

(27) J. R. Y., Jr., asks: Please give me a recipe for a wash that will remove or hide marks and stains on hard finished house walls.

(28) C. D. R. asks: Please give me recipes for making turpentine japan or paint dryer, benzine japan or paint dryer, and rubbing varnish for cabinet makers' use?

(29) J. H. R. asks: What is the advantage of placing the high pressure cylinder of a marine compound engine directly above the low pressure cylinder?

(30) W. K. D. says: I have an acquaintance who has an open fireplace in his office, and claims that during the forenoon the sun comes into the room and deadens the fire.

(31) J. A. C. says: I have a boiler made of first class iron, which commenced leaking in one of the joints. This continued until every joint was leaking.

(32) W. E. W. asks: 1. How can I tell the weight of a flywheel where I know the diameter, width of face, and thickness of same?

(33) J. E. C. says: I see it stated in an article on machine belts, in the SCIENCE RECORD for 1876, p. 331, that a belt wrapped one quarter round a pulley has only one fourth the power of what it would have if wrapped one half round.

(34) M. A. W. asks: 1. Will a steam boiler 4 feet long by 24 inches diameter, with a firebox 40 inches high, 16 inches wide, and 20 inches long, with 36 one inch flues, be large enough to run an engine with a cylinder, 3 x 6 inches, with 80 lbs. boiler pressure at 200 revolutions per minute?

(35) C. A. C. asks: 1. How can I varnish a colored mechanical drawing, so that the paper and drawing will not be marred by the operation?

(36) L. M. C. says: I am nineteen years of age, and my ambition is to learn to be a competent practical locomotive engineer.

1. Will high pressure steam produce a higher note on a steam whistle than low pressure steam on the same whistle? A. Generally, yes.

(37) J. O. says, in reply to D. W.'s query as to the sudden welding of a mill spindle and its step piece: I have had a similar experience in the uniting of hardened steel under excessive friction, due to the absence of lubricant.

(38) J. H. P. says, as to the welding of the spindle to the step plate: I think that the end of the spindle had worn a little hollow in the step plate, having the same curvature with itself.

(39) F. D. H. says: The statement of D. W. as to the welding of a mill spindle point to its step can be verified by three precisely similar cases, which have been brought to us for repairs.

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

J. A. S.—It is iron pyrites or sulphide of iron. See p. 7, vol. 36.—W. R. S.—A quantitative analysis of fire clay, etc., would cost about \$15.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects: On the Valuation of Sugar. By S. W.

Also inquiries and answers from the following: F. B. M.—G. S. B.—P. P. P.—L. S. B.—A. K. B.—C. P. R.—J. B. O.

HINTS TO CORRESPONDENTS. Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Hundreds of inquiries analogous to the following are sent: "Who makes dynamometers? Where can silkworms' eggs be obtained? Who makes brewers' machinery? Who sells tobacco-flavoring composition?"

OFFICIAL.

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending

April 3, 1877, AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.] A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar.

Agitating and mixing, G. L. Witsell 189,293 Agricultural boiler, McAfee & True 189,051 Air guns, dart for, Spring & Robinson 189,070 Animal poke, R. E. Atteberry 189,169 Animal poke, B. D. Watson 189,158 Arm rest, P. R. Wagon 189,157 Ax helve shield, J. M. Larsh 189,109 Bag holder, J. Eberhard 189,202 Bale eye former, H. S. Reynolds 189,264 Bale tie, R. C. Pope 189,258 Bales, tightening bands on, M. Quinn 189,138 Barrels, trussing, P. Beamer 189,176 Baths, hot air and other, T. Keech 189,281 Bed bottom, spring, T. R. Jones 189,104 Bee hive, H. Wheaton 189,291 Beerkegs with soda, supplying, J. J. Schillinger 189,289 Belts on pulleys, throwing, R. Reinhard 189,263 Binder, temporary, G. W. Emerson 189,203 Bird cage, A. E. Mook 189,251 Blind slot worker, E. C. Whipple 189,292 Bobbin, J. Dawson 189,243 Boiler bottom, C. R. Everson 187,205 Boiler furnace front, G. L. Allen 189,077 Bolt heading machine, A. F. Jackson 189,226 Boot heel stiffener, Moore & Rogers 189,126 Boot heel stiffener, N. J. Simonds 189,066 Boot stiffeners, making, N. J. Simonds 189,067

