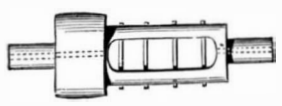
and 767. 7. Can you tell if the new compound Fuller battery is suitable to run a small motor? A. Yes. 8. How many hours will the plunge battery, as given on page 401, "Experimental Science," run the motor as described in SUPPLEMENT, No. 641, at a time? After a rest will this battery regain its power? A. The battery, will but slightly regain power; it will run the motor probably four hours to six hours. 9. How many days approximately will one solution run the motor, using it two hours per day? Approximately, how many days would the zincs last, using two hours per day? A. Two or three days. The duration of the zincs may be based on a consumption of 80 grains of zinc per hour in each cell. Besides this about ¼ of the zinc will be wasted in the part above the fluid, so that it will be safe to take ¾ of the weight of the zinc plates in one cell in grains and divide by 80 to get the hours of duration.

(6721) B. J. C. says: Can you inform me how to make a simple machine for straightening wire? A. Such a tool is shown in the accompanying cut. It consists of a casting about 10 in. in length, having on each end a bearing which may be supported in suitable boxes. The pulley is a part of the casting, and is 3 in. in diameter and 2 in. wide. Four steel pins are inserted 1 in. apart and a little to one side of a central longitudinal line. A hole a little larger than the wire to be straightened is drilled axially through the bearing. The wire passes through the tool over and under the steel pins. It is well lubricated and is pulled through as the tool revolves rapidly.



(6722) W. R. B. says: Will you kindly advise me how to prepare gelatine for making gelatine casts, so that it will be non-shrinkable when drying? A. Allow 12 oz. of gelatine to soak for a few hours in water until it has absorbed as much as it can, then apply heat, by which it will liquefy. If the mould is required to be elastic, add 3 oz. of treacle and mix well with the gelatine. If a little chrome alum (precise proportions are immaterial) be added to the gelatine, it causes it to lose its property of being again dissolved in water. A saturated solution of bichromate of potash brushed over the surface of the mould, allowed to become dry and afterward exposed to sunlight for a few minutes, renders the surface so hard as to be unaffected by moisture.

(6723) R. P. G. writes: 1. I have a set of telephones with Blake transmitters and have them on a metallic circuit, but they do not transmit the sound loudly. How can I fix them? A. We can only suggest that you try adjusting the transmitter. Possibly there is dust on the contacts. 2. Does it make any difference whether you wind a magnet even? A. Only that it gives you less wire in the same volume, except in extreme cases, when the distribution of the lines of force is materially affected. 3. How much sulphate of copper does a Crowfoot battery No. 2 take to ring an electric bell a quarter of a mile off? A. There is no question of how much for one or another piece of work. Put in a layer of crystals an inch or two deep. 4. How can I temper brass? A. Long hammering, drawing or rolling will tend to harden it. Heating to redness and quick cooling softens it.

(6724) P. A. R. asks: 1. Is the acetylene gas practicable for both light and fuel in an ordinary family? A. Acetylene gas has not yet been tried on the large scale. It seems probable that it will be practicable if the price is sufficiently reduced. 2. How expensive is it? A. The calcium carbide costs from 50 to 75 cents a pound, giving, perhaps, 4 feet per pound. This price is prohibitive for everyday uses. 3. Do you recommend the apparatus described in your paper for January 4? A. We consider this apparatus a very good one. 4. Will it be necessary to get a book of instruction for making a gas plant of this kind for family use? If so, where can it be obtained? A. We think not. 5. How can I drill a hole in a glass bottle? A. With a file and spirits of turpentine. Use the file in a brace—drill fashion—and sever the edge from time to time by breaking off little fragments. 6. Is there anything that will take out or obliterate ink writing without injury to the paper? Please give formula. I think I heard of a fluid, made in New York, called "Columbian Ink Obliterator." A. Javelle water or solution of hypochlorites with a preliminary application of dilute sulphuric acid.

