

he knows just what he is about. Never use anything but the very first quality of Babbitt—poor Babbitt for planer cylinders is poor stuff. After you have turned up your cylinder true and balanced perfectly, you will have no trouble about your planer heating unless one screw lifts faster than the other and so binds in the box. This it not likely to happen, however. I run a dimension planer for the B. & A. R. R. at Springfield, Mass., 21 days, with a Nathan & Dreyfus No. 9 self-feeding oiler. No other oiler used. This was a little extra run, but from 17 to 20 days was a common run, and this planer hardly stopped half an hour in the day, and only to sharpen knives. We do not use self-oilers here, using tallow almost entirely, and considerably raw tallow, especially in side cutterspindles. This should be very nice, however, but it gives excellent results. We run two double surfacing matchers and a 26-inch double surfacer constantly, with a spare surfacer and matcher when we get in a tight spot. We don't run occasionally, but constantly, often right through the noon hour, stopping perhaps five minutes at a time to sharpen once in 1 1/2 or 2 hours.

(18) E. C. R. asks for a preparation that will remove the oxide from the surface of finished cast iron after it has been exposed to heat, without hurting the surface of the iron. A. Try sulphuric acid, 1 part; water, 12 or 15 parts.

(19) A. F. G. writes: I have for years been using a Kidder electro-magnetic machine for curative purposes, run with a sulphuric acid battery, one part acid to sixteen of water. The glass cell has a capacity of four pints. When the battery plates are immersed they occupy the space of one pint, leaving three pints available fluid. The two zinc plates are 3 1/2 x 7 inches by 1/2 inch thick, the middle plate of compressed carbon, 3 1/2 x 6 inches, all suspended from a yoke running at the top of the cell. My carbon plate becoming impaired, I have followed the recommendations of the SCIENTIFIC, as well as some local electricians, by attempting the use of carefully made plates from gas carbon, and have in every instance signally failed of success, the latter giving off but a feeble current, while that from the artificial carbon plate (half the size) is powerful. These results, while it is known that gas carbon has no superior as a conductor outside the fluid, is to myself as well as others an unsolved mystery. It has been suggested that possibly the carbon contained traces of iron, but the very process of its formation forbids that idea, as well as tests that have been made with a powerful magnet applied to the pulverized substance. A. It is possible your carbon is too dense. Try annealing it by heating it to a dark red and allowing it to cool slowly. 2. Give information as to the process of making the best artificial or compressed carbons. A. Reduce clean pieces of coke to powder. Mix intimately two parts of the powder with one part of finely powdered caking coal. Ram the mixture into an iron mould. Close the mould nearly tight. Expose to the heat of a furnace until the gas is driven from the mixture, then remove it from the furnace and allow the carbon to cool in the mould. It will be found too porous for use, but it may be rendered more dense by dipping it in a sirup consisting of sugar dissolved in water, and subjecting it again to the heat of the furnace in a closed vessel. This operation is repeated until the required density is obtained.

(20) E. M. L. asks for a receipt for a harmless preparation for preventing the hair from turning gray. A. Y. Cologne water, 2 oz.; cantharides tinct., 2 drms.; oils of rosemary and lavender, each 10 drops. 2. Vinegar of cantharides, 1/2 oz.; cologne water, 1 oz.; rose water, 1 oz. See Hygiene of the Hair, by Professor Erasmus Wilson, SCIENTIFIC AMERICAN SUPPLEMENT, No. 102.

(21) W. S. S. asks for a receipt for annealing steel so that it will be as soft as copper. A. We do not think steel can be made as soft as copper, but you may make it quite soft by heating it to a blood red, then plunging it into powdered charcoal, allowing it to cool there. To avoid accidents from fire, the charcoal should be kept in a well-covered iron vessel, and the vessel should be kept in a safe place.

(22) J. B. asks for information as to brazing saw blades. A. File the ends so that they will lap one over the other; paint the ends well with borax ground up with water on a ground glass or slate; bind the ends firmly together with iron wire; coat some small pieces of silver solder with borax, and place them on and near the joint; put behind the joint a piece of pumice stone, and with a blow pipe flame heat the joint until the solder melts.

(23) W. S. A. gives the following method of making a call for a string telephone. Suspend the telephones at each end, so that the line string (the string connecting the diaphragms) may be kept tightened, and free to transmit vibrations from either end. Now rub some resin on the line string at each end; and when you wish to signal the other, rub along the resined part of the string, and quite a loud noise will be heard in the telephones at each end, sufficient to be heard anywhere in the room. It is on the principle of the boy's "rooster," consisting of a resined string passed through one end of a tin can. Petroleum may be used instead of resin with equally good results. This kind of call does away with electric bells and other contrivances for acoustic lines. If ferrotyp plate and fine wire take the place of the parchment diaphragm and strings, the same call may be used by fixing to the wire a piece of resined string, the call being effected as before by rubbing on the string.

