Business and Personal.

The charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

I wish to buy second hand lathes, planers, drills, shapers, belting, engines, and boilers. Will pay cash. W. P. Davis, Rochester, N. Y.

For Sale—A large number of 16 and 32 light Jenney dynamos at half their original cost. For particulars address Louisiana Electric Light Company, New Orleans, La.

Acme engine, 1 to 5 H. P. See adv. next issue.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Burnham standard turbine. Burnham Bros., York, Pa.

Wanted—Garbage burner. Send full particulars, circulars, etc., to M. & Co., care Scientific American.

Best Ice and Refrigerating Machines made by David Boyle, Chicago, Ill. 170 machines in satisfactory use.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and Canal Sts., New York.

Packer Ratchet Drills are drop forged from Norway iron and bar steel. Billings & Spencer Co., Hartford, Conn.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N.Y. See illus. adv., p. 300.

Wanted—Capital to develop several useful inventions. Sketches furnished on application. Address Griswold Bros., Dodge Center, Minn.

For the original Bogardus Universal Eccentric Mill, Foot and Power Presses, Drills, Shears, etc., address J. S. & G. F. Simpson, 26 to 36 Rodney St., Brooklyn, N. Y.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, $4; Munn & Co., publishers, 361 Broadway, N. Y.

A rare opportunity for a young man with a few thousand dollars capital to secure a permanent position as manager of a Western water works company. Address President Water Co., care this paper.

For Sale—Four Buckeye engines, comparatively new, 15 by 18 cylinder. Flywheel 9 ft. by 16 in. face. Diskcranks and automatic cut-offs. For particulars address Louisiana Electric Light Company, New Orleans, La.

Engineers, manufacturers, and makers are invited to send gratuitously catalogues, price-lists, and tradeterms to George T. Poole, Assoc. R. I. B. A., Assoc. M. I. C. E., Colonial Architect and Superintendent of Public Works, Department of Public Works and Buildings, Perth, Western Australia.

☞Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(3020) R. G. W. asks: Can you give me any test to know when any gold remains in a worn-out cyanide of gold bath, without the troublesome way of evaporating? A. You might test it by trying if it will deposit any gold upon a clean surface of silver. Or add solution of sulphate of iron to acidified sample. A precipitate will indicate gold if the bath is clean.

(3021) E. H. A. asks for the process of burnishing the gilt on photograph cards. A. The gilt on card mounts is put on by first using a size, then the gold leaf is applied and rubbed or brushed over with a thin solution of albumen; when dry, this is burnished with an agate or bone tool.

(3022) A. K. C. asks how to melt or dissolve old rubber that has been used and out of shape, so as to recast. Would a mould of plaster Paris answer? Would the article be smooth and not sticky? A. You cannot melt or dissolve old rubber. It can be worked up by mastication with fresh gum. It can be shaped to a certain extent only by pressure and heat. If once melted, it will not again solidify. In "Rubber Hand Stamps and the Manipulation of India Rubber," $1 by mail, you will find the whole subject treated.

(3023) L. D. N. asks how to repair a looking glass where the coating has seemed to have parted or has been removed in spots. A. From a small piece of old looking glass scrape off all the silvering except what will suffice to cover the spot and cap over on all sides. Place a drop of mercury on the silvering thus isolated. This will soften it so that it can be pushed off and dropped upon the defective place. The result will probably be imperfect. Possibly the mirror has a true silver surface. If so, the replating cannot be thus effected. An alkaline solution of silver nitrate with a reducing agent may be used, but success with a really bad mirror would be very doubtful. See query 1944.

(3024) J. C. G. asks for a composition for silver plating by the dipping process. A. Any plating solution of silver can be used. An ammoniacal solution of nitrate of silver with some whiting in suspension is available. The plating produced is very inferior.

(3025) Subscriber asks: Can you inform me what chemical ingredients will erase ordinary writing ink from paper? A. Javelle water or a mixture of oxalic and tartaric acids in equal quantity dissolved in water.

(3026) J. W. asks how to clean tarnished gold and silver lace. A. Brush away all the dust, then brush with rock alum which has been burned, crushed, and sifted through a lawn sieve. This will remove the tarnish.

