

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

March 31, 1891.

AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

(2949) G. P. asks: Can you please tell me how to mend hole in rubber foot ball? A. See answer to query No. 2903. To resist the pressure, the patch should be inside. Success is doubtful.

(2950) G. H. R. asks: 1. Will you please give the chemical reactions in the development and fixing of a dry plate with pyro developer? A. The developer reduces to a metallic state the bromide of silver in the film which has been acted upon by light. The fixing bath dissolves out the bromide of silver unacted upon either by light or the developer. 2. What will remove pyro stains from the fingers? A. A solution of citric acid—20 grains to one ounce of water will remove the stains. 3. What is process of manufacture of celluloid? A. 100 parts camphor are mixed with 42 to 50 parts pyroxylene (nitro-cellulose) and pressed or rolled hot. Another method dissolves 50 parts nitro-cellulose in 100 parts alcohol with 25 parts camphor and evaporates to the consistency of jelly. By exposure to the air in thin plates it hardens.

(2951) W. L. R. asks: 1. What preparation or solution can I use to make a pair of buckskin moccasins waterproof? A. Use grease or leather stuffing. It will change the nature of your buckskin. 2. I put a Cramer plate in a solution of alum and water to take out the frills. The frills came out, but on drying the plate, it left the alum on it. I washed it in running water for hours, but it would not come off. What will take it off without injury to the plate? A. The particles of alum may be rubbed off with a tuft of wet absorbent cotton. If they are firmly fixed in the film, there is no easy way to remove. Possibly by soaking the negative in a weak solution of water and sulfuric acid, the deposit may be dissolved out. 3. A recipe for making magnesium cartridges to be operated by a fuse like the Scoville magnesium cartridges? A. An effective magnesium compound is made by mixing equal parts of nitrate of barium and magnesium powder. Put it in a paper case and connect with a slow powder fuse, which can be had from manufacturers of powder.

(2952) S. H. H., Jr., says: I wish to make a small camera for taking photographs four inches high, three wide and about two deep. Would you please tell me the size and kind of lens to use in making a camera of the above size? A. You need to use a two inch equivalent focus, Morrison or Gray wide angle lens. The diameter of the lens would be about half an inch. 2. How can I secure a light background in taking photographs? A. A common plain blanket hung up behind the object will give you a light background, or use very large sheets of manila paper.

(2953) A. C. S. asks: How can tallow be softened or refined so that it may be used as a lubricant for the working parts of a microscope? The opticians use the material, which is admirably adapted to the purpose, but I have been unable to learn how it is treated, but after treatment the tallow is almost as soft as lard. A. Tallow can be softened by mixture with oleic acid or with some neutral oil such as sweet almond oil. Treatment with borax and water hot is good as a refining process.

(2954) P. C. asks: 1. How can I find the weight of a casting of common gray iron? I have the full size pattern of soft pine at hand. A. Multiply weight of pattern by 14. 2. In an electro-motor of any given size, what increases the efficiency—more winding on the field magnets or more divisions on the armature? A. It is good practice to use plenty of divisions on the armature. Its winding must be based on the difference of potential between its terminals and the desired power. 3. Are not all electro-motors series wound? A. No. They are often shunt and compound wound. 4. How would lengthening or shortening armatures (of motors) of the same number of coils and same diameter of core affect the efficiency of the motor? A. No direct effect can be predicated. In a general sense the armature core should be of rather large diameter. 5. In four field magnets faced and bolted together would the lines of magnetic force be perfect, so as to give twice the pull on the armature that one pair of magnets would give? A. A single large electro-magnet is far more advantageous than a combination of small ones.

(2955) J. J. asks for a filling, black and other colors, such as is used for brass signs, something that will harden and stand exposure to sun and weather, also the cleaning of the brass with acids and by rubbing. A. Melt together in a clean iron pot two parts each of best asphaltum and gutta percha, stir well together, then add one part of powdered gum shellac. It should be used hot. It may be mixed with small, vermilion or other pigment if desired.

(2956) L. M.—If you use well insulated wire and wind carefully, you may omit the shellac varnish altogether, or you may soak the coil in very thin varnish after it is completed, allowing it several days in which to dry.