Table listing various inventions and their patent numbers, including items like Boot shank support, Boots and shoes, Breech-loading firearm, Brick machine, Bridge, Avery & Bartholomew, Bridge pier, Avery & Bartholomew, Bridge pier, E. E. Colby, Bridle, G. M. Strong, Broom machine, C. E. Lipe, Buckle, F. W. Schafer, Burial case, E. Mets, Burial casket, A. Fischer, Butter cutter, Dugan & Moncrief, Butter dish, W. H. Fitch, Butter for packing, W. B. Bemis, Butterpail, J. Gilberts, Button fastening, S. A. Hazelton, Cam motion, Houghtaling & Siviter, Cane and umbrella, M. M. Copp, Car axle lubricator, W. Palmer, Car coupling, J. Hayden, Car coupling, M. L. Mathias, Car heater, G. W. Dismar, Car pusher, H. La Tourette, Car starter, W. Jasper, Card board, ornamental, Adams & Bett, Carriage, portable engine, C. M. Miller, Carriage seat lock, Hayward & Hays, Cartridge, A. B. Smith, Cartridge shells, varnishing, Pratt & Reynolds, Cast iron into steel, converting, C. W. Siemens, Casting metals, C. & E. H. Dusenbury, Centrifugal dryer, etc., J. Buchanan, Jr., Chair and work table, G. L. Rich, Cigar wrapper, W. Broseker, Clevis, Coonley & Buckius, Clock lockwork, J. W. Williams (r), Clothes drier, J. Kahn, Clutching device, H. Fuchs, Cocks and faucets, closing, Towle & Plass, Coffee mill, protector, etc., W. A. King, Coffee pot, R. L. Nelson, Coffee roaster, N. Metz, Coin detector, counterfeit, J. A. Thompson, Cointray, A. A. Hyde, Collar, standing, J. K. P. Pine, Cooling liquids, A. D. Puffer, Cork, or bung for cans, etc., T. Tully, Corn ball presser, C. E. Vankeuren, Corn drill, D. Kerschner, Corn planter, D. C. Bacon, Corn planter, H. Wagoner, Corn planter, hand, W. E. Seelye, Cornsheller, H. Neubert, Cotton press, C. J. Beasley, Cotton press, G. C. McKee, Cotton press, J. Templeton, Cotton seed planter, R. Ball, Crucibles, making plumbago, W. Smith (r), Culinary vessel, H. C. Milligan, Cultivator, fallow, J. Richardson, Dental plugger, K. L. Mills, Die for sucker rod joints, G. Douglas, Door handle and catch, W. C. Folant, Dynamo-electric machine, D. F. J. Lontin, Eavetrough fastener, A. J. Gilbert, Egg carrier, W. J. H. Kappe, Electro-magnetic regulator, R. A. Hayes, Engine, high and low pressure, T. L. Jones (r), Envelope, R. C. Carter, Eyeglass, I. H. Johannes, Feathering paddle wheel, H. Williams, Feed water heater, B. Eynon, Felly, W. A. Wharton, Fence post, J. R. Pemey, Fence post tip, D. C. Morris, Fence wire barbed, O. O. Kittleton, Fence wire, barbed, J. McNeill, Flat iron heater, S. B. Dinsmore, Flux, composition, C. F. Secor, Friction clutch, M. Rumely, Furnace grate, B. Hershey, Furnaces, supplying air to, W. Halsted, Gas making, illuminating, J. Absterdam, Gas, making illuminating, J. Rigby (r), Gas retorts, raking, T. F. Rowland (r), Gas retorts, charging, T. F. Rowland (r), Gear wheels, making, J. Comly (r), Gimlets and twist drills, J. C. Richardson, Ginger snaps, making, Bell & Hills, Glass pipe coupling, H. P. Humphrey, Glass shades, etc., making, J. Bourne, Governor, J. W. Collet, Governor, stop motion, L. Skinner, Grain binder, Hodges & Blim, Grain binder, C. B. Withington, Grain elevator, floating, C. W. Mills (r), Grain separator, N. Kibler, Grain separator, E. F. Osborne, Grate bar, E. Stroh, Grinding machine, G. A. Knowlton, Hammers, die for, Kip & Rieckel, Harrow, E. T. Bousfield, Harvester, O. N. Skaaraas, Harvester reel, E. L. Phipps, Hay elevator, J. & P. Lux, Hay elevator and conveyer, J. R. Moran, Hay for fuel, winding, E. Harding, Hinge for boxes, etc., A. F. Gerald, Hoe, O. H. Hicks, Hoisting machine, D. H. Merritt, Horse blanket, J. C. Ayres, Horse collar, H. W. & C. F. Whitney, Horse hay fork, P. Grant, Horseshoe, C. W. Atkinson, Horseshoe nail plates, beveling, J. M. Laughlin, Horseshoe nails making, J. M. Laughlin, Horseshoe nails, making, G. L. Hall, Hose bridge, J. Taylor, Hose coupling, A. E. Rich, Hydrocarbon furnace, B. Hershey, Ice tool, J. Crawford, Injector, J. Proeger, Inkstands, filling and emptying, I. M. Fisher, Insulated wire, H. Redding, Ironing table, G. W. Hook, Ironing table, T. Libby, Knife scourer, P. Hanersperger, Knife scouring pan, Cassel & Zint, Knob latch, W. A. Barlow, Knobs, to shanks, attaching, W. A. Barlow, Knobs to spindles, attaching, W. D. May, Labeling machine, Knoch & Salomon, Lamp, W. A. Butler, Lamp, S. S. Newton, Lamp bracket, Sherwin & Hoople, Lamps, center, Sherwin & Hoople, Lamp for hydrocarbon oils, etc., D. McCarty, Lamp, night, H. W. Huntington, Lamp or chandelier, oil, J. F. Lauth, Lampscreen holder, J. E. Hubble, Lampshade holder, H. L. Ivies, Lard cooler, W. P. Harvey,