(3027) A. M. T. asks how to pickle mushrooms. A. Wash the mushrooms with water, wipe them with flannel and put them in brine and boil. After boiling for a few minutes drain in a cullender and spread out on a linen cloth to dry. Place in bottles, add a little mace and fill up the bottle with white vinegar. Pour some melted mutton fat on the top before corking and seal with bottle wax.

(3028) G. F. S. asks: 1. Is water porous? A. Not in the mechanical sense. It has physical or molecular pores. 2. Can you reduce the bulk of water by pressure? A. Yes.

(3029) E. S. D. asks: Will you kindly (through columns of SCIENTIFIC AMERICAN) give a receipt for a preparation suitable for removing wood stains from the hands of wood turners? Would like to know of some chemical or preparation which would permanently remove such stains. A. We would suggest javelle water. Borax would also be advantageous used in strong aqueous solution.

(3030) F. C. K. asks for some salt or other chemical which is soluble in milk, and that would have no effect on it while cool, but that would have an acid reaction when heated that would coagulate the milk without changing its color or making it poisonous. A. Sulphate of ammonia becomes acid on boiling and might answer your requirements.

NEW BOOKS AND PUBLICATIONS.

ARTISTIC HOMES, in city and in country, with other examples of domestic architecture. By Albert W. Fuller and William Arthur Wheeler. Boston: Ticknor & Co. 1891. 70 plates. Price $6.

This very elegant work presents a series of photogravures of houses, of public buildings, railroad stations, high schools, etc., in various parts of the country. Of each building the exterior view with plans, as a rule, is given. The execution of the work leaves nothing to be desired, and the uncommented-on illustrations tell their own story.

THE ELEMENTS OF DYNAMIC ELECTRICITY AND MAGNETISM. By Philip Atkinson, A.M., Ph.D. New York: D. Van Nostrand Company. 1891. Pp. xii, 405. Price $2.

This book, it is stated, was written for learners rather than for the learned. It includes a very convenient *resume* of the subject of current electricity, contains numerous illustrations and seems altogether to be an acceptable presentation of the subject. Electricity is now settled on a basis so far fixed that much that is written about its elements is necessarily a repetition in each book. Dr. Atkinson seems to have brought his subject well up to date. Numerous illustrations, with an excellent table of contents and index, add materially to the value of the work.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

May 5, 1891,

AND EACH BEARING THAT DATE.