(2957) W. W. D. asks if double or single cotton-covered wire is used to wind 8 light dynamo, also if the two rods down side are of brass or copper. A. Double-covered wire is preferable wherever it can be used. The rods are of copper.

(2958) A. B. T. asks what will stick the amber mouth piece of a pipe together; it is broken about $\frac{1}{6}$ inch from the end. I have tried many kinds of glue, but cannot stick it; the heat or moisture of the mouth seems to soften the glue. A. Moisten with linseed oil and press together after heating. Too much heat will ruin the amber, and too little will not cause adhesion.

TO INVENTORS.

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Dust collector, A. Hunter.....	449,533	Measurements of time, space or quantity, apparatus for recording, H. Abbott.....	449,192
Dye, black, J. Schmid.....	449,622	Meat cutter, S. T. Jull.....	449,585
Dynamo regulator, B. H. Fisher.....	449,245	Meat cutter, rocking, J. Tritz.....	449,451
Eaven-trouly machine, W. A. Colsten.....	449,107	Mechanical movement, J. Z. Roraback.....	449,334
Egg beater, A. White.....	449,187	Metal can, Reiset & Waaber.....	449,186
Egg carrier, T. E. Perkins.....	449,186	Metal, liquid of and apparatus for reducing, W. Wakely.....	449,145
Electric battery, thermo, J. N. Webb.....	449,289	Meter, See Pison meter.	
Electric circuits, fuse for, F. W. Maxstadt.....	449,289	Metricone, A. G. Pinfold.....	449,635
Electric contact, O. J. Dep.....	449,302	Mill, See Feed mill. Grinding mill, Rolling mill.....	
Electric contact protector, R. Varley, Jr.....	449,302	Mill and power mechanism, E. C. Griffin.....	449,118
Electric currents, regulating apparatus for, W. Lahmeyer.....	449,248	Mixing apparatus, R. Smith.....	449,250
Electric fixtures, hanger board for, G. H. Lean.....	449,266	Monkey wrench, V. J. McDonnell.....	449,129
Electric light shade, J. W. Easton.....	449,407	Motor, See Spring motor.	
Electric lighting system, G. Gibbs.....	449,474	Mucilage holder and spreader, J. H. Porter.....	449,234
Electric switch, H. T. Clark.....	449,282	Muffler, steam, C. E. Healy.....	449,120
Electric switch, W. White.....	449,158	Multiple expansion engine, H. Dunsmuir.....	449,284
Electric switch box, J. H. Dean.....	449,352	Musical instrument, E. Freiner.....	449,439
Electric wires, binding post for, H. P. Ball.....	449,307	Musical instruments, keyboard playing attachment for, J. P. Becker.....	449,396
Electric wires, covering, T. W. Norman.....	449,165	Needle points machine for polishing, W. H. Dayton.....	449,313
Electric wires, elastic metallic pole for, C. A. Lieb.....	449,125	Newspaper cover, J. Davis.....	449,210
Electro-magnetic device, M. G. Crane.....	449,706	Nut lock, F. M. Difany.....	449,211
Elevator, See Coal or grain elevator. Package elevator. Portable elevator. Water elevator.....	449,611	Oil, tanner's, W. B. Davis.....	449,437
Elevator operating system, electric, W. Baxter, Jr.....	449,611	Oils, refining, J. D. Edwards.....	449,213
Engine, See Gas engine. Multiple expansion engine.....		Opera glass holder, J. U. Gerow.....	449,531
