McDonough; Magnet, drill hole, C. S. Porter; Magnetic separator, G. S. Finney; Mail bag lock, J. F. Mains; Malt kilns, spreader and discharge for, S. Hirschler; Map case, Terrell & Chittenden; Matrix making machine, A. J. Kletscher; Mechanical movement, Westaway & Beard; Metal working apparatus, electric, Lemp & Tregoning; Metals by electricity, forming or shaping, H. Lemp; Metals by electricity, working, E. Thomson; Metallic ornaments on roughened surfaces, mounting, C. B. Healdly; Meter, See Electric meter, Water meter; Middlings purifier, R. L. Hottel; Mill, See Bark mill, Clay grinding mill, Saw mill; Milling machine, A. T. Gifford; Milling machine, J. Hollingworth; Milling machine, F. Hois; Millstones, device for dressing or cutting, J. A. Beamladerfer; Mining machine, F. M. Lechner; Miter box, Gabriel & Pohl; Mould, See Dental mould; Mop and wringer, E. C. Rolls; Motor, See Electric motor, Railway motor, Thermic motor; Mowing machine grinding attachment, C. Beyer; Mucilage moistener, J. Dawson; Music holder, T. R. Budd; Nut lock, A. Simon; Nut machine, G. J. Forrey; Oil can, A. Gralke; Oil can, D. E. Johnson; Oil from fish, extracting, P. C. Vogellius; Overalls, Hohman & Cunningham; Oxygen from air, obtaining, A. Brin; Packing and refrigerating vessel, Frierson & Barker; Packing, metallic rod, P. H., Jr., & O. T. X. Adams; Padlock, F. Wheaton; Palls, cover fastening and ball ear for, G. D. Strayer; Paper bag machinery, E. Stanley; Paper box, knockdown, A. C. Lohmann; Paper holder, roll, E. Moran; Partition, fireproof, C. W. White; Pasting paper strips, machine for, P. Hauck; Pencil box, H. Legge; Pencil sharpener, C. L. Burker; Phonograph, J. P. Maegenis; Photo-engraving apparatus, W. A. Blomgren; Photographing, developing, and delivering the finished pictures, apparatus for automatically, J. Sacco; Piano action, A. D. Dimick; Pictures, mirrors, etc., frame for, F. Servus; Pin, See Clothes pin; Pipe coupling, W. H. Hart; Post, See Fence post; Poulitce holder, C. S. Hirst; Power brake, L. P. Lawrence; Power press, A. L. Platt; Press, See Power press, Printing press, Wood press; Printing attachment for envelope machines, L. P. Bouvier; Printing in several colors by one impression, F. C. Taylor; Printing machine, oscillating cylinder, P. S. Dodge; Printing plate, T. C. Eberhardt; Printing press, cylinder, H. Huber; Propeller, ship's, W. H. Wigmore; Propelling vessels, device for, J. Cochran; Protector, See Ear protector; Protractor, J. P. B. Wells; Puller, See Stump puller; Pulley, E. Goss; Pulley, P. H. Grimm; Pulley, self-rolling, E. Goss; Pulley, split, H. T. Briggs; Pump, E. P. Gleason; Punching and riveting machine, Harper & Hamlin; Punching and shearing machine, combined, H. Stolpe (r); Puzzle, Deeves & Gauthreaux; Puzzle, E. M. Sattelle; Puzzle, F. J. Wooster;