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

Accouchement apparatus for instruction, M. Klautsch ... 451,675
Addressing machine, E. W. Fish ... 451,606
Adjustable wrench, J. Muller ... 451,833
Air and gases, compressor for, T. C. Craven ... 451,480
Alarm. See Temperature alarm.
Alarm signal M. A. O'Donnell ... 451,639
Alcohol from sugar cane, apparatus for manufacturing, G. Descamps ... 451,679
Anchor, W. W. Smith ... 451,582
Animal trap, H. C. Anderson ... 451,745
Animal trap, J. Picard ... 451,839
Atomizer, J. Schoettl ... 451,643
Auger handle, Dutton & Lee ... 451,867
Automatic brake, C. K. Pickles ... 451,899
Axles or shafts, manufacture of, C. Lock ... 451,676
Banjo, Smith & Fritz ... 451,782
Bar. See Fire bar. Grate bar.
Bars or beams, making flanged, E. L. Clark ... 451,453
Basins, etc., holder for, H. B. Rockill ... 451,715
Basket stand or holder, G. H. Anderson ... 451,795
Battery. See Secondary battery.
Bed and dresser, combined folding, M. & A. Lain ... 451,492
Bed, folding, A. Matuska ... 451,564
Bed, folding, N. N. Potter ... 451,842
Bed, woven wire, H. Roberts ... 451,522
Bell, T. R. Pixton ... 451,770
Berth guard and ladder, J. Plaut ... 451,516
Bill strap, F. E. Blaisdell ... 451,657
Block. See Paving block.
Board. See Wash board.
Boiler. See Steam boiler.
Boiler tubes, apparatus for cleaning, Platt & Thorp ... 451,841
Bolt. See Flush bolt.
Bolt heading machine, G. H. Webb ... 451,604
Book support, revolving, C. H. Burdick ... 451,632
Boot or shoe, laced, E. L. Keith ... 451,694
Boring and reaming drill, J. R. Watts ... 451,789
Boring machine, A. M. Jewell ... 451,594, 451,595
Boring tool, E. F. Beugler ... 451,448
Box. See File box. Sand box. Signal box. Tobacco box.
Box fastener, O. J. F. Egelston ... 451,616
Bracket. See Shingling bracket.
Brake. See Automatic brake. Electric brake.
Brick machine, J. P. Miller ... 451,714
Brick, stratified, L. A. Steiger ... 451,626
Buckle, D. L. Durand ... 451,758
Buckle, G. B. Pilkington ... 451,840
Burner. See Gas burner. Oil burner.
Cable grip, J. J. Graff ... 451,857
Calendar, L. Brainard ... 451,800
Canoe yoke, R. Rinfret ... 451,579
Car and air brake coupling, combined, J. C. F. Ripley ... 451,654
Car coupling, J. W. Cloud ... 451,889
Car coupling, A. L. Jaynes ... 451,593
Car coupling, P. McEntee ... 451,505
Car coupling, J. McMaster ... 451,898
Car coupling, G. W. Smillie ... 451,883
Car door fastening device, M. Z. Sims ... 451,702
Car, double deck stock, B. C. Hicks ... 451,682
Car lighting apparatus, electric, B. J. Jones ... 451,732
Car, railway, A. J. McMaster ... 451,510
Car seat, railway, H. Hawes ... 451,690
Car wheel mould, W. G. Richards ... 451,578
Cars, combined dust arrester and ventilator for, H. A. Dirkes ... 451,465
Cars, draught apparatus for, M. Carter, Jr ... 451,851
Cars, drawhead and coupling mechanism for railway, J. Hatfield ... 451,481
Cars, switching device for, F. C. Cash ... 451,888
Cardboard boxes, machine for uniting the sides of, J. Weil ... 451,585
Carpet stretcher, W. W. Patterson ... 451,571
Carriage jack, C. L. Bellamy ... 451,686
Carrier. See Cash carrier. Parcel carrier. Pneumatic carrier.
Cart, road, N. H. Hill ... 451,671
Cart, road, R. D. Scott ... 451,528
Case. See Coin case. File case.
Cash carrier, G. T. Farnell ... 451,471
Cash register, W. G. Latimer ... 451,493
Casting, W. G. Richards ... 451,900
Casting machine, sash weight, F. N. Cline ... 451,707
Casting steel wheels, W. G. Richards ... 451,575
Casting wheels, method of and mould for, W. G. Richards ... 451,901
Catch, spring, P. Forg ... 451,473
Chains, machine for making sheet metal, F. Egge ... 451,658
Chair. See Folding chair. Rail chair.
Chair attachment, rocking, C. Kade ... 451,490
