

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

December 17, 1901,

AND EACH BEARING THAT DATE.

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

Table of inventions including: Abrasive material, machine for feeding, T. A. Kendrick et al.; Accounts, form for, A. L. Felch; Acid, making sulfuric, T. Meyer; Adding machine, J. J. Walsh; Air vent, A. Roesch; Alarm, see burglar alarm; Arbor press, E. E. Bartlett; Atomizer, A. C. Eggers; Autographic register, J. W. Sheehy; Automobile, F. E. Wilcox; Baling machine, hay or straw, R. F. McKaig; Baling press attachment, J. T. Smith; Barrel heater, E. E. Douglass; Bath apparatus, shower, J. M. Castle; Bearing and journal, C. Dietz; Bearing, roller, J. F. Schroeter; Bearing, roller, A. Featherstonhaugh; Bed and couch, combined, W. N. West; Bed bottom or mattress, spring, F. S. Sprague; Bedstead, G. Kubin; Bell, vehicle alarm, N. C. Wallentin; Belt, L. S. Buffington; Belt and buckle, reversible, G. L. Pierce; Belt, driving, C. O. Gehrckens; Belt holder, Van Wagner & Lemmon; Bicycle attachment, V. T. Palmer; Bicycle driving mechanism, C. P. Wolf; Bicycle propulsion, S. N. Hall; Binder, loose leaf, F. X. Muehl; Blind stop, J. W. Johnson; Blow off device, Rolston & Cramer; Blowing engine, A. Bailly; Boiler, M. F. Kenely; Boiler, J. P. Sneddon; Boiler cleaner, G. R. Ford; Boot or shoe trimming machine, E. F. Angell; Boring apparatus, deep, J. Vogt; Bowling alley, I. W. Wolf; Box fastener, N. B. Leaman; Brick machine, repress, J. Walker; Brick molding apparatus, W. C. McNaught; Brick truck, H. Zastrow; Brooches, pins, etc., automatic catch for, Therasth & Uhry, reissue; Brush holder, W. E. Baker; Buckle, L. H. Hawes; Buckle, swivel, G. L. Pierce; Buggy top brace, A. Seekt; Bung, tapping, H. Wendt; Burglar alarm, window, H. G. Clark; Button, preserving, E. de Meulemeester; Cage for live stock, drive, W. H. Baker; Camera, panoramic photographic, F. A. Brownell; Can, Hess & Clarke; Can top and closure, J. G. Gulick; Canal, pleasure, G. E. Pape; Candy machine, J. M. Demerath; Canister, tea, G. S. Macduffy; Canning factory conveyor, F. W. Stutt; Car coupling, M. A. Brown; Car coupling, automatic railway, L. Boirauf; Car door and platform railway, D. Johnson; Car, dumping, Kelly & Murphey; Car grain door, L. Beese; Car, poultry, J. B. Mockridge; Car wheel, H. C. Tazewell; Cars, automatic brake mechanism for railway, W. H. Bates; Carbonating liquids and filling bottles under pressure, apparatus for, J. Fletcher; Carbureter, O. Anderson; Carbureter, Carter & Zierlein; Carburetor, C. M. Kemp; Carriage running gear, R. O. Stutsman; Cartridge capping or decapping implement, A. Seidell; Casein, precipitating, M. Riegel; Cash register, E. F. Spaulding; Cash register key, J. P. Clear; Caster, A. H. Shock; Caster, C. McConner; Casting mold, R. F. Ludlow; Cement or similar materials, manufacture of, G. Warren; Chain link, G. Wilke; Chair and easel, combination, Schwellkert & Heinz; Check box, T. F. McCullough; Check row wire machine, G. W. Crozier; Chips from knots, etc., separating, N. M. Jones; Chuck, rock drill, Kay & Wearne; Churn, Drago & Darrow; Cigarette making, coin controlled, H. Bryan; Cigarette making machine, H. H. H. Robin; Cleat or holder for ropes or cords, G. C. L. Weguelin; Clipper or shearing tool, J. K. Stewart; Clock, intermittent alarm, S. Willcock; Clothes washer, M. E. Curtis; Coal cutting or similar machines, tool fastener for, L. W. de Grave; Coal separator, P. F. Haran; Coal stay, R. Herzog; Coins, apparatus for distinguishing genuine from spurious, E. Ewald; Collar, horse, W. O. Barnett; Combing machine, wool, W. E. Walsh; Condenser, surface, H. A. Callon; Cooking canned fruit, apparatus for, J. E. Bancroft; Coop, chicken, J. J. Conroy; Copies, apparatus for automatically producing and unlimited number of, F. E. P. Ehrlich; Corn cutter, sheller, and husker, combined, H. F. Dicks; Counter, J. F. Skirrow; Coupling manufacturing machine, D. A. Larkin; Cow tail holder, H. F. Bean; Crane, vertical charging, C. L. Taylor; Crate, collapsible, W. A. Gold; Crossing signal, quadruple relay, B. N. Parrish; Crusher, W. E. Johnson; Cultivating machine, orchard, W. H. Lyman; Cultivator, H. E. Irwin; Cultivator, W. H. Sheridan; Cultivator, W. S. Graham; Cultivator, E. Halman; Cultivator fender attachment, W. McKinnon; Cultivator, sulky, J. M. Donaldson; Cultivator, wheel, F. Bateman; Cultivators, operating and adjusting means for, E. Halman; Cup, see drinking cup; Curb, metallic, J. N. Harrison; Current meter, alternating, K. O. F. Schrottke; Curtain fixture, R. Caspar; Curtain fixture, Keeler & Duncan; Curtain pole and shade roller supporting bracket, combined, Johnson & Roberts; Cutlery, table, I. Hirsch; Cutting device, disappearing, E. M. Stone; Cutting of and dowel socket boring or tenon forming machine, E. P. Brains; Cyanid solutions, regenerating waste, W. Orr; Cyanids, recovering, W. Orr; Damper, stove, F. H. Beecher; Dental tool, Seeger & Derrick, reissue; Desk and seat, combined school, C. L. Neuenhoff;