TO INVENTORS.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

February 4, 1896,

AND EACH BEARING THAT DATE.

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

Album, F. Reifschneider 554,090
Automatic switch, J. F. McElroy 554,080
Axle box, H. A. Hyle 554,186
Axle boxes, dust guard for car, A. C. & D. W. McCord 554,079
Axle cutter, A. C. Saxton 554,034
Babbitt box, W. Leatch 554,224
Baby walker, J. W. Gerl 554,179
Bale tie fastener, E. A. Jablonsky 554,127
Baling press, L. Block 553,827
Barrel attachment, E. Blount 554,211
Bathtubs, etc., leg for, J. H. Stevens, Jr 553,969
Battery. See Electric battery. Secondary battery.
Bearing, ball, C. F. Pontious 554,064
Bed fastening, metallic, P. H. Mellon 554,132
Bed, folding, M. Samuels 554,144
Bed, folding, G. W. Sanor 553,968
Belt stretching machine, Palencsar & Fischer 554,085
Bicycle air pump, W. H. Ostrander 554,084
Bicycle brake, J. H. Ransom 554,031
Bicycle driving mechanism, G. Beekman 553,826
Bicycle lock, G. R. Hillbouse 554,222
Boiler joint, sectional steam, M. O. Roberts 553,870
Bookbinding, C. A. Evertz 554,114
Book cover, F. S. Palmer 553,963
Book, credit coupon, L. P. Hardy 554,182
Book, manifold account and sales, H. D. Keith 553,916
Book, memorandum, S. S. Newton 554,194
Book, pass, U. G. & W. F. Beck 554,109
Bottle filling machine, R. M. Hunter 553,854
Bottle, nursing, H. Matzen 554,071
Bottle, siphon, S. Taylor 554,154
Bottles, apparatus for removing foil from, G. A. Mueller 553,997
Box. See Axle box. Babbitt box. Cigarette box. Fuse box. Postal car paper box. Signal box.
Box machine, cut-off, C. B. Southard 554,152
Brake. See Bicycle brake. Carbrake. Car power brake. Fire escape safety brake. Fluid pressure brake.
Brake handle, C. H. Gaffney 553,848
Brick machine, T. T. Wood 553,884, 553,885
Bronze to surfaces of paper, etc., apparatus for applying, C. A. Ruddock 553,941
Broom, J. Bowell 554,214
Burner. See Hydrocarbon burner. Lamp burner.
Button and stud, collar, S. J. Stone 553,944
Button making machine, Carlyle & Nageborn 554,052
Button, self-fastening, C. F. Reichelt 553,938
Cabinet table, G. W. Longstaff 553,860
Cable gripper, W. H. Carr 553,898
Calendar, offertory, S. Moore 553,996
Can making machines, attachment for, A. Johnson 554,027
Cane and music stand, combined, J. Mueller 553,867
Car brake, P. Erb 554,113
Car brake, W. Robinson 553,871
Car brake, W. S. Whitney 553,973
Car brake and fender, combined, A. K. Bonta 554,018
Car, burglar proof, S. H. Williams 554,162
Car coupling, Brandenburg & Chilton 553,835
Car coupling, W. M. Robinson 554,201
Car coupling, J. E. Scott 554,146
Car coupling and brake, combined, O'Brien & Miller 554,195
Car door, J. J. Mulligan 554,078
Car door fastening, F. H. Meyers 554,133
Car fender, Gardner & Carney 553,849
Car fender, J. F. Girder 554,119
Car fender, W. H. H. Heydrick 554,064
Car fender, Sicard & Frazee 554,149
Car fender, C. Welsh 554,158
Car fender and brake, G. W. Beard 554,167
Car platform buffer, H. H. Sessions 554,007
Car power brake, railway, Wolbaupter & Jones 553,883
Car window ventilator, C. Whitlow 554,160
Cars, bell cord support for street, P. G. Emery 554,218
Carriage, folding baby, G. Mayer 554,072
Carriage runner, baby, J. Anderson 553,822
Case. See Music case.