(24) A. B. D. writes: I have been experimenting for more than a year past with electricity, and especially with the Bell telephone, in connection with Professor Hughes' microphone. One day while experimenting I took the diaphragm off one of my telephones and attached the wires from my battery (consisting of three gravity cells), and I was surprised to find the magnet no stronger; the battery seemingly did not affect it; but, on reversing the poles of the battery it was much stronger, the poles of the battery having been working in opposition to the poles of the permanent magnet. On connecting the telephone with the microphone I found that the sounds from it were much louder when

connected properly. I have never heard this fact spoken of before, and it may be of interest to readers of your valuable paper.

(25) M. L. S. asks what will remove from the hands the stains of a red ink known commercially as "eocene?" It is sold as a dry powder, and is mixed with water before using. It is used in paper ruling. A. Where the stain cannot be readily removed by means of soap and water and pumice stone, moisten them with dilute hydrochloric acid, then with solution of bleaching powder (called chloride of lime), and after a few moments rinse in running water. The unpleasant odor left by the bleaching powder may be destroyed by rinsing the hands with dilute aqueous solution of hyposulphite of soda (photographer's "hypo."

(26) J. T. asks: Can you give a recipe for a cement that will mend permanently leather belting, by simply shaving off the edges and bringing together as a splice? A. Try the following: Melt together in an iron vessel gutta percha and pitch in about equal parts. Dry the parts with a hot iron, and while hot apply the cement and press the parts firmly together until set.

(27) R. C. asks for a process for hardening plaster of Paris, to imitate marble for table tops. A. Mix the plaster with alum water instead of pure water. This plaster will require a longer time to set, but will eventually become extremely hard.

(28) J. W. L. asks: What is the best spray to be used in "fixing" crayon drawings? A. A dilute solution of gum arabic, about one part to 50 of water, is often used.

(29) D. O. B. asks for a receipt for a paint or varnish for smoke stack. A. Common asphaltum varnish is used for this purpose.

(30) W. W. A. asks: Is it true that alcohol can be produced from smoke by the addition of an ingredient or two? A. We are not aware that alcohol has been obtained from smoke. Wood spirit or methylic alcohol is obtained by the destructive distillation of wood. It resembles ordinary alcohol in its solvent properties, and for some purposes is used as a substitute for it, but in other respects differs widely from that substance.

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

- H. W. J.—1 and 2. Fluorspar. 3. Mica schist. 4. Pyrolusite, manganese oxide. 5. Fassite, a variety of amphibole. 6. Natrolite, not found in Louisiana. 7. White fluorite. 8. Galena, a valuable ore of lead. 9. Wad or bag manganese, contains cobalt. 10. A furnace slag, silicate of lime, magnesia, and alumina.—C. C. H.—It is menacconite, specular iron ore, called also micaeous hematite.

COMMUNICATIONS RECEIVED.

- On Wells. By S. T. T.
On Optical Delusion. By P. H.
Our Globe Hollow. By J. A.
On the Structure of the Moon and Telescope Objectives. By J. H.
On Jupiter's Spot. By J. H. E.
On Labor Question. By A. St. C.
On Fire Escapes. By H. P. C.
On Curious Fish. By E. B.
On Great Fires. By W. L. K.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