Table listing various inventions and their patent numbers, including items like Last, C. E. Cree, Lathe chuck, F. Armstrong, Lead furnace bottom, T. Bisch, Leather goods, stamping, L. H. Urner, Level, T. H. Burk, Lightning rod, L. D. Vermilya, Lock for sliding doors, W. C. Rogers, Lock, master key, F. C. Yanda, Locking latch, H. A. Chase, Meat tenderer, V. Lapham, Millstones, etc., balancing, C. E. Benade, Moulding machine, J. B. McCune, Mosquito net frame, J. F. Volle, Nail plate feeder, W. Koplin, Nut lock, T. Vernon, Oil stone holder, G. W. Dudley, Packing, piston, W. Rankin, Paint composition, S. B. Fisher, Paper bag machine, C. A. Nixon, Paper barrel machine, F. N. Davis, Paper boxes, L. P. Heath, Paper perforating, R. T. Smith, Parlorskate, H. L. True, Pencil sharpener, Roache & Redding, Pianoforte action, upright, F. Frickinger, Pictures, etc., preserving, L. T. Luther, Pile driver, steam, T. T. Loomis (r), Pitman rod, B. E. Carpenter, Plaiting machine, T. Hagerty, Plow, J. Preston, Plow, R. B. Thomson, Plow, clearing attachment, J. F. Dock, Plow mould boards, C. Blair, Plows, corn guard for, Murphy & Bramell, Plowshares, making, C. H. Thompson, Portraits, incasing pocket, J. R. Applegate, Press metal drawing, O. Smith, Projectile, D. Kennedy, Railway switch, S. H. Finch, Railways, clamp for rope, W. Eppelsheimer, Register and punch, N. A. Ransom, Rein holder, Hall & Richardson, Rod coupling, W. C. McClintock, Rolling blanks for rod joints, G. Douglass, Rolling rings, and cylinders, R. A. Carter, Rope clamp, Caier & Powell, Rope clamp, H. T. Smith, Rope making machine, L. E. Higby, Rowlock, T. S. Poppelwell, Safe, provision, E. Webb, Sash balance, Kolb & Osberghaus, Sash fastener, W. T. Doremus, Sash fastener, H. Jones, Sash fastener, W. E. Sparks, Sash holder, R. Holcroft, Sawtooth, insertible, T. S. Disston, School desk, Cogger & June, Scythe snath fastening, M. Smith, Sewing machine motor, Artley, Berg, & Dieterlea, Sewing machines, button holes, E. Moreau, Shaft coupling, G. A. Chapman, Sheet metal elbow, N. I. Rothan, Shingle, metal, Locher & Knispel, Sickle grinder, H. S. Stevens, Silk, etc., dressing, C. Corron, Skirt, J. Mark, Skirt supporter, W. W. Towson, Slate, F. W. Mallett, Slate washer, R. De Haven, Smoking pipe, B. A. Jonasson, Snap hook, Nash & Kempshall, Soap