Catch, T. F. Bourne 553,832
Cattle guard, surface, B. Wolbaupter 553,882
Chain, drive, R. F. Hall 554,181
Chart, astronomical, L. W. Yaggy 554,101
Chest, flour and meal, J. C. Feraker 554,219
Child carrying strap, M. Collins 554,019
Chopper. See Meat chopper.
Cigarette box, W. D. Pittman 554,140
Cigarette machine, D. B. Strouse 554,096
Cigarette machines, filler forming mechanism for, K. H. Carper 554,216
Clamp. See Line clamp.
Clasp, J. V. Washburne 553,972
Cleaner. See Dish cleaner. Track cleaner. Window cleaner.
Clock, electric programme, H. T. R. Zeidler 553,890
Cloth tentering machine clip, T. M. Lincoln 553,859
Clothes lifter, W. Peterson 554,003
Clothes line pin, L. C. Neal 554,137
Clutch, friction, Heath & Verdin 553,983
Cock for compressed gases, shut-off and regulating, W. F. MacLachlan 553,861
Coffee roaster, J. D. Smith 554,094
Communion service, sanitary, C. Forbes 553,846
Commutator for magneto-electric machines, J. C. Henry 554,063
Coop, poultry, W. T. S. Dickey 553,902
Corn husking and fodder cutting machine, G. S. Gundersen 554,061
Corset busk splint, J. S. Metcalfe 553,865
Cot, folding, E. F. Tilley 4,098
Cotton press, J. Little 553,924
Coupling. See Car coupling.
Cover, preserving vessel, Lee & Hazard 553,922
Covering for runways, etc., F. J. Lennon 554,129
Cue tip, T. P. Folger 553,905
Culinary utensil, W. G. Bolus 554,048
Cultivator, H. M. Burdick 553,837
Cultivator, Franzen & Raschemeyer 554,117
Cultivator and chopper, cotton, Spain & Christopher 554,153
Cultivator attachment, D. Parker 554,087
Cultivator attachment, W. T. Ray 553,937
Cup. See Lubricant cup. Oil cup.
Current regulator, automatic, S. C. C. Currie 553,901
Cutter. See Axle cutter. Feed cutter. Pipe cutter.
Dead centers, mechanism for overcoming, W. H. Johnson 554,223
Dental hand piece, H. C. Register 554,052
Diaper, A. L. Stevens 554,203
Dish cleaner, W. H. Mullins 554,135
Dish cleaner, R. W. Springmire 553,943
Door catch, C. H. Paxson 553,868
Door fastener, sliding, Johnston & Cooper 553,856
Downdraught kiln, W. A. Wheeler 553,947
Drill, C. Blakely 554,209
Dry kiln, A. S. Nichols 553,928
Drying kiln, L. Moore 554,134
Egg beater, etc., S. E. Cripe 554,170
Electric arc lighting, G. R. Lean 553,919, 553,921
Electric arc lighting system, G. R. Lean 553,920
Electric battery, C. J. Hirlmann 4,124
Electric battery, Williams & Hamrick 554,043
Electric conductor and contact device therefor, W. P. Allen 554,103
Electric light switch, H. W. Lawrence 553,857
Electric snap switch, G. W. Hart 554,221
Electric transformer, W. K. Freeman 553,847
Electrical circuit closer, L. B. Miller 554,074
Elevator power wheel, G. S. Fouts 554,023
Elevators, automatic stop mechanism for, C. A. Macy 553,862
Embossing machine, M. E. Converse 554,053
Engine. See Momentum engine. Steam engine.
Evaporating apparatus, liquid, C. W. Cooper 553,841
Eyeglasses, J. H. E. De Celles 553,975
Fabric folding machine, F. Debaitre 554,020
Fare register, M. Stopper 553,876
Fastening device, metal, G. G. Wyland 553,886
Feathers from fowls, device for removing, F. T. Busse 554,050
Feed cutter, E. Little 553,925
Felts and wires, automatic guide for, A. H. Smith 554,093
Fence post, H. L. Frick 5 4,220
Fence stay, A. F. Reiste 554,005
Fender. See Car fender.