Table of inventions including: Disinfecting apparatus, W. L. Mitchell; Display card, F. W. Hallock; Display lid, box, J. A. Krueger; Door check, L. E. Anderson; Door retainer, W. J. Smith; Draft appliance, F. M. Gutlebar; Draft equalizer, J. Latourner; Draft regulator, J. H. Diehl; Drawbar guide, bureau or other, Kinnear & Jonah; Drinking cup for poultry, T. Kelly; Dust pan, C. Benham; Dust pan, W. E. Kelly; Dye and making same, basic red violet, F. Runkel; Dye and making same, brown sulfur, C. Ris; Dye, blue, H. Polkier; Dye, blue acid, H. Polkier; Dyeing on the fiber, B. Heymann; Electric carriers, speed regulating device for overhead, A. S. Cliff; Electric circuits, apparatus for locating faults in, T. W. Varley; Electric conduit box, interior, J. H. Stahley; Electric conduit boxes, cover for interior, J. H. Stahley; Electric conduit terminal, W. F. Bossert; Electric furnace, C. A. Keller; Electric heater, E. E. Gold; Electric lock, H. Seewald; Electric switch, automatic, A. H. Adams; Electrical apparatus, T. B. Kinraide; Electrical circuits, locating faults in, T. W. Varley; Electrical conduits, junction box for, R. M. Thomas; Electrical distribution system, protective mechanism for, R. V. Chatham; Electricity, conversion of matter as a non-conductor of, J. M. Andra; Electrode, T. B. Kinraide; Electrostatic instrument, G. L. Adenbrooke; Elevator, see Grain elevator; Emery wheel cone grinding attachment, G. L. Jones; End gate and shoveling board, wagon, J. F. Hughes; Engine igniter, gas, J. Eckhard; Engine reverse gear, S. Kinross; Envelopes for addressing, means for attaching, M. H. Fried; Exhibitor, fabric, G. L. Heyman; Eyeglass nose clip, D. E. Weston; Eyelet, I. F. Peck; Eyeletting machine, I. F. Peck; Fabrics faced or coated with finely comminuted materials, manufacture of, H. Markus; Fan, suspended rotary, R. Lamb; Felly sawing machine, A. P. Harland; Fence, fabric, P. Reid; Fence post, H. B. Hittpas; Fibers, treating cocoa or like, W. H. L. Alfred; File, L. C. McNeal; File box or case, W. S. Grange; Filter, E. S. Hermes; Firearm, automatic, J. M. Browning; Firearm, revolving, D. B. Wesson; Fire extinguisher, C. M. Kemp; Fire knell, J. M. Wallis; Fireproof roof, etc., E. L. Heineich; Fish plate, A. M. Wilson; Fish trap, W. J. Inman; Flagpole halyard attachment, G. M. Griffith; Flash light apparatus, A. Hemsley; Floor beam framing machine, C. L. A. Doeppe; Flush tank and means for operating same, F. F. H. Engelhard; Foot, device for supporting the under part of the, J. S. Lowin; Frames, see Picture frames; Furnace, E. Garfield; Furnace, H. F. Brown; Furnace door opening device, A. Hazelton; Furniture rack, F. T. Dirksen; Game apparatus, chess, P. G. Toepfer; Game board, W. H. Snyder; Games of chance, machine for playing, G. McMullen; Garment hanger, H. A. Wright; Garment supporter, H. R. Barry; Gas engine, M. F. Bates; Gas from water and oil, device for separating, Newbold & Lowry; Gas generator, acetylene, W. C. Homan; Gas generator, acetylene, P. Margulies; Gas generator, acetylene, R. F. Carter; Gas igniter, A. Martini; Gas igniting device, automatic, A. Martini; Gas purifying, E. Theisen; Gear adjusting device, friction, C. A. Gilbert; Glass articles, making hollow, Blair & Hays; Glass articles, manufacturing hollow, Blair & Hays; Glass, leer for annealing plate, J. Schubert; Glass, making corrugated, C. C. Hartung; Glass polishing apparatus, L. H. Delloye; Grain elevator, portable, W. Watts; Granitoid walk laying machine, J. T. Demerath; Granular material, apparatus for handling, A. Smith; Graphophone, M. S. Ragsdale; Gravity lock, I. L. Garstide; Green house, conservatory, or other glass structure, W. Sefton; Grinder, edging or other refuse, E. E. Thomas; Grinding mill, Bercha & Chapman; Grinding mill and conveyor, R. Griffiths; Grinding mill, ball, F. Hundshagen; Grinding plates bolt connection for, D. E. Moran; Halter square and chin strap buckle, combined, W. P. Fishback; Hammock, water, C. L. Pruden; Harness, F. M. Hunt; Harness, A. J. Wilde; Harvester cutting apparatus, A. V. Perrine et al.; Harvester, grain, W. N. Whitley; Hat and cap, R. E. Bolter; Hat curling machine, W. J. McCall; Hay raking apparatus, H. Griffin; Head rest, J. R. Kirk; Hearses, weather joint for, W. A. Roe; Heat generator, M. W. Grace et al.; Heating apparatus, gas, E. W. T. Richmond; Hemming gage, M. A. Colton; High or low water alarm, G. E. Turner; Hinge, W. Koester; Hinge, spring, C. S. Locke; Hoe, W. L. Mitchell; Hoist, pneumatic, G. P. Steadman; Horn, feed or dinner, J. E. Spafford; Horseshoe, T. Conway; Hose tongs, J. A. Britton; Hose washer, J. A. Britton; Hot air furnace, W. P. Hartford; House moving device, C. McDonner; Hub, C. D. Hevenor; Hub, wheel, A. Patnode; Human body, apparatus for examining cavity in, N. E. B. Crane; Hydraulic motor, J. H. Snow; Ice cream disher, A. B. Rush; Ice cream, vessel or can for storing or transporting, W. Kestenbaum; Ice cutting machine, Butler & Hammond; Induction coil, D. H. Wilson; Inhaler, S. M. Kemp; Insulator, Duffy & Hershey; Insulator, electrical, A. F. Parks; Internal combustion engine, H. F. Wallmann; Ironing table, D. W. Paige; Jar, A. H. Doty; Journal box, J. Frey; Knife handle, E. F. Shaw; Knob and alarm bell, combined door, P. C. Plaster; Labeling machine, E. T. McKaig; Lace guard, M. Dutel;