October 7, 1879,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing inventions with names and dates, including Anvil and vise, combined, J. W. Cheney; Asphaltum to a liquid, reducing, A. K. Lee; Axle, car, Sproull & Faught; Axle, vehicle, C. W. Ball; Bag tie, C. T. Wakeley; Bale tie, W. P. Groom; Bark cutter and reducer, W. Chicken; Barrel, cask, etc., J. F. Budke; Barrel support, C. Stoll; Bed and chair, convertible, Godfrey & Haskell; Beer, apparatus for charging, purifying, and filling out, C. G. Frash; Bending machine, O. V. Flora; Bird cage, S. B. King; Blinds, roller, rod, or bar for window, W. S. Simpson; Boiler fires, means for accelerating the draught of, J. D. Imboden; Boiler furnace, steam, E. Reynolds; Boilers of mud, apparatus for cleaning, I. L. Thompson; Boilers, bottom for domestic, W. B. Allen; Book case, M. P. Wolfe; Boot and shoe stretcher, J. Bryan; Boot heel attachment and finisher, H. Saloshinsky; Bottle, nursing, S. A. Darrach; Brick kiln, D. Asbury; Bridge gate, draw, N. Stoll; Bridge, truss, W. Ireland; Brushes, making metallic, D. B. Lovejoy; Burial safe, metallic, S. P. McClean; Cake machine, D. M. Holmes; Can opener, J. Hilton; Can seaming machine, R. D. Hume; Cans, hermetically sealing, E. R. Powell; Car wheel, A. F. Cooper; Car wheel fender, A. T. Miller; Carpet stretcher, O. V. Wood; Carriage dash frame, Harvey & Martell; Carriage, folding child's, F. Bellows, Jr.; Cartridge box, R. D. Hitchcock, Jr.; Check rower, R. H. & W. A. McNair; Child's chair, A. B. Stevens; Chimney cowl, F. Plaenker; Chloroform and allied products, manufacture of, J. W. Mallet; Churn and washing machine, W. D. Little; Churn motor, J. H. Nichols; Cider press, T. D. McCormick.

Table listing inventions with names and dates, including Clock striking movement, H. P. Fiske; Clock winding mechanism, invisible, E. M. L. Magaaz; Cloth stretching machine, etc., C. A. Luther; Clothes pounder, W. T. Howe; Coconut, desiccated, J. S. Dunham; Collar and cuff, celluloid, Kanouse & Sanborn; Cotton and hay press, W. Adair; Cotton gin feeder, I. F. Brown; Cotton press, J. Brown; Crank, self-adjusting, J. Hastie; Cut-off cam, combined, J. Garrity; Cut-off, rain water, J. A. Le Blanc; Cutting apparatus, F. Shoemaker; Ditching machine, G. Smith; Drying floor, D. R. Morse; Egg beating machine, W. C. Burry; Egg tongs, R. P. H. Koska; Electric lights, carbon point for, C. H. Manning; Elevators, safety device for, J. H. Culver; Explosive compound, J. Pattison; Fan, M. Rubin; Farming apparatus, steam, W. H. Foye; Faucet, J. P. Mern; Fence, iron, B. C. Lauth; Firearm, breech-loading, J. M. Browning; Firearm, breech-loading, L. L. Hepburn; Fire escape, F. Burrows; Fish scrap elevator, S. P. Hedges; Flour packer, O. M. Morse; Fog signal, ship's, J. W. Fowle; Fruit gatherer, S. S. Myers; Fuel, artificial, E. B. Warren; Gas exhauster governor, W. Helme; Glove, boxing, C. J. Glover; Grinding and drilling tools, stock for, J. M. Hunter; Gun, spring, R. Wylie; Hair clipping and cutting instrument, J. K. Priest; Harrow, wheel, W. H. Main; Harrow, wheel, H. F. & G. F. Shaw; Harvester and thrasher, combined steam, W. H. Foye; Hay carrier, H. P. Schneck; Hay rake, horse, W. H. Hall; Heater for dwellings, L. W. Cooley; Heel rand slab, Darozel & Dion; Hinge, H. C. Lewis; Hinge, lock, F. Mueser; Hinges, tool for setting, J. D. Shannon; Honey extractor, centrifugal, G. W. Williams; Horse boot, J. C. Burroughs; Horse detach, W. R. Kitchen; Horse rake, W. T. Logan; Horse toe weight, self-fastening, W. Zartman; Hot air engine, A. K. Rider; Hubbing and box setting machine, W. L. Curtis; Hydrant, T. Gibbons; Ice making apparatus, T. L. Rankin; Ladder, portable, S. Seerest; Lamp, C. Geige; Lamp, E. Stolpe; Lamp burner, B. B. Paine; Lamp burner, C. Treptow; Lamp regulator, electric, Houston & Thomson; Latch, F. R. Underhill; Lathe for dental surgery, G. H. Jones; Lathe, watchmaker's, J. Kesselmeier; Lawn sprinkler, F. N. Forster; Leather, artificial, J. Harrington; Leather cloth, imitation silk damasks, and similar materials, machine for manufacturing, Jekel & Tigges; Leather skiving machine, M. A. Holton; Life preserving mattress, C. P. Rood; Lime and cement kiln, C. Brown; Locomotives, etc., reversing gear for, D. R. Pryor; Lumber drier, P. G. Finn; Mantels, making porcelain, S. W. Geery; Mechanical movement, J. Pfizenmeyer; Medical compound for ague, Guyer & Atherton; Metal cutters, hardening and correcting circular, Sawyer & Wright; Metal pipes, bell joints for coupling, S. L. Wiley; Middlings separator, M. Dorsey; Millstone dressing machine, diamond, C. S. Hoover; Mitten, H. W. Price; Moulding plastic materials, J. Crane; Mop, D. Marden; Motor and apparatus for utilizing it, W. S. Colwell; Mower, lawn, H. G. Fiske; Musical instrument, mechanical, M. Gally; Napkin and analogous articles, E. W. M. Cameron; Oakum, manufacture of, T. H. Dunham; Oatmeal machine, G. H. Cormack; Ore roasting and smelting furnace, L. Schantl; Outlet pipe for railway tanks, D. Halladay; Package for powdered articles, S. S. Newton; Packing for oil wells, rubber or gum, J. Eaton; Paint from coke, preparing, H. Lempfert; Pavement or roadway, S. E. Gross; Peanut cleaning and polishing apparatus, B. F. Walters; Pictures upon linen or other material, producing colored, J. Schuhmacher; Pill coating apparatus, H. M. Dury; Pipe joint and coupling, Mixer & De La Vergne; Pitchers, stand for ice, T. Leach; Pitman, B. F. Leslie; Planing and matching machine, J. W. Metcalf; Planter, seed, J. C. Barlow; Plow, A. W. Tucker; Plow, double-acting reversible gang, W. H. Foye; Plow, hillside, Ward & Bullock; Plow point, Brown & Pentreath; Plow point, L. W. Hall; Plow, shovel, W. D. Davidson; Plow, wheel, A. C. Rosencranz; Post hole digger, H. K. Needham; Printing and recording device, ticket, B. C. Pole; Printing on fabrics, W. Rumney; Privy and other vaults, A. W. J. Mason; Pulley fastener, E. W. Blackhall; Pump, J. R. Cusher; Quadrants, cover for, W. H. Boyd; Rail joint, A. T. Wilson; Railway frog, F. C. Weir; Railway rails, roll for reducing, C. Hewitt; Railway track gauge, F. S. Prendergast; Railways, automatic gripe for rope, H. S. Grace; Razor and knife, N. B. Slayton; Reaper and harvester, Desparois & Christian; Refrigerator, F. Woif; Refrigerator car, T. L. Rankin; Relay, self-adjusting, P. S. Bates; Respirometer, J. P. Marsh; Rocking chair, C. Brada; Rolling machines, reeling mechanism for rod, C. H. Morgan; Rotary engine, B. E. Letang; S&d iron, M. F. Potts; Saddle, harness, E. R. Cahoon; Safe, provision, M. Lee.