Engines, converting device for steam, F. W. Leffel.....	449,162	Ordnance breech-loading, H. Schneider.....	449,335
Enveloping device for maintaining the gum on, E. E. Kingsley.....	449,490	Organs, Roosevelt, F. B. Morse.....	449,192
Evaporation naphtha, apparatus for, J. W. Evans.....	449,415	Organ, Roosevelt, F. B. Morse.....	449,177
Extracts, apparatus for making, S. C. Thrall.....	449,603	Organ, domestic, J. Watson.....	449,590
Gyrglasses, W. C. Westaway.....	449,653	Overshoe, M. S. Varley.....	449,440
Bicycles, J. B. Evans.....	449,131	Package elevator, R. Van Heukel.....	449,453
Bicycles, oil can holder for, L. H. Bannister.....	449,461	Package making and filling machine, H. E. Smyser.....	449,275
Blacking, shoe, G. P. Tipton.....	449,275	Pad, See Harness pad. Hoof pad. Truss pad.....	
Blasting submarine, T. Puskas.....	449,272	Paging machine, S. K. White.....	449,304
Boat, See Separable boat.		Paper cutting machine, C. R. Ely.....	449,152
Boiler, See Sectional boiler. Steam boiler. Tubular boiler.....		Paper holder and cutter, roll, W. G. Haas.....	449,158
Boilers, machine for calking seams and joints of steam, G. J. & C. H. Hoskins.....	449,286	Paper holder and cutter, roll, E. E. Staninger.....	449,501
Bookbinders machine, Smith & Arnold.....	449,535	Pens, fountain, H. T. Reed.....	449,265
Boot or shoe stay, W. A. Neely.....	449,167	Pencil sharpener, slate, E. R. Lovett.....	449,625
Boot soles, etc., machine for channeling and trimming, J. B. Hadaway.....	449,247	Photograph erasing attachment, P. T. Dodge.....	449,349
Bottle, metal cased, Z. T. Hall.....	449,118	Piano action, S. R. Perry.....	449,283
Bottle, nursing, C. B. Balston.....	449,275	Piano action, upright, G. M. Guild.....	449,583
Bottle scraper, mucilage, M. C. Rosnecht.....	449,285	Piano tuning apparatus, A. Felldin.....	449,409
Bicycle, J. B. Evans.....	449,531	Picture or mirror frame hanger, D. G. Rulon.....	449,496
Blacking, shoe, G. P. Tipton.....	449,275	Pill machine, J. A. McFerran.....	449,124
Blaasting, T. Puskas.....	449,272	Pipe coupling, F. J. McGuire.....	449,238
Boat, See Separable boat.		Pipe coupling, H. B. Nichols.....	449,666
Boiler, See Sectional boiler. Steam boiler. Tubular boiler.....		Pipe forming machine, J. Hartley.....	449,112
Boilers, machine for calking seams and joints of steam, G. J. & C. H. Hoskins.....	449,286	Pipe tester, close, and clean-out, W. P. O'Brien.....	449,163
Boots, manufacture of hooped, H. H. Higham.....	449,413	Pipes, self-adjusting frost protector for ventiat.....	
Bracelet, C. Bachem.....	449,103	Piston meter, J. B. Boyd.....	449,199
Bracket, C. Porter.....	449,134	Planters, dropper guide for corn, A. P. Aldridge.....	449,100
Brake, See Car brake.		Platform, See Carr platform.	
Brewing malt liquors, B. W. Valentin.....	449,503	Pliers, T. F. Vandegrift.....	449,250
Bridges, safety guard for draw, H. J. Rohlf.....	449,176	Plow, J. A. McIver.....	449,565
Bridge bit attachment, A. Lobdell.....	449,163	Plow, G. W. Phinney.....	449,331
Bridge bits, making, Van Ness & Lewis.....	449,300	Plow, gang, J. & W. Pacerson.....	449,129
Broom, J. M. Meador.....	449,550	Plow, river channel, D. H. Solomon.....	449,184