Table of inventions including: Lacing attachment, J. C. Teifer; Lamp, A. L. Olsen; Lamp, acetylene gas, A. L. Buffington; Lamp burner, W. W. Seeley; Lamp, electric, C. Eschwe; Lamp, flash light, A. C. Lokor; Latch, J. C. Cuture; Latch, W. H. Taylor; Latch, sliding door, H. L. Ferris; Lathe, turning and boring, G. A. Ensign; Level, plumb, J. H. Quimby; Lightning conductors, earth conductors for, P. Immich; Limb, artificial, D. Devol; Line spreader, Griswold & McAlpin; Linotype machine, multiple magazine, C. A. Albrecht; Liquid applying device, W. Wiggins; Liquids, definite proportions, machine for mixing, E. Zahn; Lock or latch, J. Couture; Locomotive tender spring jack, portable, L. W. Chase; Machine table feeding and guiding mechanism, E. C. Mershon; Machinery stop mechanism, J. R. Scott; Magnesium carbonate, making, F. S. Young; Mail bag crane bag holder, W. W. Usery; Make and break device, J. V. A. Kimmy; Mainole frame, F. C. Pillsbury; Match holder, Anderson & Hjerpe; Match machine, W. W. Abbott; Matches, making, P. Bergsoe; Measurements for tailoring purposes, taking photographic, G. Moe; Merry go round, D. B. Good; Metal bending machine, Gardiner & Ranney; Metal blanks, regulating weight of, W. Johnson; Metal boxes, manufacture of hollow, J. B. Larkin; Metal cloth for purses, chateleine bags, etc., R. Schoch; Metal plate bending machine, G. W. Green; Middlings purifier, G. Walter; Middlings purifier and dust collector, A. Wolf; Milk can, E. C. Seaman; Mine door, J. C. Young; Miner's squib, H. J. Richards; Mining apparatus, E. Coleman; Mining machine, electric, E. C. Morgan; Mineral substances by the selective action of oil, separating, A. S. Elmore; Miter box, B. H. Otis; Moistening substances, apparatus for automatically, R. Timm; Mole trap, S. B. & J. F. Ritterhouse; Mosquito canopy, B. F. Chittress; Motion mechanism, reversible, W. K. Thomas; Motor starting device, E. P. Cowles; Music chart, F. F. Dawson; Music leaf turner, E. J. Moller; Music producing apparatus, E. R. Kleimchen; Musical instrument soundboard, stringed, A. Springer; Nest, poultry, J. N. Gaudreau; Newspaper magazine and book holder, A. H. Ballar; Nut lock, F. Freese; Nut lock, W. S. Kocher; Nut lock, H. J. Buell; Nut lock, J. H. Ferguson; Nut lock, G. H. Roberts, Sr.; Nut lock, Everett & Harris; Oil can, M. Masterson; Optical instruments for measuring the distance between the eyes, E. Donitz; Orange cleaning and grading machine, W. W. Jacobs; Ore concentrator, H. Unzicker; Packing device for shaft bearings, U. J. Van Bergen; Pail, milk, A. F. Didot; Painting machine, barrel, C. G. Wieland; Pancreas enzymes with heavy metal and obtaining same, compound of, W. Weber; Paper to printing machines, calendaring machines, folding machines, etc., apparatus for feeding sheets of, M. Koenig; Peeler and corer, apple, H. Warner; Pen, G. Beck; Pen case for holding pens, J. C. Hill; Pencil sharpener, D. R. Phillips; Phonograph, W. Pelsker; Phonographs, duplicate sound record cylinder for, A. N. Pettit; Phonographs, making duplicate sound records for, A. N. Pettit; Phosphates, manufacturing of soluble, G. de Chalmot; Photo display cabinet, A. T. Licholm; Photographic developing paper holder, E. A. Gilbert; Photographic films, covering rollers with, E. Rolfs; Photographic plate holder, Ashford & Newey; Piano backs, apparatus for assisting in making, C. H. Bromm; Picture frame, J. Babst; Pipe rack, M. F. Nicholson; Pipe for sewers, etc., A. L. Jones; Pipe wrench, F. E. Sands; Placket closure, R. M. Ush; Plane, S. R. & A. E. Rust; Planter and drill, J. H. Elward; Plow, H. Mahler; Plow attachment, W. W. Katterheimeich; Plow gage, W. H. Wilson; Plumb, C. D. Janssen; Plumber's fitting, Fruin & Walker; Pneumatic despatch tube system, E. A. Forryce; Pocketbook coin holder, C. Hering; Pole tip buffer or guard, cartage, E. G. Johnson; Polishing machine stand, M. Slotkin; Post, See Fence post; Power applying mechanism, H. Karross; Power transmitting mechanism, M. Slotkin; Precious metals from their solutions, precipitating and recovering, B. Hunt; Printing machine, Dawson & Slott; Printing machine, C. G. Hornung; Propelling mechanism, S. D. Hobson; Pulley lubricator, loose, F. J. Rippl; Pump engine, W. N. Sherwood; Pump, differential, E. M. Coryell; Punching bag platform, Yoerger & Schwegler; Punching machine feeding mechanism, W. F. Siegener; Purse or bag frame, V. vom Eigen; Purse or bag frame, A. F. Fuller; Rail chair and joint, B. E. Tripp; Rail cleaner, A. Romo, Jr.; Rail road, continuous, E. S. Eberlein; Rail joint bridge plate, F. E. Abbott; Rail systems, mechanism for raising contact shoes on third, S. H. Libby; Railway, electric, Bingham & Schlechtiger; Railway switch, G. L. Warren; Railway tie and fastener, metallic, T. F. Mason; Railway tie and means for securing track rails to same, metallic, C. Buhner; Receptacle or crate, W. O. Anderson; Refractory materials for building or other purposes, manufacture of, A. G. Salomon; Register, See Autographic register; Riding habit, J. A. Ontrak; Riding or cycling habit, combined, J. A. Ontrak; Road roller, steam, G. L. Heisler; Rope socket, L. C. Sands; Rotary engine, A. Guindon; Rotary engine, F. Meyer; Rotary engine, J. J. Unbehend; Rubber ball and manufacturing same, Berstorff & Meyer; Ruuder brake, J. S. W. Grenfell; Sand iron, R. F. Collins; Sash attachment, window, I. E. Tranter;

