on an arc light circuit? Will you give changes to make? A. It is not practicable to do what you describe, partly from considerations of safety and partly from the effect of the motor on the circuit. Winding for the current of the circuit, so as to get counter E.M.F. and resistance enough to represent an arc lamp, is the basis of the solution. Do not try it.

(6775) C. S. H. asks: What lengths of Nos. 18, 26, and 36 copper wire have a resistance of one ohm? A. Approximately, 153 feet, 41 feet, and 2·35 feet respectively.

(6776) H. M. B. asks why the X rays are so named. A. We take it that X is used to indicate the unknown feature in the rays. X is the algebraic symbol of an unknown quantity.

(6777) E. D. asks: How small can a dynamo be made which will generate a sufficient current to supply one 3 candle power incandescent lamp, and of what voltage and amperage would it be? A. Special dynamos have to be calculated. The dynamo shown in SUPPLEMENT, No. 161, with the drum armature shown in No. 599, is approximately the size. A. 3 candle power lamp rates at --ohms 3·6 to 4·5, volts 5·5 to 7, amperes 1 to 1·50.

(6778) J. W. asks: Can you tell me why weakening the field magnets of a motor increases its speed? A. It weakens the field, and hence reduces the counter E.M.F. due to any specified armature speed.

(6779) O. S. wries: 1. I want to erect a lot of grape trellises, handy to the house that I live in. Would like to use a lot of old one inch gas pipes. Would the gas pipes cause danger from lightning, or would they be a preventive or safety against lightning? A. They will be an element of safety, if connected to the ground; otherwise, they will be without effect one way or the other. 2. Suppose a tunnel is driven 130 yards in a hill. The hill is 90 feet high at the head of the tunnel, up through the ground to the surface. The hill has an even slope all the way. How many yards would it be from the tunnel mouth to a peg in the ground directly over the head of the tunnel? A. Nearly 134 yards.

(6780) M. S. P. writes: In building a storage battery, by laying a sheet of coated lead plate on the bottom of a jar, then a sheet of some insulating substance, then a sheet of lead, and so on, alternate plates connected to lead rods running to the top of the cell, what is the best substance to use between the lead plates? I thought of using asbestos paper, but it is very easily torn when wet. A. Asbestos paper is excellent and its fragility will not militate against it, because it will not be materially disturbed unless you overcharge too vigorously, so as to cause strong evolution of gas. Flannel has been used, but it decays.

(6781) W. A. H. asks: Can the cores of the field magnets in the small motor described in SUPPLEMENT, No. 641, be made of cast iron, and, if so, what proportions? A. Yes; follow the size given, or, if possible, make it a little thicker than shown.

(6782) Engineer writes: If I stand on a glass stool, I cannot be hurt by touching a high power electric current. If I am standing on the earth, I am killed. How does the electricity find out I am insulated? Does the electricity stop at my hands, because it has seen that the stool will stop it? A. The entire surface of the body is charged as you stand on the insulated stool. When ground is connected, the current, as such, passes through the body, with the effects of a more or less severe, possibly fatal, shock. The charge does not stop at the hands, but extends over the entire surface of the body.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

March 3, 1896,

AND EACH BEARING THAT DATE.