composition, Baxter & Horrocks, Spark arrester, E. M. Johnson, Stamp, perforating, G. F. Almy, Station indicator, J. H. Herzog, Steam and air brake, Taylor & McCamish, Steam boiler, drop tube, C. K. Heath, Steam boilers, fire box, B. Hershey, Steam engine governor, S. A. West, Steam radiator, G. W. Blake, Stop cock locking case, H. C. Meyer & Co. (r), Stove, looking, E. P. Morong, Stove, heating, E. Stewart, Stove oil, H. P. Malone, Stovepipe wall thimble, C. Streit, Sugar boiling pan, etc., W. Clough, Table leaf support, W. F. Daly, Telegraph, dial, R. J. Sheehy, Telegraph multiple, G. Smith, Telegraphy, automatic, J. W. Brown, Thill coupling, T. J. Hubbell, Time globe, I. P. Juvet, Tire heating apparatus, S. G. Reed (r), Tobacco pipe, J. Davis, Tool holder, T. Strobridge, Towel rack and wall protector, E. Pullan, Traveling bag, safety, H. Collins, Treadle, W. B. Floyd, Truck, brick yard, E. Remillard, Truck, garbage, J. O. A. Bennett, Trucks, etc., gripping attachment, Thomas et al., Valve, Mann & Owens, Valve, automatic check, O. Collier, Valve, balance slide, T. M. Nagle, Valve, steam pump, N. W. Wheeler, Vapor burner, F. A. Lyman, Vehicle, side bar spring, J. F. Bridget, Ventilator, G. R. Moore, Ventilator, kitchen, J. A. Leeper, Ventilator, railway car, S. Darling, Vessels, relieving stranded, H. F. Knapp, Wagon brake lock, S. H. Miller, Wagon seat spring, B. F. Wells, Weed destroyer, J. A. Lees, Well tubing anchor, etc., Wanner & Yonkers, Windmill, D. Nysewander, Windmill, E. Stata, Window blind, J. Miller, Window mirror, P. W. Ralfs, Window screen, R. Calhoun, Wood oil for glue, H. Thaulow, Wringer, L. Sternberger,

DESIGNS PATENTED. 9,873.—CORSET.—M. Adler, New Haven, Conn. 9,874 to 9,876.—CARPETS.—A. Baye, London, England. 9,877.—DISHS.—E. Boote, New York city. 9,878.—TYPES.—J. M. Conner, Greenville, N. J. 9,879.—STOVES.—R. A. Culter et al, Peoria, Ill. 9,880.—CARPETS.—E. Daniels, Paris, France. 9,881.—MOTTO.—J. W. Fleischmann, Williamsburg, N. Y. 9,882.—Hinges.—F. T. Fracker et al, New Britain, Conn. 9,883 to 9,886.—NECKLACE.—G. F. Gleason, Newark, N. J. 9,887.—CHAIRS, ETC.—H. F. Goodwin, Sheboygan, Wis. 9,888.—CHAIR FRAME.—A. G. Hofstatter, New York city. 9,889.—OIL CLOTHS.—J. Hutchinson, Newark, N. J. 9,890.—STOVES.—O. B. Keeley, Spring City, Pa. 9,891.—PIPE.—J. F. Starr, Jr., Camden, N. J.