Table of inventions including: Sash pull and safety guard, combined, F. A. Chandler; Saw mills, log loader and stop for double cutting band, E. E. Thomas; Saw set, S. Halton; Saw setting machine, W. L. Holcomb; Sawing apparatus, F. Linquist; Scale, O. G. Ozias; Scoop board, A. N. Jordan; Scuttle, J. Formes; Seal, car, J. H. De May; Seal, car, S. F. Estell; Seal, car, Peirce & Foote; Seed hull press, cotton, W. P. Williams; Semaphore operating device, J. Shoecraft; Separable ring, Kellogg & Vale; Sewing machine bar stitch attachment, R. G. Woodward; Sewing machine buttonhole attachment, W. H. Hargraves; Sewing machine feed mechanism, E. Normancut; Sewing machine, hemstitch, A. J. A. Oesterreich; Sewing machine press bar clamping mechanism, R. G. Woodward; Sewing machine spool holder and tension device combined, A. I. Jacobs; Sewing machine tension device, Quist & Hoggan; Sewing machine thread controlling mechanism, H. A. Klemm; Sewing machine thread cutting attachment, J. M. Glickman; Sewing machine tuck folder, A. Laubscher; Shade adjusting device, window, J. H. Brown; Shade roller bracket, J. C. Wilson; Shafts or mandrels, device for fastening collars, pulleys, or the like on, A. E. Whitehouse; Sheet metal, corrugating, A. E. Brown; Sheet metal or material, dovetailed, A. E. Brown; Shutter operating device, window, E. L. Schwanengel; Sign supporting stand, S. L. Davis; Siphon, D. A. Kreider; Skewing or winding machine, J. H. Young; Skins, producing imitations of Crimean or Persian curl upon, S. Lewin; Sleeper, metallic, C. G. Vachon; Smoke consumer, R. Schulz; Smoke consuming and fuel saving device, A. Z. Germain; Soldering bottoms or tops of tin cans, etc., apparatus for, Besse & Lubin; Soldering iron, T. E. Lee; Sole trimming machine, E. E. Angell; Sound record and making same, E. Berliner; Sound records, apparatus for duplicating or multiplying, G. Bettini; Sound records, apparatus for producing, E. Berliner; Spinning spindle, W. G. Morrison; Spittoon, S. L. Feathers; Split machine, H. L. Beck; Spoke and tire tightener, Rew & McReady; Spool stand, E. Schottengels; Stacker, pneumatic, J. G. Taylor; Stamp mill, Parnall & Krause; Stamp, steam, E. S. Brett; Stand, see sign supporting stand; Stave jointing machine, J. P. Lust; Steam overheating apparatus, B. F. Bastian; Steel or iron sawing machine, cold, J. Hill; Steering engine, vessel, F. B. Turner; Stills, rectifier for spirit, R. Leyer; Stool, devotional, C. M. Dugan; Stop motion finger, C. L. Healey; Stove, gas, H. Adler; Stove, gasolene or gas, G. R. Moon; Stove generator, vapor, I. Kinsey; Stove or furnace, heating, E. J. Lansing; Stove or furnace, heating, O. P. Mason; Strop, swing, J. R. Torrey; Suit case clothes holding device, S. Kiefer; Swimming device, B. J. Hooper; Syringe nozzle, R. Parker; Teeth, fastening for artificial, A. Bischoff; Telephone cable fire protector, F. D. Saylor; Telephone system, selective, J. V. Stout; Telescope, water, W. M. Parrish; Templet for the manufacture of cuffs, etc., J. L. McDonald; Thill coupling, M. E. Covey; Thill coupling and detacher, G. H. Tatge; Thread cord, etc., finger device for cutting, J. H. Polhemus; Threshers, machine for retreshing the tailings in, M. S. Bowers; Threshing machine, J. Lindner; Tie plate, J. N. Hayes; Time alarm, incased electric, A. P. Schloss; Time check, F. H. Gilson; Time switch, automatic electromagnetic, J. S. Hays; Tire and means for securing it on wheels, wheel, P. W. Tillinghast; Tire, elastic, T. Gare; Tire repairing tool, B. J. Piquet; Tire, vehicle, E. C. & F. P. Whitaker; Toaster, bread or other, Z. T. Hall; Torch, M. M. Carr; Torpedo, railway, M. M. Carr; Toy for playing at target marbles, E. Bauer; Trace hitch, W. A. McCreary; Track layer's instrument, L. B. Clark; Traction wheel, G. A. Tauer; Tray holder, M. Holl; Trolley, T. McWilliams; Trolley catcher, C. B. Robertson; Tunnels, means for ventilating, Churchill & Wentworth; Type case, W. A. Watson; Type or matrices, apparatus for provisionally separating lines of, H. Burg; Typewriting machine, C. H. Shepard; Umbrella folding, J. M. Shaffer; Valve, automatic, W. J. Collins; Valve, boiler feeder, G. R. Ford; Valve, centrifugal machine, G. Engel; Valve for explosive engines, controlling, J. Walrath; Valve movement, steam engine, C. C. Worthington; Vegetable cutter, L. Ziegelmeier; Vehicle, G. J. Quinsler; Vehicle brake, automatic, J. W. Rowe; Vehicle fender, W. A. McCreary; Vehicle front gear, C. G. Streich, Jr.; Vehicle gear, H. F. Weeks; Vehicle gear, short turning, W. A. Koon; Vehicle, motor, F. F. Dorsey; Vehicle, motor, J. T. Hill; Vehicle spring draft attachment, S. V. Graves; Vehicle, steam propelled, S. Straker; Vehicle wheel, R. O. Stutsman; Vehicle wheel, roller bearing, M. G. Bunnell; Vehicle, feeder for motor, W. J. & G. Lane; Vending machine, coin controlled, D. A. A. Buck; Vending machine, coin operated, M. B. Mills; Viscose, preparing, C. N. Waite; Vise, carpenter's floor, W. J. Young; Wagon brake, G. W. Sutton; Wagon, dumping, M. M. Collins; Wall hange, W. A. Russell; Warp threads, means for correcting improper registry of partly-colored, H. Hardwick; Warming machine, W. J. Garlick; Washer, see clothes washer; Watch plate, R. L. Peabody; Water closet, Reid & Hammann; Water tube boiler, H. Garbe; Water tube boiler, J. Q. A. Moore; Weather strip, C. Vose; Weighing apparatus combined with a barrow, David & Trophee; Welding rings, rolls for, G. W. La Voo; Whiffletree evener, R. P. Brigham; Whistle, bicycle alarm, L. L. La Mere; Wick, lamp, H. Sarafan; Window, J. Caesar; Wire fabric, machine for making corded, J. F. Gail;