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

Acid and obtaining it, citricpbenetidin, B. R. Seifert 555,711
Air brake signal, J. P High 555,809
Alarm. See Burglar alarm. Speed indicating alarm.
Alarm system, district, M. E. Barrett 556,491
Amalgamator, S. Dunn 555,762
Amalgamator, D. Feit 555,569
Armature for dynamos and motors, G. A. Weiles, Jr 556,628
Armature for induction motors, A. L. Cushman 555,851, 555,909
Axle box, self lubricating, dusttight, E. Peckham 555,531
Axle lubricator, car, A. R. Pingel 555,827
Ballot box, Fairbank & Langley 555,600
Band fastener, E. A. Oliver 555,524
Banjo, M. F. Carter 555,636
Bank, savings, H. H. Norrington 555,876
Barbers' chairs, shampooing attachment for, J. E. Hanger 555,860
Bath tub, C. F. Burnap 556,560
Bearing, roller, F. Mossberg 555,655
Bearings, shaft hanger box for spring roller, J. W. Hyatt 555,510
Bed, invalid, J. T. Hall 555,859
Belt shifter, P. H. Pratt 555,735
Bicycle, W. E. Daniels 555,639
Bicycle brake, E. S. Ellis 555,686
Bicycle driving mechanism, A. Dubreuil 555,684
Bicycle gearing, changeable, F. A. Rich 555,886
Bicycle lock, E. A. Parson 556,878
Bicycle speed indicator, J. C. G. Bonney 555,492
Bin. See Flour bin.
Bit, J. D. Keller 555,867
Bleaching keir, G. L. & W. P. Allen 555,486
Boats or vessels, stake apparatus for, J. H. Turopp 555,542
Boiler. See Vertical boiler. Water tuber boiler.
Boiler, Plenty & Miller 555,880
Boiler flue, J. R. Lowrey 555,822
Book covering machine, G. H. Specht 555,910
Book lock, E. E. Rogers 555,829
Book, mechanical cash, A. D. Smith 555,745
Boot or shoemakers' jack, O. Johnson 555,866
Bottle, W. M. Breck 555,758
Bottle indicator, poison, E. Reyer 555,708
Bottle, non-fillable, J. Bird 555,556
Bottle washing machine, M. E. Donally 555,598
Box. See Ballot box. Car sand box. Music box.
Box fastener, E. H. Fenton 555,688
Box staving machine, H. Inman 555,814, 555,815, 555,816
Box staying machine, H. & H. A. Inman 555,812, 555,813
Box staying machine, H. A. Inman 555,817
Boxes, etc., machine for applying adhesive strips to, H. & H. A. Inman 555,811
Bracket. See Shelf bracket.
Brake. See Bicycle brake. Car brake. Fluid pressure brake. Railway brake. Vehicle brake.
Brakes, safety appliance for electric, W. B. Potter 555,585
Brick machine, W. E. Damon 555,805
Brush, A. C. Estabrook 555,687
Brush, E. Morris 555,654
Brush, air, O. C. Wold 555,669
Brush handle attachment, G. Davenport 555,854
Buggy, side bar, E. F. Hill 555,769
Burglar alarm, Hungerford & Bott 555,810
Burner. See Gas burner.
Butter, manufacture of, G. M. Andersson 556,892
Button and button fastener, O. W. Ketchum 555,868
Cam, S. Schneider 556,534
Camera. See Magazine camera.
Car brake, E. Peckham 556,527
Car brake, G. I. Root 556,950
Car coupling, T. Hagen 556,506
Car coupling, W. F. Richards 555,619
Car coupling, automatic, J. Buckley 555,559
Car draft mechanism, railway, H. H. Marshall 555,520
Car fender, J. Kerrigan 555,777
Car safety attachment, C. D. Shrader 555,908
Car sand box, street, T. L. Monagban 555,787
Car wheel guard, street, J. W. Darley, Jr 555,852
Car window, F. W. Wilson 555,750
Cars, automatic life guard for, C. M. Beebe 555,753
Cars, electric propulsion system for, G. H. Melotte 555,783
Cars, motor hanger for electrically propelled, E. Peckham 555,520
Carbonator, F. A. J. Kaiser 555,514