Chart for draughting patterns for garments, G. Drummond ... 451,558
Chopper. See Cotton chopper.
Chronometer escapement, E. Wuthrich ... 451,630
Chuck, J. Hartness ... 451,711
Cigar bunches, making, R. A. Bright ... 451,749, 451,750
Cigar bunches, manufacture of, W. A. Peck ... 451,737
Cigar bunching machine, Peck & Bright ... 451,739
Cigar bunching machine, M. Van Gulpen ... 451,610
Cigar forming and rolling machine, Peck & Bright ... 451,738
Cigar machine roll, Bright & Peck ... 451,748
Cigar machine roll, Peck & Bright ... 451,736
Cigar wrapping machine, Peck & Bright ... 451,735
Clamp. See Wall paper clamp.
Clasp, S. T. Hisley ... 451,482
Clothes drier, W. H. Moseley ... 451,567
Clutch, friction, C. E. Burwell ... 451,752
Clutch, friction, H. P. Claussen ... 451,727, 451,728
Clutch, friction, J. F. McLaughlin ... 451,653
Clutch, friction, L. S. Pfouts ... 451,683
Cock, stop, R. T. Baines ... 451,746
Coin case, R. D. Culver ... 451,664
Coke making apparatus, F. J. Jones ... 451,488
Combustion, utilizing products of, Biedermann & Harvey ... 451,612
Confections, etc., machine for moulding, J. C. Ruby ... 451,523
Cooking apparatus, spirit, B. Otto ... 451,837
Corks by grinding, machine for the manufacture of, Lowman & Howard (r) ... 11,160
Corset fastening, W. F. McGee ... 451,506
Cotton chopper, A. Carr ... 451,663
Cotton cleaning apparatus, dust trunk for, J. C. Potter ... 451,609
Cotton conveying and cleaning apparatus, W. E. Elam *et al* ... 451,856
Cotton, pneumatic machine for picking, C. Baldwin ... 451,589
Cotton pressing machinery, J. A. Bachman ... 451,846
Coupling. See Car coupling. Car and air brake coupling. Pipe coupling. Railway rail coupling.
Cover, swinging, Bartlett & Naber, Jr ... 451,447
Crane and elevator, combined floating, J. E. Walsh ... 451,903
Crane, hydraulic, Kennedy & Aiken (r) ... 11,163, 11,164
Crupper, F. H. Kiekenapp ... 451,561
Cultivator, M. Sattley ... 451,527
Cultivator and fertilizer distributer, combined, L. B. Buzby ... 451,805
Curtain or shade guide, H. T. Edson ... 451,665
Curtain stretching and drying machine, H. V. Holmes ... 451,607
Cut-off for conductors, J. D. Shepard ... 451,779
Cutter. See Watchmaker's jewel setting cutter.
Damper, grate, M. J. Robbins ... 451,774
Dental cotton pellet machine, R. N. Roberts ... 451,701
Die press, W. A. Turner ... 451,534
Ditching machine, R. Hunter ... 451,558
Door mats, fastening device for, L. H. Clamer ... 451,633
Drier. See Clothes drier.
Drill. See Boring and reaming drill. Twist drill.
Dust collector, R. R. Watters ... 451,542, 451,543
Dye, blue, Mohler & Mayer ... 451,502
Egg extracting or separating device, L. K. Strang ... 451,634
Electric brake, J. M. Payne ... 451,514
Electric conductor, J. D. F. Andrews ... 451,605
Electric conductors, switch for overhead, J. Kuehnle ... 451,696
Electric lines, etc., pole for, J. R. Fletcher ... 451,740
Electric machine, dynamo, L. N. P. Poiand ... 451,700
Electric machine, dynamo, L. C. Rice ... 451,574
Electric meter, E. W. Rice, Jr ... 451,520
Electric motor, E. M. G. Hewett ... 451,870
Electric motor, W. E. Hyer ... 451,559
Electric motor, F. M. La Boiteau ... 451,872
Electric motor or dynamo-electric machine, W. F. Collins ... 451,894
Electric motor or dynamo-electric machine, S. S. Wheeler ... 451,884
Electric motors, constructing field magnets of, S. S. Wheeler ... 451,885
Electric stop motion, C. A. Dayton ... 451,649
Electric wire conduit, underground, H. B. Cobb ... 451,614
Embroidering machine, L. L. Mick *et al* ... 451,831
Engine. See Gas engine. Gas or vapor engine. Hydropneumatic engine. Rotary engine. Steam engine. Traction engine.
Engine piston, steam, J. H. Blessing ... 451,850