(Continued on page 437)

WOOD or METAL Workers

Without Steam Power should use our Foot and Hand Power Machinery. Send for Catalogues.

A—Wood-working Machinery, B—Lathes, etc.

SENECA FALLS MFG. CO.
695 Water St., Seneca Falls, N.Y.



ENGINE & FOOT TOOLS SHOP OUTFITS

LATHES. SEBASTIAN LATHE CO. CINCINNATI, O.

ELECTRO MOTOR, SIMPLE, HOW TO MAKE.—By G. M. Hopkins. Description of a small electric motor devised and constructed with a view to assisting amateurs to make a motor which might be driven with advantage by a current derived from a battery, and which would have sufficient power to operate a foot lathe or any machine requiring not over one man power. With 11 figures. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 641. Price 10 cents. To be had at this office and from all newsdealers.

WORKS LIKE LIGHTNING

ELASTIC ROTARY BLOW RIVETING MACHINE riveting together various articles of Hardware, Mechanics' Tools, Bicycle Chains, Sewing Machine Attachments, Agricultural Implements, etc., at the rate of 1,000 blows per minute. The famous


has no equal of its kind and is a boon to every workshop and factory in the world. Six sizes 1/16 to 3/4 inch.

The F. B. Shuster Co. NEW HAVEN, CONN. U. S. A.

THE 2 1/2 H.P. WEBER JUNIOR PUMPER

has a capacity of 50 gallons 125 feet and 100 gallons 87 feet. Equals 20 men pumping water. All complete ready to attach to pump. Uses gasoline in proportion to water pumped. Weight 800 lbs. Engine speed 175 revolutions per minute. Can be used for other power purposes. Simple, safe and economical. Outside dimensions 9 ft. long, 3 ft. wide, 5 ft. high. Capacity, 25 gallons per minute 25 feet.

Weber Gas and Gasoline Engine Co.,
P. O. Box 1114a.
Kansas City, Mo.



CONTROL OF FIRE.—VALUABLE PAPER on fire extinguishment. SCIENTIFIC AMERICAN SUPPLEMENT 1134. Price 10 cents. For sale by Munn & Co. and all newsdealers.

THE MIETZ & WEISS KEROSENE and GAS Engine

burns KEROSENE cheaper and safer than gasoline. Automatic, simple, reliable. No electric battery or flame used. Perfect regulation. Belted or directly coupled to dynamo for electric lighting, charging storage batteries, pumping and all power purposes.