Card feeding machines, automatic alarm for, J. F. Geb 555,892
Carpet stretcher, W. G. Bertram 555,755
Carpet sweeper, W. T. Hess 555,883
Cartridge loading machine, G. M. Peters 555,734
Case. See Revolving case.
Case for holding and displaying samples of cards, C. H. Pedrick 555,615
Caster, L. B. Denton 555,683
Caster, ball, A. H. Marden 555,578
Centrifugal apparatus, G. M. Andersson 555,893
Centrifugal machine, G. M. Andersson 555,552
Chains, machine for manufacturing weldless, H. Rongier 555,737
Chair. See Hammock chair.
Chair, Evers & Woerner 556,642
Chair, J. Gilson 555,694
Channeling machine, A. Ball 555,633
Chimney cowl, J. M. De Lanoy 556,761
Chimney, ventilating, W. J. Gordon 555,643
Clamp. See Soldering clamp.
Clamp, J. Mowrer 556,614
Clamping or securing device, F. W. & E. P. Parsons 556,879
Clarinet reed supporter, G. R. Cadwallader 556,561
Clasp. See Garment clasp.
Cleaner. See Dish cleaner. Furnace cleaner. Grain cleaner. Knife cleaner.
Clothes rack, G. Bartlett 556,843
Clutch for card feeding machines, C. H. Woodbury 556,840
Coal cutter, electric, I. E. Storey 555,832
Coffee making machine, J. Denk 555,500
Coffin, H. M. Handshy 556,807
Collar, horse, O. J. Westfall 555,545
Collar, split slip, J. B. Johnson 555,512
Collars, tool for dampening fold lines of, H. Barnes 555,490
Coloring matter, yellow, R. Nietzki 555,658
Compass, drawing, A. K. Cross 556,803
Copying press, letter, E. B. Millert 556,653
Core boring apparatus and means for gripping and raising cores, F. H. Davis 556,640
Core or spool for balls of thread, W. Clark 555,498
Corner staying machine, H. A. Inman 555,818
Cotton gin seed conveyor, R. S. Munger 555,789
Cotton picker, D. W. Gaskill 556,691
Coupling. See Car coupling.
Crate, bicycle, H. G. Streat 555,833
Cue trimmer, J. N. McIntire 555,730
Cultivator, S. C. Cobb 556,760
Cultivator, Shailer & Watchorn 555,628
Cultivator, riding, M. & A. Sattley 556,710
Curtain pole, Harvey & Harris 555,693
Cutter. See Coal cutter.
Cutter head, S. J. Shimer 556,742, 555,743
Cyclometer, G. Nutting 556,659
Dish cleaner, G. W. Blackburn 556,671
Dish cleaner, G. S. Finney 556,570
Disinfectant holder, H. P. Roberts 555,888
Disinfecting apparatus, C. Herscher 555,700
Door, automatic self closing, I. F. Miller 556,652
Door lock, sliding, Larsson & Schultz 555,779
Door track, sliding, J. W. Conchar 555,848
Draft equalizer, L. J. Sevison 555,622
Dredging apparatus, L. Hussey 556,704
Drier, F. L. Bigelow 556,756
Dye from dinitro anthrachrysone disulfo acid, H. Laubmann 555,904
Dyeing machine, yarn, M. H. Masland 555,609
Elbow, O. P. Briggs 556,494
Elbow making machine, O. P. Briggs 556,493
Electric machine and electric motor, dynamo, G. A. Welles, Jr 555,544
Electric machines, core and coil for dynamo, A. L. Cushman 555,850
Electric meter, G. A. J. Telge 555,589
Electric motor controlling mechanism, L. T. Gibbs 555,503
Electrical conductors, method of and apparatus for preparing or treating, C. E. Carpenter 556,895
Electrical energy, converting potential energy of carbon into, W. W. Jacques 555,511
Electro magnet for separating metals, Whitacre & Wolfe 555,546
Elevator, Muckle & Teamer 555,825
Elevator shaft closing mechanism, H. D. Adell 555,670
Emery wheel, C. L. Merithew 555,579
Engine. See Gas engine. Gas or oil motor engine. Steam engine.
Engines, indicator reducing motion for, Turner & Mekeel 555,668