Fertilizers, apparatus for reducing garbage for, F. G. Wiselogel 554,206
Filter, Lea & Foulke 553,994
Fire escape safety brake, J. W. Hentz 554,025
Fishplate lock, A. E. Trentowsky 554,156
Fishing reel, T. J. Sutton 554,011
Flame, apparatus for focusing, C. H. Land 553,992
Flange forming machine, P. Shellenback 554,148
Fluid pressure brake, B. S. Park 554,086
Fluid pressure regulator, R. Hardie 553,851
Foot extension, E. L. O'Connor 553,929
Fork attachment, carving, J. Forbes 554,173
Form, dressmaker's, W. J. Boyer 553,834
Frogless switch, C. B. Price 553,934
Fruit splitting machine, S. H. Shelley 554,037
Fumes, apparatus for condensing metalliferous, M. W. Iles 553,989
Furnace, Lutz & Schaefer 4,070
Furnaces, air and steam feeding device for, C. C. Mengel, Sr 554,191
Furnaces, explosive valve for blast, T. Coultas 553,956
Furnaces, pressure alarm for gas supply pipes to, F. S. Baker 554,016
Furniture, W. H. Bean 554,017
Fuse box, J. S. Strouse 554,042
Fuse holder and lightning arrester, H. A. Lewis 554,130
Garment banger, A. C. Jager 554,066
Gas or hydrocarbon burner and furnace, C. H. Land 553,993
Gate, D. H. Good 554,180
Gear for cylinders or other apparatus operated by motive fluids, system of distributing, J. T. F. Conti 554,111
Generator. See Steam generator.
Globe and chimney support, E. S. Butler 554,051
Glove fastener, G. H. Mosier 553,865
Glove fastener, W. W. Whitaker 554,100
Glue heater, J. T. Towsley 553,946
Governor, centrifugal, E. Huber 553,852
Governor, steam engine, H. H. Lane 553,918
Grate, H. McGovern 554,193
Grinding machine, C. W. H. Blood 553,829
Gulley or catch basin, concrete stone, E. North 554,000
Gun, recoil operated bolt, W. W. Kimball 554,068
Guns, apparatus for checking recoil of, A. Von Kerpely 553,990
Guns, ejecting mechanism for breakdown, E. G. Parry 554,002
Hanger. See Garment banger.
Harvester, cotton, Roberson & Moore 554,199
Harvester, self-binding, C. A. A. Rand 554,030
Hay carrier and elevator track, J. E. Porter 554,198
Hay carrier sling, P. A. Myers 554,136
Header and means for manufacturing same, wrought metal, C. P. Higgins 553,912
Heater. See Glue heater. Vehicle beater.
Hinge, blind, T. Corscaden 553,955
Hinge, blind, G. W. Parker 553,931
Hinge, blind, W. E. Stevens 553,970
Hoisting machine brake, C. E. Maris 554,131
Honey section press and foundation fastener, combined, H. Rauchfuss 553,936
Hook. See Whiffletree hook.
Horse detaching device, J. Friedlander 554,118
Hose band, Teal & Crate 554,155
Hose lining apparatus, B. L. Stowe 553,877
Hose nozzle, H. Nicholsburg 553,999
Hose, nozzle holder and spraying attachment for garden, Rolland et & Gray 553,940
Hydrant, Atkinson & West 554,166
Hydrocarbon burner, W. F. Karch 553,915
Ice harvesting machine, D. B. Arnold 554,165
Igniting device, electrical, W. Kaiser 553,960
Insulating joint, W. O. Duntley 553,844
Iron. See Smoothing iron.
Joint, manufacture of, C. P. Sherk et al 553,875
Joint. See Boiler joint. Insulating joint.
Kiln. See Downdraught kiln. Dry kiln. Drying kiln.