A. MIETZ,
128-128th Street, New York.

Awarded Gold Medal Pan-American Exposition, Buffalo, 1901.



The "Wolverine" Three Cylinder Gasoline Marine Engine.

The only reversing and self-starting gasoline engine on the market. Lightest engine for the power built. Practically no vibration. Absolutely safe. Single, double and triple marine and stationary motors from 2 to 30 H. P.

WOLVERINE MOTOR WORKS,
Grand Rapids, Mich.



GERE GASOLINE ENGINES

SIMPLEST BOAT ENGINES MADE
CABIN—OPEN BOATS
ENGINE CASTINGS, BOAT FRAMES
GEO. HIGERT, YACHT LAUNCH Wks.
GRAND RAPIDS, MICHIGAN.

NEW CAT FOR 4 STAMPS



ACETYLENE GAS AND CARBIDE OF Calcium.—All about the new illuminant, its qualities, chemistry, pressure of liquefaction, its probable future, experiments performed with it. A most valuable series of articles, giving in complete form the particulars of this subject. Details of furnaces for making the carbide, gas generators, gasometers, burners, etc. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 998, 1004, 1007, 1012, 1014, 1015, 1016, 1022, 1035, 1038, 1057, 1064, 1071, 1072, 1073, 1083, 1084, 1085, 1104, 1107, 1113, 1132, 1149, 1150, 1203, 1204, 1206 and 1209. Price 10 cents each, by mail, from this office, and all newsdealers.

NEW BINOCULARS.

(The Triöder.) Small as an opera glass. More powerful than the largest field glass. Send for Circulars.

QUEEN & CO.
Optical and Scientific Instrument Works,
1010 Chestnut Street,
NEW YORK: 59 Fifth Ave. PHILADELPHIA, PA.



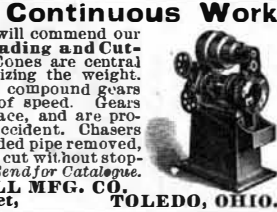
AUTOMATIC APPFEL-MURDOCH COMPANY, BATTERY HYDROMETER

Chicago, Ill.

For Heavy Continuous Work

every machine shop will commend our **Power Pipe Threading and Cutting Machine.** Cones are central over machine, equalizing the weight. Within the cones are compound gears giving six changes of speed. Gears require no extra space, and are protected from dust or accident. Chasers can be opened, threaded pipe removed, another inserted and cut without stopping machine. Send for Catalogue.

THE MERRELL MFG. CO.
501 Curtiss Street, TOLEDO, OHIO.



Now is the time to subscribe to the **SCIENTIFIC AMERICAN** for the year 1902
Subscription Price, - - \$3 a Year
3 Months Trial, 50 cents

TELESCOPES

W. & D. MUDGEY,
BAYONNE CITY, N. J.



Wire stretcher, M. D. Ferrin.....	689,174
Wire tightener, L. F. Tarbell.....	689,333
Wood impregnating apparatus, G. F. Lebioda	689,317
Wood preserving, O. Chamute.....	689,932
Woodworking machine, R. Schleicher.....	689,927
Wrapper, reversible mailing, G. Schutes.....	689,131
Wrench, J. W. Suidter.....	688,896
Zinc from lead, removing, Barton & McBhie.	689,275
Zither, lyre, V. Eckhart.....	689,297

DESIGNS.

Bottle, F. F. Garrard.....	35,443
Buckle, B. F. Hecht.....	35,441
Button, cuff, M. Wetzel.....	35,440
Candelabrum, S. W. Babbitt.....	35,453
Clothespin, A. Smith.....	35,442
Drill bit, Getchell & Jackson.....	35,447
Fencing, wire, Dwiggin & Swank.....	35,461
Hose rack frame, E. Cliff.....	35,452
Insulator, electric wire, T. F. King.....	35,462
Milling machine frame, J. Becker.....	35,448
Milling machine upright, horizontal, J. Becker	35,449
Range, portable, T. I. Rankin.....	35,454, 35,455
Stove, cooking, T. I. Rankin.....	35,456, 35,457
Stove, heating, T. I. Rankin.....	35,458 to 35,460
Tool, hand, J. L. Clements.....	35,446
Toy hoe and rake, H. T. Kingsbury.....	35,444
Toy rake head, H. T. Kingsbury.....	35,445
Velvet smoother, H. Kendstrom.....	35,451
Wrench, hub, A. P. Smythe.....	35,450

TRADE MARKS.

Antiseptic ointment and powder, Aseptinol Mfg. Co.....	37,477
Boots and shoes, leather, W. S. Nesmith.....	37,465
Cigars, Cuba Rica Tob. Co.....	37,471
Coats and shirts, Heidenheim, Levy & Co.....	37,463
Eau-de-cologne, soaps, water, and lotions for toilet purposes, Naalooze Vennootschap Eau de Cologne Fabriek Voorheen J. C. Boldoot.....	37,469
Envelopes and letter sheets, coin mailing, Kimsey Manufacturing Co.....	37,466
Metals, base, Ajax Metal Company.....	37,480
Paper, wrapping and toilet, Albany Perforated Wrapping Paper Co.....	37,467
Photographic developers, Farbenfabriken of Elberfeld Co.....	37,468
Remedies, certain and proprietary, Doull Brothers.....	37,474
Remedy for certain named diseases, W. C. Alpers.....	37,475, 37,476
Sharpening implements for scissors, shears, and cutlery, W. H. Diggs.....	37,479
Shoes, R. B. Haaker.....	37,464
Syrup, flaxseed, M. Berube.....	37,473
Throat bands for the cure of diseases of the throat, Egyptian Mfg. Co.....	37,472
Tobacco, cigarettes, cigars, and snuff, smoking and chewing, M. C. Wetmore Tobacco Co.....	37,470
Tuning instruments, Tunella Co.....	37,478

LABELS.