Engraving machine, B. S. Molyneux 555,581
Envelope, safety, A. Mortenson 555,613
Excavating, conveying and loading or unloading earth, etc., upon or from railway cars, machine for, M. W. Robinson et al 556,889
Extension table, E. A. Loomis 555,727
Faucet attachment, self measuring, C. H. Kaup 555,823
Feed rack and trough, G. W. Williams 555,939
Feed trough, A. Lewis 556,781
Fence post, Potts & Bare 555,617
Fence, wire, J. S. Maher 555,823
Fence, wire, C. D. Shellaberger 556,666
Fence wire, apparatus for bandling, J. B. Crowder 555,849
Fences, device for attaching stay wires to wire, W. J. Jacobs 555,914
Filter, C. E. Ince 555,773
Filter, water, F. W. Edgington 555,685
Filtering cane juice, apparatus for, J. W. Fleetwood 556,855
Filtering device, liquid, J. Lamson, Jr 555,821
Firemen, trolley protector for, J. P. Barrett 555,634
Fireproof ceiling or wall, H. & W. Geraerdts 555,693
Fire cloth, machine for manufacturing mosaic, W. Mather 555,650
Flour bin and dough board, combined, G. F. Wornstaff 555,549
Flue expander, Fuhrmann & Daugherty 555,915
Fluid pressure brake, H. S. Park 555,877
Forming machine, Lake & Clark 555,575
Furnace. See Heating furnace. Metal heating furnace. Smelting furnace.
Furnace cleaner, G. W. Manuel 555,870
Furnace grate, F. E. Culver 556,679
Furnace grate, M. F. Mulready 556,788, 555,826
Furnaces, method of and apparatus for heating blasts for smelting, J. W. Nesmith 555,731
Gage. See Track gage.
Garment clasp, W. V. Snyder 555,746
Gas burner, J. F. McElroy 555,875
Gas engine, Weinman & Euchenhofer 556,717, 555,791
Gas meter, Mitchell & Hearne 555,786
Gas or oil motor engine, Crossley & Atkinson 555,898
Gas pipes or connections, apparatus for closing or opening, C. Weuste 556,795
Gate, W. W. Hatfield 556,808
Generator. See Monocyclic generator. Steam generator.
Grain and seed separator, J. Lucas 556,577
Grain cleaner and stock feeder, combined, N. Smith 555,909
Grindstone frame, S. C. Schofield 556,586
Guitar striker or picker, K. R. Essig 555,599
Gun barrel, auxiliary, J. E. Perl 555,582
Gun stock, adjustable, J. Foulkrod 556,602
Hammer, bush, C. Thibodeau 555,714
Hammock chair, W. W. Blair 555,557
Hand hook, merchandise, H. F. Dalton 555,681
Handle for hardware, etc., J. L. Moore 555,872
Handle for hardware or analogous articles, Moore & Brown 555,873
Hanger. See Pipe hanger.
Harmonica, M. Messner 555,610
Harness attachment, R. E. Whitacre 556,630
Harrow, Hench & Dromgold 555,699
Harrow, F. C. Merrill 556,784
Harvester, C. A. A. Rand 555,883
Hat retainer, C. E. de Fonblanque 556,689
Hay carrier, W. Louden 555,605
Hay carrier track, W. Louden 555,606, 555,607, 555,608
Hay loader, W. S. Rhoads 555,618
Heater. See Tank heater. Water heater.
Heating furnace, S. Forter 555,856
Heel plate for shoes, etc., C. A. Sage 556,709
Hinge and catch, combined, L. L. Pletcher 555,583
Hobby horse, F. J. Smith 555,536
Hoisting apparatus, C. W. Hunt 555,703
Hook. See Hand hook.
Hook and eye, E. A. Johnson 555,513
Hoop, C. R. Smith 556,712
Horseshoe nail machines, feeding apparatus for I. Tjerneld 556,715
Hose holder, H. J. M. Howard 555,574
Ice cream freezer, W. B. McCann 556,523
Indicator. See Bicycle speed indicator. Bottle indicator.
Initiation apparatus for secret societies, E. & U. S. De Moulin 556,499
Invalid support, T. F. Carlos 556,894