Table listing inventions with names and dates, including Sash fastener, J. Broughton; Sawing machine, drag, A. A. Stucker; Scales, platform, F. Meyer, Jr.; Seythe fastener, A. D. Myers; Seed drill, W. Anderson; Sewing and embroidering machine, Stackpole & Applegate; Sewing machine, book, D. M. Smyth; Sewing machine treadle movement, P. F. Joute; Sheet metal bending machine, G. R. Everson; Ship's night signal, J. W. Fowle; Sieve, G. W. Lane; Skating rink, apparatus for producing and maintaining the ice floor of, A. T. L. Rankin; Slate, writing and drawing, C. C. Shepherd; Slop jar, H. L. Fowler; Smoke house, W. H. Scudder; Snap hook, J. Spuck; Soda fountains shaped like icebergs, etc., and refrigerated to produce frost on their surfaces, cover for, T. L. Rankin; Spindle, Duffy & Whorwell; Spindle for cop shuttles, I. Eaton; Spoke driving machine, Rakow & Kunke; Spoke pointer, E. C. Stearns; Stair pad, carpet lining, etc., J. A. Sperry; Stamp holder, revenue, C. J. Sands; Stamp, perforating, H. H. Norrington; Stamp, revenue, C. J. Sands; Stave sawing machine, P. T. Baker; Steam boilers, low water alarm for, J. F. Thompson; Steam engine, R. Walton; Steam generator, water tube, C. Ward; Steam, method and apparatus for determining the measure of, M. W. Kidder; Steam trap for drying cylinders, J. Jamison; Steamer, feed, C. H. Dunbrack; Steamer, feed, W. N. Golden; Stove pipe shelf, Swain & Welton; Street sweeping machine, C. Z. O'Neill; Surface gauge, D. B. Woolson; Suspender end, F. S. Brown; Sweeper, R. G. Pittman; Switch apparatus, automatic, C. R. Van Ruyven; Tank for oils and other liquids, G. W. Aldrich; Target, flying, E. Redmond; Thill coupling, Wilson & Gandy; Threshold, waterproof, T. C. York; Tire tightener, J. A. Cooley; Tobacco cutter, plug, T. C. Maris; Toy house, S. I. Russell; Track clearer, M. P. Turner; Trimmings machine for making fluted, O. W. Uhlig; Truck for loading locomotive tenders, M. A. Dees; Twisting machines, stop motion device for, F. Fearon; Type writing machine, C. L. Driesslein; Umbrella, E. J. Forbes; Vapor burner, H. Wellington; Varnish, R. M. Breinig; Vehicle sand band, J. F. Wise; Vehicle, spring, J. S. Corban; Veneer blank for trays and boxes, C. G. Udell; Ventilating appar. for mines, Kay & Rockefeller; Vials and other bottles, apparatus for forming the necks, shoulders, and lips of, E. Connolly; Wagon brake, D. Gibbons; Wagon running gear, A. Coffers; Wash boiler, T. W. Kendall; Washing machine, M. Swan; Washing machine, G. L. Williams; Washing machine, pounder, Anderson & Farley; Waste pipes, device for removing obstructions from, T. B. Armstead; Watch, stem winding, P. H. Gontard; Water elevator, pneumatic pressure, A. H. Knapp; Water wheel, D. H. Anderson; Watering stock, apparatus for, P. Fausch; Weather strip, Fletcher & Gilman; Whiffletree clip, J. H. Harford; Windlass and derrick for boring artesian and other wells, B. F. Mull; Windmill, A. W. Chilcott; Zinc, making chloride of, Wahl & Eltonhead.