Broom, stable or street, A. T. Gerike.....	449,440	Plows, weet attachment for, W. D. Crowell.....	449,465
Brown, brush, C. F. Murray.....	449,344	Plunger press, rebounding, T. J. Strait.....	449,161
Brown, cleaning and polishing, H. A. Webster.....	449,298	Pocket knife, W. Schmachtenberg.....	449,99
Brush handle, M. B. Hinds.....	449,478	Polishing cone, A. T. Good.....	449,217
Buildings, construction of, P. H. Jackson.....	449,523	Portable elevator and wagon unloader, R. S. Kirkpatrick.....	449,447
Burnisher, S. O. Tuerk.....	449,339	Post, See Fence post.	
Burner, See Gas burner. Hydrocarbon burner.....		Potato digger, D. B. Merrill.....	449,127
Butter jar, Kennedy & Harris.....	449,326	Press, See Baling press. Plunger press.....	
Cable grip, S. Schalk.....	449,189	Press delivery apparatus, S. G. Goss.....	449,156
Calendar, C. C. Kelly.....	449,541	Printing machine, card, J. Jordan.....	449,400
Calendar roll leader, R. McAlpine.....	449,535	Printing machine, chromatic, J. Michaud.....	449,123
Calipers and dividers, N. Marsh.....	449,165	Printing machine, perfecting, R. M. Hunter.....	449,146
Call and signal, station, Weaver & Brooks.....	449,505	Printing office apparatus, J. L. Knight.....	449,223
Case, See Metal can.		Printing press feed gauge, E. J. Meek.....	449,290
Cane, device for stripping leaves from sugar, R. Rohr.....	449,137	Protector, See Electric contact protector. Horse protector. Shoe protector. Shovel protector.....	
Car and pipe coupling, combined, A. C. Grover.....	449,219	Pulley, See Stump pulley.	
Car brake, W. R. Seidera.....	449,630	Pulley split, J. B. Cornwall.....	449,608
Car brake, railway, J. M. Blondell.....	449,645	Pulp, apparatus for regulating the consistency of wood, Decker & Goebel.....	449,251
Car buffers, device for relieving the tension of, Schroyer & Thompson.....	449,388	Pulp, producing ground wood, E. F. Millard.....	449,586
Car, cattle, F. E. Canda.....	449,203	Pump, G. F. Beebe.....	449,607
Car coupling, P. B. Hand.....	449,253	Pump chain, B. H. Spence.....	449,598
Car coupling, E. F. Long.....	449,224	Pump piston, pneumatic, C. H. Robinson.....	449,533
Car coupling, F. Miller.....	449,638	Pump valve, A. J. Hopkins.....	449,533
Car door, G. G. Mowll.....	449,559	Punching machine, W. Frech.....	449,154
Car coupling, C. F. Murray.....	449,423	Rack, See Display rack. Feed, rack. Umbrella rack.....	
Car door, G. G. Mowll.....	449,423	Rail chair, A. Heyn.....	449,261
Car, double deck, stock, B. C. Hicks.....	449,621	Rail chair, W. A. Pearson, Jr.....	449,510
Car draught pole, horse, J. M. Blondell.....	449,646	Rails, fastener for fish plates for, J. S. Gary.....	449,115
Car draw iron, horse, J. M. Blondell.....	449,644	Railway, R. H. Little.....	449,126
Car dumping, W. T. Cooper.....	449,522	Railway conduct, electric, F. O. Blackwell.....	449,186
Car gear, railway, J. M. Blondell.....	449,643	Railway crossing street, V. A. Gardner.....	449,433
Car heating, W. L. Baker.....	449,458	Railway crossing track, G. S. W. Hildreth.....	449,477
Car platform freight, T. C. Tyrrell.....	449,458	Railway crossing track, G. S. W	