Kitchen cabinet, J. C. Wollerman 554,163
Label attaching machine, S. R. Thayer 554,012
Lamp, bicycle, S. Snell 554,009
Lamp, bicycle, E. L. Williams 554,044
Lamp burner, J. C. Shull 554,038
Lamp, electric carriage, P. H. Quinn 554,089
Lamp, self-extinguishing, J. Gregory 553,959
Lamp, vapor, W. Stone et al 554,039
Lamps, regulating socket for incandescent, A. B. Hendricks 553,911
Lathe for boring and facing pulleys, P. Shellenback 554,147
Lifter. See Clothes lifter. Stove lid lifter.
Ligature receptacle, G. M. Stratton 554,040, 554,041
Line clamp, P. Rohne 554,006
Liquors, manufacturing fermented and distilled, A. Myers 553,998
Lock. See Bicycle lock. Fishplate lock. Safe lock.
Locomotives, system of supplying water to, A. L. Rich 553,967
Lubricant cup, J. H. Shepbeard 554,092
Lubricator, A. T. Ballantine 554,105
Lubricator, E. Huber 553,853
Match machine, E. J. Young 553,888
Measuring and marking fabrics, machine for, Borchers & Forrester 553,835
Measuring device, J. L. Ackerman 553,820
Meat chopper, mixer, and disintegrator, combined, J. W. Farnoff 554,021
Metal strips, machine for winding, F. Purdy 553,935
Metal wheel, F. J. Cooper 554,054, 554,055
Momentum engine, Miller & Collins 554,073
Motion, device for converting, E. W. Hammon 554,062
Mower, J. F. Steward 554,010
Mower, lawn, E. W. McGuire 5 4,081
Music case or portfolio, E. F. Greene 554,060
Music chart, L. J. De Meules 554,172
Music holder, folder and stand, W. Wholton 554,161
Mustache guard, C. Brunn 553,836
Napkin holder, W. Bower 553,833
Oil cup, C. G. Y. King 553,991
Oil cup, C. C. Tyler 553,971
Oil for calming waves, apparatus for distributing, D. Knowles 554,128
Ore concentrator, Rice & Farrar 554,143
Oversboe fastener, G. C. Poling 553,933
Oversboe retainer, F. F. Foster 554,174
Pad. See Paper pad.
Paint, W. J. Reynolds 553,906
Paper bordering machine, P. Gagnieur 553,908
Paper doll, E. C. Betzig 553,893
Paper pad, S. J. Chadwick 554,110
Paper pulp, etc., machine for straining, Torrance & Howell 553,945
Paper tubes, machine for securing seams of, D. B. Strouse 554,095
Pen, ball fountain, S. E. Kochendarfer 554,189
Pencil, C. W. Boman 554,212
Perforator, check, F. Zander 553,889
Perfuming device, F. G. Fisher 554,115
Piano case, T. T. Fischer 553,904
Pianoforte action, T. Cahill 554,108, 554,109
Piano keyboard coupler, E. A. Boehm 553,829
Pin. See Clothes line pin.
Pipe cutter, J. N. Marso 554,028
Planter and cultivator, cotton, S. V. Weeks 554,013
Planter, corn, Hoobler & Headlee 553,913
Planter, potato, T. H. Williams 554,015
Planter, walking seed, L. White 554,159
Plaster, T. W. Heinemann 554,183
Plaster, W. M. Reese 554,142
Plow, E. B. James 553,914
Plow grain drill attachment, gang, A. J. Malsbary 553,926
Plow mouldboard, J. Oliver 553,930
Plow, wheeled, S. B. Secrist 553,874
Portfolio, L. W. Yaggy 553,887
Post. See Fence post.
Postal car paper box, H. H. Sessions 554,008
Potato separator, J. Bach 553,891
Press. See Baling press. Cotton press. Honey section press.