TRADE MARKS.

Table listing trade marks with names and dates, including Chili sauce, Tobin & Wickes; Cigars, Toledo & Barranco; Cigars, cigarettes, and chewing and smoking tobacco, Goodwin & Co.; Fine cut chewing and smoking tobacco, G. Jaquet & Co.; Medicinal preparation, C. T. Swift; Razors, knives, and scissors, W. Brokhahne; Sardines, Goldmark & Rosenstein; Whisky, E. Chielovich.

DESIGNS.

Table listing designs with names and dates, including Carpet, A. L. Halliday; Carpet, F. Oertly; Carpet, E. Poole; Cases for watch charms, J. C. Aikin; Monuments, J. & J. Pool; Pencil cases, Le Roy W. Fairchild.

English Patents Issued to Americans.

From September 19 to October 7, inclusive.

Table listing English patents issued to Americans with names and dates, including Air compressing engines, J. F. Allen, Brooklyn, N. Y.; Books for holding prints, E. S. Glover, Portland, Oregon; Boot heels, F. Richardson, Providence, R. I.; Bread baking, R. Adam, Richmond, Va.; Car coupling, R. Gamble, Tallahassee, Fla.; Coffee pot, C. E. Bolton, Tallahassee, Ohio; Electric signaling apparatus, W. Hadden, New York city; Globe machinery, J. Arkell et al., Canajoharie, N. Y.; Motive power, W. S. Colwell, Pittsburg, Pa.; Oil still, E. Weston, Buffalo, N. Y.; Ramie machinery, A. Angell, East Orange, N. J.; Refrigerating and ventilating apparatus, B. F. Teal et al., Philadelphia, Pa.; Riveting machine, J. F. Allen, New York city; Rotary engine, W. N. De Groat et al., Knoxville, Tenn.; Rowing apparatus, J. M. Cadin, Boston, Mass.; Sausage machinery, J. G. Baker, Philadelphia, Pa.; Sewing machine, J. McAllister, Chicago, Ill.; Sewing machine, J. H. Brown, Brooklyn, N. Y.; Telegraph cable, P. Arbogast et al., Pittsburg, Pa.; Telegraph wires, W. E. Prall et al., New York city; Telephone, T. A. Edison, Menlo Park, N. J.; Time register, W. B. Fowle, Newton, Mass.; Vise, T. G. Hall, Washington, D. C.; Water closet, W. S. Cooper, Philadelphia, Pa.; Water closet, A. Edwards, Philadelphia, Pa.; Wheelbarrow, A. W. Melville, New York city; White lead, G. T. Lewis, Philadelphia, Pa.; Wire, barbed, manufacture of, F. Billings, Cleveland, O.; Wire rope, splicing, W. P. Healey, Louisiana; Writing tablet, H. W. Holly, Brooklyn, N. Y.