Jack. See Boot or shoe maker's jack. Lifting jack.
Keyboard player, R. T. Smith 555,744
Knife. See Planer knife.
Knife cleaner and sharpener, J. D. Johnston 555,819
Knob, door, G. E. Schofer 555,906
Ladder, extension, L. C. Tiefel 555,836
Lamp, electric arc, T. E. Adams ..... 555,841.
Lamp, electric arc, E. Lavens 556,706
Lamp, electric arc, R. Schefbauer 556,621
Lamps, suspension of incandescent gas, F. E. Nichol 556,732
Lards, fats, oils, etc., machine for mixing and distributing, J. F. Addison 556,551
Lasts, machine for trimming ends of shoe, H. K. Gardiner 555,912
Latbe dog, H. J. Aichele 555,751
Leather dressing compound, Stevens & Schroeder 556,537
Level, E. Hohnbaum 556,771
Level, plumb, L. J. J. Aubert 555,489
Life and wheel guard, adjustable, E. Peckham 555,528
Lifting jack, W. C. Crawford 555,802
Liquids, method of and apparatus for elevating, Misic & Foster 555,785
Lock. See Bicycle lock. Book lock. Door lock.
Locomotive, steam, W. P. Henszey 555,508
Loom, G. F. Hutchins 555,705
Lubricator. See Axle lubricator.
Magazine camera, Hill & Adams 555,865
Magnesium, calcium and carbid, compound of, C. Whitehead 555,796
Magnetic separation, method of and apparatus for, J. P. Wetherill 555,792
Magnetic separator, J. P. Wetherill 555,794
Matching machine, W. H. Bullock 556,496
Measuring instrument, electrical, A. H. Hoyt 555,762
Mess kit, field ration, G. H. Preston 555,882
Metal beating furnace, W. H. Bailey 555,564
Meter. See Electric meter. Gas meter.
Milk beating device, Knobel & Bontly 555,515
Milk sterilizer, H. M. Myers 555,657
Moistening apparatus, C. A. Peple 556,616
Monocyclic generator, E. Thomson 555,590
Motion, means for changing, J. J. Hamilton 555,507
Music box, C. H. R. Bock 555,757
Musical instrument, A. H. Merrill 555,651
Nailing machine, G. Gruendel 555,572
Nozzle, spray, P. J. Haas 555,573
Oil and water separator, E. Austin 555,553
Ore and metallurgy thereof, separation of franklinite, J. P. Wetherill 555,793
Packing device, G. B. Garrison 555,764
Padlock, J. Murphy 555,728
Paper box clamping device, W. S. Blanchard 555,845
Pen, fountain marking, W. N. Fessenden 555,763
Penholder, W. W. Cole 555,676
Pencil, lead, C. W. Frost 555,690
Pencil sharpener, R. S. Chevrier 555,497
Pessary, G. J. Gladman 555,695
Piano case, K. A. Modee 555,612
Piano coupler, G. H. Arthur 556,682
Picker. See Cotton picker
Pillow, sham, A. S. Rosenbaum 556,662
Pin. See Safety pin.
Pipe hanger, C. W. Hodgdon 556,913
Pipe, machine for manufacturing sewer, W. W. Wallace 556,838
Piston rod and cross head connection, E. J. Muller 555,656
Planer knife, S. J. Shimer 555,741
Planter, corn, N. O. Starks 556,713
Planter, corn, E. E. Towle 556,749
Planter feed, pea, T. R. Crane 556,896
Planter marker, Steel & Goldsberry 555,538
Plow, subsoil, A. B. Cummings 555,804
Pocket companion, F. W. Bacho 556,752
Post. See Fence post.
Press. See Copying press.
Preserving unfermented grape juice, C. Staubes 555,830
Pump, gravity power, I. T. Dyer 555,724
Pump regulator, boiler, C. A. Straub 556,540
Pump strainer, C. C. Stiner 555,831
Puzzle, D. B. Stephens 555,539
Pyroxylin solvents, making, G. O. Zeller 555,596
Rack. See Clothes rack. Feed rack.
Railway brake, electric, J. C. Henry 556,862
Railway closed conduit electric, C. Anderson 556,487, 555,488
Railway, electric, R. M. Hunter 555,509
