

(36) H. B. S. asks: 1. Does the quality of a violin depend upon the kind of wood which it is made of? A. The quality of a violin is dependent upon the wood and upon the workmanship with which it is made.

(37) H. H. asks how to make gum foam for soda water? A. Either of the following can be used with advantage: 1. To each gallon of sirup, add from 2 to 4 oz. of gum arabic dissolved in its own weight of water.

(38) E. D. F. asks how high a bicycle track should be banked on the outer edge of a 20 ft. broad track on the circle, the radius of circle being 120 ft., the rate of speed of wheelman to be 1 mile in 3 minutes?

(39) C. F. C. asks: 1. How many candle power is a German study lamp? A. About 20. 2. Candle power of an ordinary 4 ft. gas jet? A. About 12.

(40) J. L. S. asks: What the mixtures of varnishes are, that is, how to make the different kinds. 1. White varnish? A. A white hard spirit varnish can be made as follows: gum sandarac, 1 lb.; clear turpentine, 6 oz.; rectified spirits (65 over proof), 3 pints; dissolve.

(41) J. R. D. desires to know some preparation that will cause tenderskin to become hard and callous? A. Almost any astringent substance will accomplish this purpose, and therefore various solutions, such as vinegar, dilute sulphuric acid, lemon juice, or alum water, may be employed.

(42) F. W. B. asks: 1. Why is the N. Y., C. & St. L. Railroad called the Nickel Plate? A. We believe it was a nickname given because its founders represented it to be superior to any other road, so the story was that they were not satisfied with steel rails, but must have them nickel plated.

(43) F. B. W. asks: 1. How to smoke glass slides for magic lanterns, so the black won't come off? A. You can smoke glass over a small gas flame or over a candle. You can cause it to adhere by subjecting it to steam of alcohol.

(44) W. K.—For elastic moulds, rubber is probably the most durable material. The composition of printers' rollers is 8 pounds glue dissolved to a jelly by water, then add 7 pounds molasses.

(45) A. A.—The brass coated zinc plaques are electro-plated. For the brass bath: 4½ gallons pure water, bisulphate of soda 24½ ounces, cyanide of potassium 35 ounces.

colorless, and gives under the action of a battery a brass deposit of a very fine shade, using an anode of brass. By slightly changing the proportions of acetate of copper and protochloride of zinc, the tints may be varied from reddish yellow to greenish yellow.

(46) O. O.—We do not know that the limit of speed in wheels has ever been reached. The limit is entirely controlled by friction of the mechanical parts and the medium in which the revolving motion takes place.

(47) C. M. asks: If a perfect circle is made with a very fine silver wire, and then, by means of four rims, the wire transformed into a perfect square, what is the difference in the result of this process and that of squaring the circle?

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted,

May 12, 1885,

AND EACH BEARING THAT DATE.