Stamp puller, W. Smith.....	449,396
Stamp puller spool, Cunningham & Funk.....	449,207
Sukkv, J. W. Kelley.....	449,542
Supporter. See Garment supporter.....	449,141
Suspenders, W. J. Stewart.....	449,141
Switch. See Electric switch.....	449,240
Switch tongue adjuster, I. Mowder.....	449,240
Swivel, H. E. Kelsey.....	449,324
String electro-therapeutic, E. Bartsch.....	449,442
Swing, self-inclining, Paterson.....	449,270
Telegaph transmitter, H. G. Robbins.....	449,174
Telephone, W. Humans.....	449,254
Telephone circuit and apparatus, J. J. Carte.....	449,106
Telephone sound transmitter, A. E. Schatz.....	449,180
Thermometer graduating machine, J. D. Hall.....	449,442
Thermometer printing machine, J. D. Hall.....	449,444
Thermometer tube filling apparatus, J. D. Hall.....	449,443
Thill coupling, F. N. Kelsey.....	449,367
Thill coupling, Rose & Thompson.....	449,235
Thrashing cylinder, C. Frantz.....	449,438
Thrashing machines, straw stacking attachment for, A. P. Miller.....	449,556
Tile building, J. Pajean.....	449,133
Tire, roofing, E. Bennett.....	449,391
Tire for vehicle wheels, C. Challiner.....	449,251
Tire for vehicles, rubber, A. Straus.....	449,502
Tire for wheels, rubber, Jeffries & Grant.....	449,650
Tire tightener, A. M. Reeves.....	449,234
Tobacco stick, T. H. Ellington.....	449,465
Toasting strips and booking machine, J. R. Williams.....	449,394
Tooled binding, S. P. Graham.....	449,245
Toy sounding, D. W. Watrous.....	449,146
Transom lifter, A. L. Peacock.....	449,426
Transportation, method of, W. C. Andrews.....	449,102
Trap. See Insect trap.....	449,394
Traps, inserting springs in, E. S. Hotchkiss.....	449,534
Trees, machine for budding, W. M. Rowell.....	449,591
Trimmer. See Band trimmer.....	449,394
Trough. See Water trough.....	449,394
Truck, electric motor, F. O. Blackwell.....	449,197
Truck for railway cars, Pfingst & Bemis.....	449,382
Truck for suspended cars, R. C. Forsyth.....	449,318
Truss pad, J. Garcia.....	449,473
Tubular boiler, down draught, D. V. O'Brien.....	449,381
Type to type bars, tool for clamping, H. Abbott.....	449,190
Typewriting machine, Clinton & McNamara.....	449,616
Typewriting machine, B. T. Mulligan.....	449,564
Typewriting machine, A. B. Reid.....	449,296
Typewriting machine, H. H. Unz.....	449,460
Typewriting machines, platen for, H. Abbott.....	449,395
Umbrella rack or stand, C. R. Risdon.....	449,383
Unloading apparatus, R. S. Kirkpatrick.....	449,448
Unfinished wood, household, S. Welch.....	449,147
Valve, ball cock, T. R. Keworth, Jr.....	449,351
Valve, center seal and by-pass, W. Crighton.....	449,351
Valve, cut-off, H. King.....	449,123
Valve for compound engines, starting, W. B. Yeo.....	449,457
Valve for expansion pipes, safety, Bryant & Crow.....	449,348
Valve for tanks, float, Beckman & Lubener.....	449,424
Valve, rotary, F. Schneider.....	449,181
Valve, steam engine, J. E. Waterous.....	449,504
Vat and churn, J. Hansen.....	449,321
Vehicle, convertible, G. H. & G. H. Mutton, Jr.....	449,365
Vehicle running gear, E. O. Pease.....	449,427
Vehicle seats, jointed iron for, G. H. & G. H. Mutton, Jr.....	449,419
Vehicle wheel, J. N. Clouse.....	449,205
Velocipede, J. Edelstein.....	449,111
Velocipede, T. B. Jeffery.....	449,220
Velocipede, J. O. Ratibun.....	449,383
Velocipede, A. W. Schieding.....	449,498
Vulcanizer, J. Fergus.....	449,470
Wagon beds, run iron for, G. A. Nelson.....	449,425
Wagon dumping, J. W. Dunham et al.....	449,212
Wash basin, J. R. Rice.....	449,245
Watch boy fastener, L. P. & N. Stout.....	449,465
Watch case, traveler, J. A. Lauten.....	449,370
Watchmaker's pliers, E. E. Coble.....	449,310
Water closet, portable, A. J. Niles.....	449,426
Water elevator, J. Faggoa.....	449,252
Water heating device, R. P. White.....	449,509
Water trough, B. Koeppe.....	449,481
Waterways, apparatus for scouring, E. G. Holden.....	449,479
Weather strip for freight car doors, W. R. Betham.....	449,399
Web fabrics, machine for guiding the edges of, L. Hollingsworth.....	449,623
Weighing machine, automatic, H. E. Smyser.....	449,276
Weighing mechanism, grain, S. E. Brown.....	449,402
Welding machines, burr preventer for electric, E. Thomson.....	449,357
Well sinking, expansion drill for, A. Cameron.....	449,613
Wells, groove cutting machine for oil or gas, J. L. Addison.....	449,459
Wheel. See Vehicle wheel. Wind wheel.....	449,394
Wheel scotching device, cart, E. Murgatroyd.....	449,269
Whimmetre, J. M. Blondell.....	449,647
Wind wheel, F. Miller.....	449,399
Wind wheel, M. C. Robbins.....	449,539
Winker attachment, M. Sansoucy.....	449,497
Wire, making seamless plated, I. F. Peck.....	449,428
Wire, manufacturing seamless gold plated, C. R. Smith.....	449,183
Wire, manufacturing seamless hollow, C. R. Smith.....	449,382
Wrapping paper, C. Y. Knight.....	449,124
Wrench. See Monkey wrench. Pipe wrench. Ratchet wrench.....	449,410
Wrench, H. Hammond.....	449,410
Wrench, G. L. McCauley.....	449,537
Wring roller, C. A. Kohl.....	449,545