Railway rail cutting machine, W. B. Hammond 555,696
Railway signal, electrical, W. Fiedler 555,601
Railway system, electric, A. J. Beitzel 555,800
Railways or other electric conductors, bond or connector for electric, Bournonville & Zimmele 555,846
Reamer, expansible shell, J. A. Little 555,905
Reel. See Wire reel.
Refrigerator crate, Thomas & Truby 556,835
Register. See Telephone call register,
Revolving case, W. L. Yost 555,550
Rock drill feed screw, W. A. Keyser 555,604
Rope tie, J. P. Hisley 555,770
Rowlock, O. O. Storle 555,747
Saddle, harness, W. A. Walker 555,592
Safety pin, Curran & Whalley 555,723
Sail, fore and aft, G. H. Wilson 555,631
Sash, window, L. H. Broome 556,597
Saw, drag, N. A. Reeves 555,884
Saw for sawing meats, etc., swinging, J. Marshall 555,649
Saw, inserted tooth, A. Krieger 555,518
Saw sharpener, C. H. Douglas 555,587
Saw tooth, detachable, A. Krieger 555,517
Saws, machine for making, G. P. Salisbury 555,620
Scale bearing, C. A. Heyer 555,768
Scale poise, G. L. Prescott 555,881
Scale, weighing, A. Rebelski 555,661
Scourer and polisher, J. N. Wheeler 555,629
Scouring or buffing wheel, A. C. Winn 555,719
Screw cutting tool, L. Lemieux 556,849
Seed and fertilizer distributer, combined, T. R. Crane 555,897
Seed delinting machine, cotton, F. W. Cross 555,565
Separator. See Grain and seed separator. Magnetic separator. Oil and water separator. Steam separator.
Separator, O. M. Morse 556,874
Sewing machine, F. A. Mills 555,824
Shears. See Sheep shears.
Sheep shears, R. P. Landrum 555,778
Shelf bracket, T. Corscaden 555,722
Shell, explosive, E. M. Johnson 555,774
Signal. See Air brake signal. Railway signal.
Signaling circuit, J. J. O'Connell 555,707
Sifter, ash, P. A. Welch 556,593
Skate, roller, A. R. Fergusson 555,501
Skirt, bicycle, A. Sessler 555,535
Skirt supporter, J. M. Davies 555,682
Sleigh, J. Bellinger 555,555
Sleigh runner, O. A. Moe 555,580
Smelting furnace, C. Cunningham, Jr 555,680
Soap cake, L. S. Samuel 555,663
Soldering clamp, plumber's, M. Slotkin 555,624
Soldering machine, can, G. E. Lockwood 556,782
Sole cutting machine, J. J. Heys 555,864
Sole leveling machine, E. E. Winkley 555,548
Sole leveling machines, adjusting device for, E. E. Winkley 555,547
Sole or heel, J. H. Borrett 555,558
Soles, carriage for rounding out machines for boot or shoe, A. C. Winn 555,718
Spectacles, repair clamp for, S. Chase 556,496
Speed indicating alarm, J. W. Darley, Jr 555,853
Speed measure and alarm, G. E. Kastergren 555,775
Spinning machine separator, E. M. Whittum 556,911
Spinning machinery, cop and tube, Gilyard & Ward 556,504
Stamp applying machine, G. M. Guerrant 556,644
Stationery articles, receptacle device for, L. F. Ford 556,502
Stave bending machine, J. Deters 556,566
Steam engine, balanced, J. J. Heilmann 555,698
Steam generator, C. R. Benton 555,754
Steam separator and trap, F. T. Howell 555,701
Stethoscope, A. R. Mitchell 556,522
Stone saw, circular, A. Mills 556,611
Stoves, automatic lighter for gas, W. J. Gurd 555,705
Stovepipe attachment, G. G. Calderwood 555,962
Strainer, tea, A. R. Pritchard 555,736
Straw stacker, pneumatic, Huber & Miller 555,902
Swaging machinery, W. O. Bement 555,635, 555,721
Swaging machinery, A. H. Dean 555,641
Swing, W. H. Richmond 555,887
Table. See Extension table.
Table implement, J. Treibus 555,627