Engines, operating reciprocating electric, C. J. Van Depoele ... 451,786
Evaporating apparatus, vacuum, H. Burgess ... 451,751
Excavator, D. E. Horton ... 451,484
Extension table, G. Magnussan ... 451,597
Extension table slide, C. F. Hall ... 451,820
Extractor. See Oil and grease extractor.
Fabrics, frame for holding and stretching, C. F. Flos ... 451,814
Fan, F. M. La Boiteaux ... 451,873
Fanning mill attachment, J. Herson ... 451,670
Fare receiver, portable, M. H. Allison ... 451,611
Farm gate, H. A. Benefiel ... 451,886
Fastener, E. F. Schultz ... 451,845
Faucet, Hescock & Sawyer ... 451,895
Feedwater, apparatus for heating, G. H. Burpee (r) ... 11,162
Feedwater heater for steam boilers, A. & R. Wildman ... 451,546
Feeder, L. J. Swoboda ... 451,532
Fence, wire, T. J. Ingraham ... 451,672
Fences, end or corner structure for, C. F. Darnell ... 451,461
Fencing, machine for wiring wood, S. H. & M. H. Merridith ... 451,580
Fifth wheel, J. J. Black ... 451,687
File box and manufacturing the same, C. M. Carnahan ... 451,726
File cabinet, F. A. Tyler ... 451,535
File case, M. C. Meigs ... 451,599
File, paper or bill, A. Dom ... 451,729
Firearms, front sight for, W. L. Marble ... 451,499
Fire bar, locking, D. J. Morgan ... 451,652
Fire escape, S. A. De Castilho ... 451,852
Flash light, magnesium, O. Doehn ... 451,853
Flask. See Moulder's flask.
Flower holder, K. B. Tudor ... 451,645
Fluid meter, E. Ruud ... 451,881, 451,882
Flush bolt, corner, P. Forg ... 451,474
Folding chair, H. Forsyth ... 451,475
Forging and finishing circular articles, apparatus for, C. Fairbairn ... 451,470
Frame. See Type frame. Window frame.
Furnace. See Glass pot furnace. Sulphur furnace.
Furniture, detachable leg for, E. B. Clark ... 451,755
Furniture, school, J. M. Sauder ... 451,776
Fuse, percussion, K. K. Malmstrom ... 451,598
Gas burner, Prather & Bohn ... 451,517
Gas burner safety attachment, J. S. Valentine ... 451,785
Gas engine, G. W. Lewis ... 451,621
Gas meters, valve and quantity register for, J. L. Cloudsley ... 451,756
Gas or vapor engine, G. W. Lewis ... 451,620
Gate. See Farm gate.
Generator. See Steam generator.
Glass, making flashed, F. Lannoy ... 451,618
Glass pot furnace, A. G. Neville ... 451,836
Grain scourer, C. Rippin ... 451,580
Grass cutting implement, P. Burnett ... 451,452
Grate bar, movable, C. J. Dorrance ... 451,615
Grinder, tool, E. C. Phillips ... 451,515
Guard. See Berth guard.
Gun barrel, P. Mauser ... 451,768
Gun, quick-firing, J. Vavasseur ... 451,874
Guns, breech mechanism for, A. Welin ... 451,865
Hair tonic, M. McGillvroy ... 451,508
Hair tonic, L. C. Peters ... 451,838
Handle. See Auger handle.
Harness, L. W. Hampton ... 451,821
Harvester, A. F. Hart ... 451,669
Harvesters, swathing attachment for, F. Childs ... 454,678
Hat hook or rest, T. Murrin ... 451,568
Hay loader, F. Earnheart ... 451,467
Hay stacker, W. Klinker ... 451,766
Heater. See Steam or hot water heater. Water heater.
Hoisting device, I. C. Welter ... 451,716
Holder. See Flower holder. Horse tail holder. Paper holder. Pillow sham holder. Twine holder.
Hook. See Hat hook.
Horse detacher, F. T. Brown, Jr ... 451,451
Horse tail holder and rein guard, J. W. Lindsay ... 451,608
Horseshoes, attaching toe weights to, G. W. Wemple ... 451,647
House. See Portable house.
Hub borer, A. O. Abbott ... 451,794
Hydrant, W. C. Rathbun ... 451,518
Hydrant, J. Redican ... 451,772
Hydropneumatic engine, L. Kessler ... 451,824
Hydrocarbons, refining, E. D. Kendall ... 451,660
Indicator. See Sawmill indicator. Water level indicator.
Inkstand, T. Sweesy ... 451,741
Insulated electric conductor, J. B. Williams ... 451,586, 451,587
Jack. See Carriage jack. Wagon jack.