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

Table listing inventions with names and patent numbers. Includes items like Abrading disk, Alarm, Animal powers, Governor for, S. D. Shepperd, Annunciator and fire telegraph, C. K. Pevey, Arches, laying artificial stone or concrete, P. H. Jackson, Auger, earth, J. M. Cross, Auger, hollow, G. W. England, Auger, post hole, Bense & Sievert, Awning, window, T. L. Barlow, Axle box, car, G. H. Shattuck, Axle, car, G. W. Bedbury, Axles, device for cutting and screw-threading wagon, G. H. Williams, Bag, See Mail bag, Bag holder, M. Williams, Baking powder, A. McDonald, Ball trap, F. C. Damm, Bath, See Vapor bath, Bath tubs, apparatus for heating water in, G. Hayes, Bearing, anti-friction, J. M. Keleher, Bed bottom, Bulkeley & Browning, Bedstead, E. W. Blake, Belt cleaner, driving, Wilson & Watson, Belt fastener, P. Koch, Billiard table bridge indicator, C. F. Spaulding, Binder, temporary, Roach & Kroevel, Blackboard and desk, combined reversible, Smith & Johnson, Blind, inside, F. Keller, Blind, etc., inside, F. Keller, Block, See Pulley block, Board, See Blackboard, Ironing board, Stove board, Body protector, W. J. Wilde, Boiler, See Steam boiler, Boiler cleaner, J. Waters, Boiler coverings, applying, W. S. Grubb, Bolt machine, Hall & Young, Book holder, A. A. Fuller, Books, machine for rounding the backs of, Wade & Stone, Boot or shoe, G. Castle, Boot or shoe, L. E. Moore, Boot or shoe heel, Rachtler & Rothziegel, Bottle stopper, W. Beardsley, Bouquet holder, M. H. Jones, Box, See Coffee and tea box, Folding box, Brake, See Car brake, Locomotive brake, Vegetable brake, Wagon brake, Brake governor, automatic, G. H. Poor, Brush making machine, J. M. Pickering, Bucket elevator, F. W. Howell, Buckle, combined back strap and trace, G. Zitlow, Buckle, combined hame tug and trace, H. B. Robertson, Buckle, suspender, F. B. Spooner, Buggy top support, Longcor & Dawson, Burner, See Vapor burner, Button and sleeve pin, combination cuff, Riley Jr., & French, Button for gloves, etc., L. Meyers, Cable or belt tightener, J. H. Whiting, Call box, F. B. Wood, Can, See Collapsible can, Cleaning can, Meat shipping can, Can, T. Yapp, Cans, etc., bottom for, T. Burkhardt, Capsule filler, Albsch & White, Car body truss, J. Stephenson, Car brake, K. H. H. Leineweber, Car brake, automatic, S. W. Robinson, Car brake, automatic, C. V. Rote, Car coupling, A. J. Chapel, Car coupling, Titus & Bossinger, Car coupling, A. W. Van Dorston, Car door, grain, S. R. Washer, Carbon dioxide, apparatus for generating, J. McEwen, Carbons, apparatus for making curved, C. F. Heinrichs, Carburetor, gas, H. Symons, Carpet fastener, McFaddin & Lucas, Carriage, baby, Ribble & Sammis, Cartridge shell loader, J. T. Baird, Carving fork guard, A. H. North, Casting, divided, J. Yocum, Jr., Casting metals, M. P. Hayes, Casting rolls, J. Hemphill, Cement, machine for testing, H. Fajia, Chain links, machine for putting together, E. L. Howe, Chair, See Child's chair, Chair, G. L. Burdett, Chair, J. W. H. Doubler,