Tacking machine, E. Woodward 555,595
Tag stringing machine, H. L. Chapin 555,637
Tank heater, S. D. Strong 555,667
Telegraphy, facsimile, A. W. Storm 555,626
Telephone call register, H. Hempel 555,645
Telephone line apparatus, party, A. S. Hibbard 556,725
Temperature regulating apparatus, W. P. & F. W. Powers 556,660
Thermometer and barometer, S. Richardson 555,828
Thermometer, oven, A. P. Harland 556,697
Thill support, H. F. Goding 555,505
Thrashing machine, W. J. Randolph 555,533
Tie. See Rope tie.
Tile, wall, J. V. V. Booraem 555,872
Timing apparatus, G. F. Brackett 555,847
Tool holder, J. S. Norton 555,733
Toy, F. B. Scaife 556,740
Trace carrier, H. W. Cooper 555,678
Trace carrier, Gilliland & Nevill 555,900
Track, H. B. Camp 555,901
Track gage, Payne & Jeter 555,525
Track structure, Howe & Angerer 555,772
Treadle mechanism, Sanford & Barnard 555,739
Trees from vermin, means for protecting, A. D. Goodwin 555,901
Trimmer. See Cue trimmer.
Trolley bead, W. H. Carr 556,674
Trolley pole and connection, C. H. Finson 555,571
Trough. See Feed trough.
Trousers, L. S. Shauer 556,587
Truck, C. S. Percy 555,532
Truck and its gear, car, E. Peckham 556,526
Truck, car, E. Peckham 556,530
Truck, freight car, E. Cliff 555,563
Truck, hand, J. Pleukharp 556,584
Truck, radial car, J. H. Graham 556,857
Tub. See Bath tub.
Type line justifier, G. W. Sberer 556,907
Type writing machine, E. Terry 556,541
Type writing machine, F. Wolter 556,594
Type writing machines, carbon holder for, M. J. Sunderlin 555,748
Typograph, H. W. Libbey 555,519
Umbrella, M. G. McGuire 556,729
Umbrella ribs, name or mark tablet for, S. Learoyd 555,780
Valve, H. T. Bush 555,759
Valve and stopper, G. H. F. Schrader 556,664
Valve mechanism, steam engine, Haberkorn & Haley 556,858
Valve operating mechanism, throttle, K. Rushton 555,738
Valve, piping, W. B. Spencer 555,588
Valve, tank, P. Harvey 555,861
Valve, tire or like, G. H. F. Schrader 555,625
Vegetable mincer, J. W. Taylor 555,834
Vehicle brake, D. P. Martin et al 555,871
Vehicle brake, automatic, H. L. Bailey 555,720
Vehicles, foot rest for light driving, L. S. Logan 555,576
Velocipede, E. G. Latta 556,647, 555,648
Verticalboiler, W. Hardwick 556,766
Voting booth, Fairbank & Langley 556,568
Wagon, stone, D. N. Butterfield 555,673
Warping machine, skein, W. P. Kirkpatrick 555,646
Washing machine, J. A. H. Adolph 555,842
Washing machine, B. Beland 555,844
Washing machine, H. Treichler 556,591
Water closet flushing device, W. R. Baker 555,798
Water beater, J. W. Hazell 556,767
Water heating apparatus, J. S. Coe 555,675
Water tube boiler, J. I. Thornycroft 555,543
Wheel. See Emery wheel. Scouring or buffing wheel. Wind wheel.
Whip, Kelly & Cullins 555,776
Whist, apparatus for duplicate, W. T. Johnson 555,903
Wind wheel, N. H. Dolsen 556,806
Winding cone, J. C. Coram 556,564
Winding machine, shuttle cop, S. W. Wardwell, Jr 556,790
Windlassing machine, J. Matbison 555,521
Windmill tower, D. E. Barnard 555,799
Window, O. K. Hugo 555,726
Window, F. G. Uhlich 556,837
Wire into lengths, machine for measuring and cutting torsion braided, D. A. Cobb 556,638
Wire reel, O. M. Knox 555,516
Wood rims or bands, apparatus for making, Stall & Walton 556,625
Wool cleaning apparatus, O. Reichenbach 555,885
Wrench, P. P. Collins 555,677
Wrench, J. Traudt, Jr 555,716
Wrench, J. D. Wilson 555,797