Jewelry, J. Rothschild ... 451,661
Joint. See Rail joint. Railway rail joint.
Knitting machine, circular, A. Kay ... 451,713
Knitting machines, stop motion for circular, Townsend & Schneebeli ... 451,628
Knitting machines, take-up device for, J. Auerden ... 451,446
Knitting machines, thickening mechanism for circular, J. Bettney ... 451,747
Knitting machines, thickening thread feed mechanism for, W. H. Stewart ... 451,703
Knob attachment, W. L. Morton ... 451,503
Ladder, G. T. Campbell ... 451,893
Ladder, extension fire, J. L. Crafts ... 451,708
Lamp, W. P. Butler ... 451,753
Lamp burner attachment, G. S. Gates ... 451,555
Lamp wick adjuster, G. H. Wilson ... 451,718
Lamps, current regulator for electric, Balsley, Jr., & Porter ... 451,798
Lamps, socket for incandescent, Deacon & Wightman ... 451,656
Lamps, wick raising device for central draught, W. M. Hoerle ... 451,483
Lantern and lamp, tubular, C. L. Betts ... 451,551
Last block fastener, C. H. Gaffney ... 451,759
Latch, F. J. Lau ... 451,638
Latch, J. P. Sandberg ... 451,526
Leather staking and stretching machine, G. W. Baker ... 451,796
Leather treating machine, A. A. Hunting ... 451,496
Level, fluid, A. Gamble ... 451,680
Lifter. See Transom lifter.
Light. See Flash light.
Links and apparatus therefor, manufacture of, J. H. Baker ... 451,797
Liquids, device for applying, C. S. Pease ... 451,640
Lock. See Nut lock. Permutation lock. Seal lock. Switch lock. Wagon lock.
Lock, J. Fey ... 451,709
Lock, P. McMahon ... 451,878
Locking mechanism, coin-operated, B. Hallett ... 451,556
Mangle, Hagen & Cooper ... 451,479
Marbles, machine for moulding, A. L. Dyke ... 451,855
Mattress, woven wire, A. Allgoever ... 451,704
Measuring machine, cloth, A. I. Mitchell ... 451,697
Metal, coating, F. J. Clamer ... 451,592
Meter. See Electric meter. Fluid meter.
Mill. See Rod mill.
Mould. See Car wheel mould.
Moulder's flask, W. G. Richards ... 451,576, 451,577
Motor. See Electric motor.
Multiple signal transmitter, B. J. Noyes ... 451,512
Music leaf turner, F. M. Hurley ... 451,763
Musical instrument, I. F. Gilmore ... 451,667
Musk, artificial, A. Baur ... 451,847
Nippers, D. A. Hamilton ... 451,668
Nut lock, T. R. White ... 451,717
Oil and grease extractor, T. H. Gilbert ... 451,816
Oil burner, Upson & Smith ... 451,784
Oils, neutralizing sulpho-chlorinated, A. Sommer ... 451,531
Packing, composition adapted for steam, J. Johnson ... 451,693
Paper fastener, C. Grunzweig ... 451,710
Paper folding, A. P. Warner ... 451,539
Paper holder and cutter, roll, J. H. Corneilson ... 451,809
Paper holder and cutter, roll, J. B. Seymour, Jr ... 451,623
Paper holder and cutter, roll, M. S. Tracy ... 451,685
Paper splitting and folding machine, J. L. Cox ... 451,459
Parasol, R. F. Painter ... 451,570
Parcel carrier, J. P. Stepp ... 451,627
Parcel carry apparatus, J. S. Richardson ... 451,602
Paris green, making, J. C. Jessup ... 451,487
Paving block, composition, J. H. Drake ... 451,466
Peat fuel, appartus for the manufacture of, A. A. Dickson ... 451,462
Peat machine, A. A. Dickson ... 451,463
Peat to fuel, machine for reducing crude, A. A. Dickson ... 451,464
Permutation lock, W. P. Shattuck ... 451,529
Petroleum distillates, purifying, T. J. Gordon ... 451,724
Photographic shutter, C. C. Packard ... 451,880
Piano action, A. H. Stuart ... 451,662
Picket wiring machine, J. R. Shaffer ... 451,581
Pillow sham holder, F. J. Waite ... 451,538
Pipe coupling, J. W. Moore ... 451,565
Piston, Good & Lindroth ... 451,478
Pitcher, beverage, O. W. Van Denburgh ... 451,584
Plane iron sharpening apparatus, C. Bransgrove ... 451,801
Planter, F. M. Haines ... 451,819
Planter, corn, E. M. Heylman ... 451,871
Planter, seed, J. Howland ... 451,761