"Beckwith's Wonderful Toothache Cure," for a medicine, T. Beckwith.....	8,855
"C. E. Mull's Perfect Manhood Remedy," for a medicine, C. E. Mull.....	8,854
"Davy's Sparkling Pop," for a beverage, J. Davy.....	8,846
"King Edward," for whisky, John Dewar & Sons.....	8,848
"Lin-Menthis Greene," for a liniment, E. R. Greene.....	8,849
"Mermaid Genuine Pain Expeller," for a medicinal preparation, Mermaid Genuine Pain Expeller Co.....	8,851
"Nature's Remedies," for medicinal preparations, Warner Medical Co.....	8,852
"Pepto-Lac Improved Kumiss," for kumiss, Acme Pharmaceutical Co.....	8,845
"Rheumaticura," for a medicine, Rheumaticura Co.....	8,853
"St. Emilion," for a wine, J. Groetsch.....	8,847
"Tupelo," for salve, G. E. Thompson.....	8,850

PRINTS.

"Hill's Cascara Quinine Bromide," for a medicine, Gray Lithograph Co.....	437
"Orange Beauty," for shoes, Hanford & Adams.....	436

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 5 cents, provided the name and number of the patent desired and the date be given. Address Munn & Co., 361 Broadway, New York.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list. For terms and further particulars address Munn & Co., 361 Broadway, New York.

NEW BOOKS.

MODERN ELOQUENCE. A Library of Famous After-Dinner Speeches, Classic and Popular Lectures, the Best Occasional Addresses, Anecdotes and Illustrations. Edited by Hon. Thomas B. Reed, editor-in-chief, assisted by Hon. Justin McCarthy, M.P., Rossiter Johnson, Albert Ellery Bergh. Philadelphia: John D. Morris & Company, 1101 Chestnut Street. 1901. 10 volumes, 6 3/4 x 10 inches. 4,500 pages.

Oratory is far from a lost art, and we have to-day some of the most brilliant and witty speakers that have ever graced public occasions, but the oratory of the century just passed has also to be considered, and these famous speeches, addresses and lectures are worthy of all attention. The editors of the sumptuous volumes before us have worthily performed a singularly difficult task. They have sat down soberly to collect and publish in enduring form the ablest and most representative oratory of modern time. No experiments have been tried, and whatever is in the library is of proved value and interest. It includes after-dinner speeches, famous lectures, addresses, stories, anecdotes, reminiscences and repartee of banquet hall and legislative forum. Everything which is used is in its entirety. The "Committee of Selection" includes well-known names and the editors are of world-wide reputation. The books are specially well made and the set is an imposing one.

DRYING BY MEANS OF AIR AND STEAM. By E. Hausbrand. London: Scott, Greenwood & Co. 1901. 16mo. Pp. 72, folding plates. Price \$2.

The literature upon drying is very scant, so that the present treatise with its valuable tables and diagrams will be most warmly welcomed. The author has furnished the means of ascertaining the consumption of air and heat in any drying apparatus.

Williams' Shaving Soap.

SOLD EVERYWHERE

Sent by mail if your dealer does not supply you

Williams' Shaving Stick.....	25c.
Yankee Shaving Soap, (Round or Square), 10c.	
Luxury Shaving Tablet, - - - - -	25c.
Swiss Violet Shaving Cream, - - - - -	50c.

Williams' Shaving Soap (Barbers'), 6 Round Cakes, 1 lb., 40c. Exquisite also for toilet.

(Trial Size) Williams' Shaving Tablet for 2c. stamp Stick "10c."

The only firm in the world making a specialty of SHAVING Soaps

THE J. B. WILLIAMS CO., Glastonbury, Ct.
LONDON PARIS DRESDEN SYDNEY

ROTARY ENGINES.—ARTICLES ON this type of engine, giving many details and illustrations, are contained in SUPPLEMENT Nos. 1125, 1126, 1193 and 1309. Price 10 cents each. For sale by Munn & Co. and all newsdealers.

A TRUSGOTT BOAT

Simple, Safe, Reliable, Speedy.



Built either cabled or open in sizes from 16 to 100 feet in length. For catalog giving full information write

Truscott Boat Mfg. Co.,
ST. JOSEPH, MICH.

Narrow Gauge Railways

RAILS, SWITCHES, TURNTABLES, WHEELS, AXLES, LOCOMOTIVES, Etc.

CARS of every description, and all Accessories Always in Stock

ARTHUR KOPPEL,
66-68 Broad Street, New York.
Send for Catalogue.



MATCH FACTORY.—DESCRIPTION of an English factory. SCIENTIFIC AMERICAN SUPPLEMENT 1113. Price 10 cents. For sale by Munn & Co. and all newsdealers.

FOR GUNSMITHS, TOOL MAKERS, EXPERIMENTAL & REPAIR WORK, ETC.

From 9-in. to 18-in. swing. Arranged for Steam or Foot Power, Velocipede or Stand-up Treadle.

Send for Catalogue.

W. F. & JNO. BARNES CO.
2999 Ruby St., Rockford, Ill.



B. F. BARNES ELEVEN-INCH SCREW CUTTING LATHE

For foot or power as wanted. Has power cross feed and compound rest. A strictly high grade, modern tool. Ask us for printed matter.