DESIGNS.

Bottle, L. W. Merriam 25,207
Button, D. C. Fauss 25,205
Button fastening, F. S. McKenney 25,206
Cap, O. D. Shaw 25,235
Carpet, A. Bunel 25,229, 25,230
Carpet, J. B. Campbell ..... 25,220 to 25,225
Carpet, H. T. George 25,227
Carpet, F. M. Parker 25,226
Carpet, A. M. Rose ..... 25,231 to 25,234
Carpet, N. S. Stewart 25,228
Cigar cutter frame, E. Walker 25,209
Gas fixture, G. W. Davis 25,212
Hame, Mowry & Rosenburgh 25,214
Hot water beater or boiler, J. A. Fish 25,213
Nail, Flint & Howard 25,211
Pattern, decorative, G. de Festetics 25,219
Picture frame moulding, C. Bosworth ..... 25,215 to 25,218
Plate, etc., A. B. Sellers 25,208
Slipper, M. Authier 25,236
Spoon, W. H. Deuble 25,204
Stereoscopes, bridge piece for, H. S. Walbridge 25,210

TRADE MARKS.

Bicycles, McKee & Harrington 27,917
Bicycles, velocipedes and horseless carriages, their parts and attachments, L. Straus & Sons 27,916
Blanc-mange, prepared, H. W. Gowen 27,8
Boilers, steam and hot water, Gurney Heater Manufacturing Company 27,913
Coffee, prepared Golden Laxative Coffee Company 27,893
Cotton, darning, Merrick Thread Company 27,884
Electric batteries, Stanley & Patterson 27,912
Engines, internal combustion, Otto Gas Engine Works 27,914
Grindstone, natural, Edgemont Stone Company 27,907
Heating supplies, including radiators, pipe fittings, tubing and similar goods, hot water and steam, Sumner & Goodwin 27,915
Iron, pig, Henry H. Adams & Company 27,909
Lamps and lanterns, chimneys for, R. Marsh 27,890
Lamps, carbons for electric arc, Schiff, Jordan & Company 27,911
Lozenges and other confections, G. J. Blome 27,894
Metal, A. Chambers 27,908
Paper shot shells, Union Metallic Cartridge Company 27,902, 27,903
Paper, wall, A. Peats 27,888
Pianos, P. J. Cunningham Company 27,918
Pins, hairpins, clips and other metal fastening devices, safety, Consolidated Safety Pin Company 27,889
Plaster, wall, Keystone Plaster Company 27,905
Powder, foot, T. J. Lewis 27,899
Powder for the feet, chemical, C. L. Carpenter 27,900
Powder, smokeless, Rheinisch-Westfalische Sprengstoff-Actien-Gesellschaft 27,901
Remedies, certain named, Majert & Ebers 27,896
Skirt binding, Stewart, Howe & May Company 27,885
Soaps, perfumes, powders, pastes, lotions, waters, cosmetics and salves, D. S. Brown & Company 27,895
Soda, caustic, J. Forster 27,898
Stationery, firm of G. Vickers 27,886
Stationery and visiting cards, wedding and correspondence, Stationers' Engraving Company 27,887
Stone, natural building, Edgemont Stone Company 27,906
Tacks, H. C. Tack Company 27,910
Tea, Appleton, Machin & Smiles 27,891
Tonics, L. L. Gamble 27,897
Varnishes, oils, wood fillers and analogous goods, F. W. Devoe & C. T. Raynolds Company 27,904

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 25 cents. In ordering please state the name and number of the patent desired, and remit to 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, provided they are simple, at a cost of $40 each. If complicated the cost will be a little more. For full instructions address Munn & Co., 361 Broadway, New York. Other foreign patents may also be obtained.

© 1896 SCIENTIFIC AMERICAN, INC