Table listing inventions with names and patent numbers. Includes items like Charts and drawings distorted by disproportionate contraction, and providing for their correct republication, measuring distances and lengths on, E. R. Knorr, Child's chair, F. F. Parker, Child's chair tray, R. L. Bent, Chimney top and ventilator, G. Burkhardt, Churn, J. A. McRae, Churn, J. J. Stevens, Cider purifier, E. Ripley, Clasp for garments, spring locking, C. J. S. Hayden, Cleaner, See Belt cleaner, Boiler cleaner, Clipping machine, hair, J. K. Priest, Clock, mechanical and electrical alarm, Moser & Magee, Clock movement frame, W. C. Walter, Clover huller, J. M. Thompson, Coal scuttle, G. W. Hodesty, Cocks of gas, etc., extensible service box for the stop, S. A. Brown, Coffee and tea box, F. Schombel, Collapsible can, F. R. Grout, Concrete light for buildings, areas, etc., T. Hyatt, Conducting cords, flexible tip for, G. K. Thompson, Coping, J. F. Smith, Corset and garment support, combined, A. L. Zorkowski, Corset stay, A. J. Worrall, Corset steel fastening, Alcorn, Jr., & Blake, Corset steel fastening, L. Hill (r), Cotton gin, I. F. Brown, Coupling, See Car coupling, Pile coupling, Thill coupling, Crank shaft journals, apparatus for straightening, J. H. Thomas, Creaming can, H. Kelsey, Cultivator tooth, Helms & Trinkle, Cup, See Oil cup, Cut-off valve, steam, G. W. Anderson, Dental plate, A. H. Parker, Digger, See Potato digger, Disinfecting water closets, W. M. Ernst, Door and gate spring, J. M. Stewart, Door hanger, C. W. Bullard, Door saddle or sill, J. A. Cramer, Draught equalizer, J. W. Wainwright, Dress shield, I. A. Canfield, Dress shields, apparatus for the manufacture of arm pit, I. A. Canfield, Dress shields, manufacturing, I. A. Canfield, Drill, See Manure drill, Rock drill, Drill and sucker rod joint, A. M. Bollinger, Drilling machine, French & Gifford, Drilling machine, T. H. Thompson, Earth and coal loader, D. J. Gilchrist, Easel, book, H. Pletberg, Egg beater, T. Fletcher, Electric light, Sawyer & Man, Electric lights, wiring interiors for, Stieringer & Vail, Electric lighting system and switch, W. S. Andrews, Electric machine, dynamo, C. F. Heinrichs, Electric signal, H. D. Winton, Electric accumulator, J. J. Barrier et al., Electrical conductors, vulcanization of rubber coverings for, J. J. C. & M. Smith, Electrical distribution, system of, W. S. Andrews, Elevator, See Bucket elevator, Hay and wheat elevator, Embalming apparatus, W. T. Baker et al., Embroidery, box for packing and displaying, H. J. Woodley, Engine, See Gas engine, Locomotive engine, Road engine, Traction engine, Wind engine, Excavator for removing snow, etc., rotary, E. Leslie, Excavator, submarine, R. Morhard, Extension table, G. McLagan, Feed water heater, M. Funk, Feed water heater and filter, T. A. Lathrop, Feeder, automatic time stock, T. L. Bissell, Feeder, boiler, G. E. Hall, Felly machine, wheel, W. H. Stevens, Fence, J. Bryant, Fence, S. & G. Calhoun, Fence, hedge, W. Young, Fence post, M. & S. E. Foreman, Fence post, J. J. Vinton, Fence rail, barbed, I. A. & M. D. Kimer, Fences, machine for making barbed wire, L. E. Sunderland (r), Fencing, electrical conductor for wire, C. Williamson, Finger ring, etc., Traitel & Ruyter, Fire alarm, C. J. Crikelair, Firearm, electric, F. E. Kinsman, Fire escape, Beale & Bangs, Fire escape, C. Hoell, Fire escape, Scradler & Kittler, Fire extinguisher, chemical, T. E. Connelly, Fish plate fastening, W. S. Grubb, Floor tube, A. G. Stilson, Folding box, G. L. Jaeger, Forging plant, W. Hainsworth, Fountain, See Sirup fountain, Fruit cutter, H. M. Morrison, Fuel and illuminating gas, apparatus for the manufacture of vaporous and gaseous, R. B. Avery, Furnace, See Smoke preventing furnace, Furnace, J. Reuleaux, Furniture, F. H. Conant, Gas, apparatus for manufacturing, A. F. Randall, Gas, apparatus for manufacturing illuminating, S. C. Salisbury, Gas engine, D. S. Troy, Gas, pipe line for carrying, K. H. Stivason, Gas pressure regulator, R. Boeklen, Gas regulator, W. H. Cothern, Gas washer, chlorine, J. A. Just, Gate, See Sliding gate, Glass annealing furnace, C. H. Lauman, Glass cutting machine, electric, Lange & Lindner, Glove lacing, E. Forbes, Governor, C. Prusmann, Governor, steam engine, A. Thierfelder, Grain binder cord alarm, W. M. Whiting, Grain cleaning machine, H. Lampan, Grain separator, J. F. Henderson, Grain separator, J. Lucas, Grain separator, W. H. Mercer, Grate stove attachment, J. M. Seymour, Grates and fireplaces, stove attachment for, J. M. Seymour, Grinding mill, Couch & Woolbert, Guard, See Carving fork guard, Hatchway guard, Gutter, cornice, D. Newton, Handle, See Knife handle,