B. F. BARNES COMPANY,
Rockford, Ill.



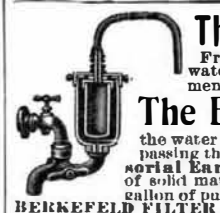
The Deadly Faucet!

From it comes the germ-laden water carrying with it all the elements of disease, but if you use

The Berkefeld Filter


the water will be thoroughly purified in passing through the cylinders of infusorial earth which retains every atom of solid matter. Easy to clean. Yields a gallon of pure water in 4 minutes.

BERKEFELD FILTER CO., 4 Cedar St., New York.



NICKEL AND Electro-Plating Apparatus and Material.

Hanson & VanWinkle Co.,
Newark, N. J.,
136 Liberty St., N. Y.,
30 & 32 S. Canal St., Chicago.



Patents, Trade Marks, COPYRIGHTS, etc.,

Address **MUNN & CO.,** Solicitors of Patents.
Office of the SCIENTIFIC AMERICAN
361 Broadway, New York.
Branch Office: 625 F St., Washington, D. C.
Hand-book Sent Free on Application.

PRACTICAL X-RAY WORK. By Frank T. Addyman, B.Sc., F.I.C. London: Scott, Greenwood & Co. 1901. 12mo. Pp. 207. Price \$4.

The author just remarks in his preface that he encountered two difficulties in trying to give a description of X-ray work which would be of use to medical men. The first was that some, not all, are well acquainted with the elements of electrical science, and the second is that the use of a Crookes tube cannot be learned by reading a book. The author has produced a most remarkable treatise on the subject, every branch and detail being considered. With the aid of this book medical men should have no difficulty in using the X-rays with good results. The radiographs which illustrate the text are numerous and of excellent quality.

WIRELESS TELEGRAPHY. A Popular Exposition. By W. de Tunzelmann, B.Sc. London: Office of Knowledge. 1901. 16mo. Pp. 104. Price 60 cents.

The author's object in presenting this little treatise is two-fold. In the first place he has attempted to set forth the history and practice of wireless telegraphy in a manner adapted to any reader who is interested in knowing something of the historical development and practical working of electric telegraphy without the aid of connecting wires to guide the message between the communicating stations. In the second place, he has attempted the far more difficult task of providing readers who know little or nothing of the electrical theory with the means of knowing something about the physical facts upon which the practice of etheric telegraphy is based.

METAL-WORKING TOOLS AND THEIR USE. By Percival Marshall. London: Dawbarn & Ward, Ltd. 1901. 12mo. Pp. 73. Price 20 cents.

A useful little handbook describing in detail the principal metal-working tools with especial reference to the use of amateurs.

KEY TO THE CLASSIFICATION OF THE PATENT SPECIFICATIONS OF GERMANY, AUSTRIA, DENMARK AND NORWAY IN THE LIBRARY OF THE (BRITISH) PATENT OFFICE. London: The Patent Office. 1901. 18mo. Pp. 74. Price 6d.

This little volume will greatly assist those interested in making searches through the specifications of these countries.

THE TELEPHONE SYSTEM OF THE BRITISH POST OFFICE. By T. E. Herbert. London and New York: The Macmillan Company, Whitaker & Co. 1901. 16mo. Pp. 218. Price \$1.

Those who are interested in the British telephone system will find in this work a very thorough and important treatise on the subject, written by an English officer of the Postal Telegraphs.

SUBJECT LIST OF WORKS ON CHEMISTRY AND CHEMICAL TECHNOLOGY IN THE LIBRARY OF THE (BRITISH) PATENT OFFICE. London: The Patent Office. 1901. 16mo. Pp. 105. Price 6d.

An admirable bibliography of chemical literature which is sure to prove of the greatest possible value, not only to those interested in patents, but in general chemical literature. It is, of course, nothing like as extensive as the work by H. C. Bolton, published by the Smithsonian Institution, but at the same time for a brief bibliography it is excellent.

FRUIT HARVESTING, STORING, AND MARKETING. Making a Practical Guide to the Picking, Sorting, Packing, and Marketing of Fruit. By F. A. Waugh. New York: Orange Judd Company. 1901. 16mo. Pp. 224. Price \$1.

The last twenty years has shown a remarkable development in agricultural literature, the books which are offered for sale being eminently practical. The present book is no exception to this rule. It tells the fruit grower how not only to grow the fruit, but also how to sell it. The second of these problems is fully as difficult as the first, but with the aid of Mr. Waugh's treatise the task is greatly simplified. The author has a national reputation as a horticulturist.

CURRENCY AND BANKING IN THE PROVINCE OF MASSACHUSETTS BAY. By Andrew McFarland Davis. Two vols. Part I., Currency. Part II., Banking. 8vo. Pp. 473, plates 332. Price \$4.

The subject is one which will interest all who are in any way identified with economics or with the historical aspect of the subject. The numerous plates give facsimiles of colonial currency, bills, notes and other instruments, reproduced from the originals. It is a work which no historical library can afford to be without. The author has delved deep into the archives and statutes and has produced a book of sterling value, and withal entertaining.

HANDBOOK ON PETROLEUM. For Inspectors under the Petroleum Acts. By Capt. J. H. Thomson and Boverton Redwood. London: Charles Griffin & Company, Ltd. Philadelphia: J. B. Lippincott Company. 1901. 8vo. Pp. 298. Price \$3.

While our laws relative to the transportation and storage of petroleum are different from English laws, at the same time it will prove of great value to those engaged in the storage, transportation, distribution and industrial use of petroleum and its products and calcium carbide, with suggestions on the construction and use of mineral oil lamps.