TRADE MARKS.

Cigars, J. Alvarez & Co..... 19,262
Cigars, S. Azcano y Meana..... 19,263
Cigars, V. Bustillo & Brother..... 19,264, 19,267 to 19,272
Cigars, J. S. Murias & Co..... 19,266
Cigars, J. Villamil & Co..... 19,266
Coal, cannel, Macfarlane & Morde..... 19,239
Detergent composition resembling soap, Hyde Carpet Cleaner and Moth Exterminating Co..... 19,259
Hair restorative, J. T. Fay..... 19,242
Hose supporters, G. Frost & Co..... 19,235
Liniment, P. M. Murray..... 19,233
Meat, C. Oskamp..... 19,234
Paint, black, H. S. Fassett & Co..... 19,243
Pills, E. Krauth..... 19,243
Porcelain ornaments and toilet and table ware, Haviland & Co..... 19,257, 19,258
Remedy for blood and liver diseases, D. G. Potts..... 19,260
Remedy for rheumatism, neuralgia, and like diseases, J. D. Groves..... 19,231
Rice, prepared, Crystal Rice Milling Company..... 19,241
Seed, bird, French, Richards & Co..... 19,246
Seeds, herbs, plants, trees, and shrubbery, J. L. Childs..... 19,255
Shawls, wooden, F. T. Bauch..... 19,254
Shears and scissors, a table, pocket, and shaving cutlery, A. J. Jordan..... 19,237
Soap, toilet, Ostrom & Lincoln..... 19,244
Soaps and lotions, toilet, E. Rimmer..... 19,244
Sprinklers, automatic, R. Wood..... 19,252
Stoves, heating and cooking, F. A. Klaine..... 19,238
The plates, Copper Miners Tinplate Company..... 19,246
Tin plates, Pontypool Iron and Tinplate Company..... 19,250, 19,251
Tin plates and terne plates, Copper Miners Tinplate Company..... 19,245
Tin plates and terne plates, Pontypool Iron and Tinplate Company..... 19,248, 19,249
Tin plates, terne plates, and tin taggers, Old Castle Iron and Tinplate Company..... 19,247
Topical remedy, A. I. Babendreier..... 19,253
Wines and alcoholic liquors, H. S. Woodbury..... 19,261

DESIGNS.

Badge, C. F. Irons..... 20,645
Basket, fruit, J. A. Doty..... 20,641
Belt, apparel, J. Bigelow..... 20,640
Bottle, J. L. Dawes..... 20,656
Dental cabinet, T. J. Collins..... 20,643
Embroidery, P. Kleeberg..... 20,652
Furnace, Kernal, Jr., & Landers..... 20,618
Handle to rknives, etc., R. A. Hathaway..... 20,647
Handle to spoons, forks, etc., R. Leding..... 20,649
Handle to spoons, forks, etc., W. B. Durkin..... 20,649
Jump-had, A. Lovett..... 20,644
Neckscarf, ornamentation of, S. Finkelstein..... 20,642
Paper, etc., wrapping, H. W. Burtch..... 20,654
Spoon, E. C. Baumgras..... 20,655
Spoon, etc., E. Harris..... 20,657
Spoon, etc., R. Leding..... 20,650
Spoon or fork handle, H. B. Swart..... 20,653
Toy bank, R. Fribbie..... 20,646

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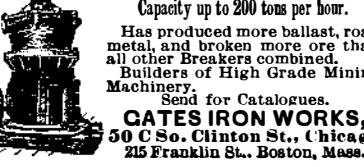
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