Plaster, T. Jones ... 451,560
Plastering walls, etc., composition of matter for, Reagan & Longley ... 451,519
Plow and cultivator, Christian & Stanley ... 451,806
Plush fabrics, manufacturing double-faced, F. Tonnar ... 451,743
Pneumatic carrier, E. D. Leaycraft ... 451,619
Pocketbooks, safety device for, J. M. Lucas ... 451,829
Poker chip or counter holder, A. K. Evans ... 451,722
Pool table, W. H. Violett ... 451,536
Portable house, C. H. Leonard ... 451,733
Pot. See Tea pot.
Press. See Die press. Printing press.
Printing press, W. H. Golding ... 451,681
Propeller for boats, L. Gillespie ... 451,731
Puller. See Weed puller.
Pump, Lister & Pedersen ... 451,827
Pump, E. Neff ... 451,835
Pump valve, steam, H. Beisheim ... 451,591
Radiator, C. E. Marston ... 451,840
Rail chair, J. Johnson ... 451,823
Rail joint, W. H. Connell ... 451,454
Railway, electric, R. M. Hunter ... 451,692
Railway pole, electric, F. Milliken ... 451,832
Railway rail, J. E. Mandeville ... 451,563
Railwap rail coupling, J. T. Wicker ... 451,544
Railway rail joint, V. A. Tyler ... 451,646
Railway spike, Hammond & Gordon ... 451,859
Railway switch, W. R. McGibony ... 451,507
Railway system, electric, C. K. Harding ... 451,637
Railway tie, T. Brown ... 451,804
Railway tie, H. V. & T. Slutz ... 451,781
Railways, conduit system for electric, W. H. Ford ... 451,815
Recorder. See Time recorder.
Register. See Cash register.
Rod mill, I. A. Kilmer ... 451,673, 451,674
Roof, metal, C. R. Everson ... 451,650
Roof, portable, E. Rankin, Jr ... 451,572
Roofing, sheet metal, J. C. Bayer ... 451,550
Rotary engine J. Schwarzmann ... 451,777
Rules, bevel attachment for folding, C. D. Cowgill ... 451,810
Safe front, P. F. King ... 451,695
Sand box, F. G. Corning ... 451,455 to 451,457
Sand distributer, F. G. Corning ... 451,458
Sash, window, T. F. Longenecker ... 451,596
Sawmill indicator, J. I. Hatfield ... 451,860
Sawmill set works, H. Gawley ... 451,476
Sawmills, pulley for band, R. F. Barker ... 451,590
Saw set, C. F. Leopold ... 451,494
Saw set, C. C. Taintor ... 451,644
Scale, W. A. Wright ... 451,677
Scale, platform, C. Brunner ... 451,613
Scourer. See Grain scourer.
Screen. See Slidigg screen.
Screw cutting device, Westbrook & Burns ... 451,790
Seal lock, C. E. Davis (r) ... 11,161
Seaming machine, F. P. De Jonge ... 451,489
Seat. See Car seat.
Secondary battery, T. H. Aldrich ... 451,445
Secondary battery, G. A. Washburn ... 451,540, 451,541
Seed, machine for delinting cotton, J. M. Gardner ... 451,868
Seesaw, C. F. Spencer ... 451,583
Sewing machine tuck marking attachment, J. R. Hebert ... 451,869
Sewing machine tuck marking device, J. E. Bradley ... 451,450
Shears. See Wire shears.
Shed, Satterlee & Kemmerer ... 451,775
Shingle, R. P Taylor ... 451,783
Shingling bracket, W. W. Clarkson ... 451,807
Shoemaker's rule, W. Damer ... 451,552
Shovel blank, M. H. Evans, Jr ... 451,469
Signal. See Alarm signal.
Signal box, M. G. Davis ... 451,689
Slate brick, making, W. L. Gregg ... 451,818
Slate chamfering macaine, F. Shenton ... 451,778
Sliding screen, door, etc., C. B. Bishop ... 451,631
Sonorous disks, supporting, J. P. Smith ... 451,740
Spinning machinery, roller transverse motion for, Hurst & Fenton ... 451,764
Splice bars, manufacturing, J. Coyne ... 451,635
Springs, machinery for tapering the ends of bars or rods for making coiled, W. C. Farnum ... 451,636
Square, bevel, S. D. Hatcher ... 451,659
Stamp, post office hand, E. J. Brooks ... 451,887
Stamping or printing instrument, time, O. P. Lochmann ... 451,767
Stand. See Basket stand.
Steam boiler, E. J. Moore ... 451,734
Steam boiler and furnace, J. E. McCreary ... 451,504

© 1891 SCIENTIFIC AMERICAN, INC.