Table listing inventions with names and patent numbers. Includes items like Harness rosette, J. R. McAdam, Harrow, F. M. Hakes, Harrow, C. T. Holman, Harrow and pulverizer, combined, B. Wilt, Harvester, J. P. Manny, Harvesting machine, pea, J. H. Nicholes, Hat felting and sizing machine, T. Longshaw, Hat, storm, H. M. Sawyer, Hatchway guard, elevator, W. S. Morton, Hay and wheat elevator, P. F. Fleming, Hay fork, horse, C. Maginnis, Hay rake and loader, W. & D. Blackstone, Hay rake, horse, J. H. Thomas, Hay ricking device, R. Davis, Hay stacker, T. S. Adkins, Hay tedder and rake, combined, E. L. Williams, Heater, See Feed water heater, Heel nailing machine, H. A. Henderson, Heel nailing machine, Henderson & Raymond, Heel nailing machine, F. F. Raymond, Hinge pin holes, forming, Burdick & Sandford, Hinge, reversible, J. F. Aston, Hoe, plasterer's, P. C. Canfield, Hoist, J. J. White, Hoisting and hauling gear, J. Christie, Hoisting bales on wagons, apparatus for, G. W. Lamb, Holder, See Bag holder, Book holder, Bouquet holder, Lamp holder, Pillow sham holder, Rein holder, Horse boot, J. Fennell, Horse boot, elastic, J. H. Fenton, Horse power, W. T. Cross, Horses to harness, apparatus for training, C. F. Shedd, Horseshoe, E. F. Lowry, Hose tower and fire escape, W. M. Ward, Hosiers, E. E. Scatchard, Hub, wheel, G. S. Briggs, Huller, See Clover huller, Rice huller, Seed huller, Indicator, See Billiard table bridge indicator, Station train indicator, Injector, F. C. Douds, Injector, hydrocarbon, W. M. Brisben, Iron, See Sad iron, Iron post, McKenzie & Fyfe, Ironing board, J. Delauney, Jack, See Lifting jack, Wagon jack, Jacket, knitted or cardigan, Steinam & Seeligman, Jar for solid extracts, J. K. Lilly, Joint, See Pipe joint, Universal joint, Kitchen cabinet, S. S. Groves, Knife handle, C. Ibbotson, Knit fabrics, machine for uniting, Baker & Straw, Knitting machine narrowing comb, A. J. Wainman, Knitting machines, head for fabric take-up devices for, H. L. Hayden, Ladder, extensible step, H. Temple, Ladder, sectional, K. Wood, Lamp chimney and globe, S. M. Howard, Lamp, electric, C. F. Heinrichs, Lamp holder, movable, J. B. Bartlett, Lamp, incandescent electric, T. A. Edison, Lamps, automatic feeder and regulator for, B. W. Mitchell, Land roller, J. J. Lehman, Last patterns of graduated sizes, making, W. Kingston, Lathes, machine for feeding blanks to, J. Welker, Jr., Leather finishing machine, G. A. Hardy, Leg, artificial, H. Haussmann, Level, pendulum, W. C. Thayer, Life preservers, machine for making tubebunches for, C. Ledue, Lifting jack, L. Hara, Light, See Electric light, Lightning protector, H. A. Pitcher, Lock, See Mortise lock, Lock, T. Kirwan, Lock dial, F. A. Hatch, Locomotive brake, G. H. Poor, Locomotive driving box, W. J. Healy, Locomotive engine, compressed air and gas, D. S. Troy, Lubricating metallic surfaces, composition for, H. W. Belknap, Mail bag, W. A. Horrall, Mail bag catcher, P. B. Cassidy, Manure drill, J. D. Armstrong, Mashing apparatus, J. K. Hammerle, Match safe for lanterns, J. W. Dick, Meat shipping can, box, or package, fresh, R. Bogardus, Mechanical movement, W. S. Carlisle, Mechanical movement, R. Miehle, Metal shears, C. A. Svensson, Mill, See Grinding mill, Windmill, Mitt, A. B. Clarke, Model or dummy for dressmaker's use, adjustable, E. & A. Merle, Moulders' facings, compound for, S. Obermayer, Mortise lock, F. A. Hollenbeck, Mortising and boring machine, E. N. Camp, Motion, device for converting, H. Schulze-Berge, Motor, J. E. Johnson, Mowing machine, J. P. Manny, Musical instruments, transposer for key board, L. Metzdorf, Nail arranger, S. Perry, Nail makers, cold air blast for the protection of, J. Altmeyer, Nail making machine, C. W. Cugin, Nail plate feeder, J. C. Gould, Needle, E. & E. Cheshire, Net for catching porpoises, J. A. Cooke, Net, landing, G. W. McClintock, Nuts, device for adjusting and removing, P. G. Gesford, Jr., Oil cup, T. D. Ruggles, Ore concentrator, N. Butler, Oven, portable, Gilbert & Wendling, Oven, portable, A. P. Steward, Package carrier, C. W. Griffiths, Packing for stuffing boxes or piston rods, etc., Smith & Marshall, Paddle wheel for vessels, T. C. Love, Pail, dinner, W. A. Gill, Paper cutting machine, C. S. Barton, Pattern making machine, C. Tourigne, Penfil, G. Mussinan, Jr., Pencil sharpening machine, W. H. Lamson, Photographic camera attachment, L. T. Young, Photographic cameras, combined shutter and diaphragm for, D. C. Hoover, Phylloxera, apparatus for destroying, L. Laborde, Piano action, P. Menges, Piano hammer, M. Junger, Pianos, repetition action for upright, A. Stegmann,