Preservation of vegetable substances, J. S. Du Bois 553,976
Profiling machine, Heath & Verdin 553,984
Profiling machine, multiple, Heath & Verdin 553,988
Propeller screw, A. W. Case 553,953
Pump, lift, J. W. Alton 554,164
Pump, mining, W. Nance 554,082
Pump valve motion, J. Stumpf 553,878
Pump, water purifying force, D. Heins 553,910
Pumps, valve gear for force and suction, E. W. Koster 553,961
Puzzle, S. A. Bartlett 553,824
Rails to metallic sleepers, securing, J. Whitestone 554,014
Railway, electric, A. Casazza 553,952
Railway, electric, F. C. Esmond 553,979
Railway, electric, Esmond & Gray 553,980
Railway frog, E. N. Grigware 554,120
Railway signaling and switching apparatus, J. D. Taylor 554,097
Railway switch, F. Jewell 554,026
Railway switch, F. Mathews 553,995
Railway systems, circuit controlling device for electric, F. C. Esmond 553,981
Railway ties, manufacturing composition, J. H. Amies 553,821
Railways, automatic gripping device for inclined, O. M. Smith 553,942
Railways, underground system for electric, W. P. Allen 554,102
Railways, underground system for electric, Allen & Krotz 554,104
Ratchet movement, Heath & Verdin 553,987
Recorder. See Sales recorder. Time recorder. Time and signal recorder.
Reel. See Fishing reel.
Reel, White & Lloyd 554,226
Refrigerator, G. W. Jennings 553,856
Register. See Fare register.
Regulator. See Current regulator. Fluid pressure regulator.
Releasing device, animal, J. A. Beamisderfer 554,208
Revolver cylinder stop, C. Foehl 554,058
Roaster. See Coffee roaster.
Safe lock, J. H. Hulse et al 554,126
Sales recorder, manual, W. H. Breakspear et al 554,049
Sandpaper holder, A. Hornig 554,065
Sash, window, C. C. Miller 554,075
Sawing machine, A. G. O'Neil 554,001
Scaffold, F. B. Gilbreth 554,024
Scale, C. F. Edminster 553,978
Scraper, road, H. M. Weaver 553,881
Scraping tool, J. A. Traut 553,879
Screen. See Window screen.
Screen, G. D. Henry 554,122
Screwdriver, electrician's, J. Reece 553,965
Secondary battery, A. E. W. Boucher 553,831
Separator. See Potato separator. Steam separator.
Sewing machine tuck marker, F. L. Goodrich 553,850
Sharpener, scissors, G. R. Ford 554,116
Shears. See Sheep shears.
Sheep shears, S. L. Cohoon 553,954
Shelf and table, convertible, A. J. & J. Jameson 554,187
Shelving, roller, H. N. Booz 554,213
Shirt collar fastener and adjusting device, Wolgemuth & Engle 553,950
Shock compressor, B. H. Long 553,902
Shutter, ash, H. E. Buck 553,896
Sifter, flour, C. P. Eichler 553,845
Signal apparatus, non-interfering, J. J. Ruddick 553,873
Signal box, non-interference, F. W. Cole 553,839
Signal box, successive non-interference, F. W. Cole 553,838, 553,840
Singletree, H. T. Foster 554,175
Sled runner coupling, S. Yates 553,951
Smoothing iron, F. M. Fournier 554,176
Soldering machine, can, J. Solter 554,151
Sole laying machine, E. E. Winkley 553,948, 553,949
Sole leveling machine, E. C. Judd 554,067
Speaking tube, C. A. Bartliff 553,825
Speed gearing, changeable, J. L. Bogert 554,047
Spinning and twisting machine, R. Dawes 554,217
Spring support for body loops, C. A. Behlen 554,107
Steam engine, H. W. Forslund 554,022
Steam generator, A. W. Finlayson 553,982
Steam separator, C. W. Baker 553,892
Steering apparatus, ship, G. F. Woodman 554,045
Storm protector, G. W. Harmer 554,121
Stove, gas heating, A. L. Pitney 554,197
Stove lid lifter, J. W. Smith 554,150
Stove, vapor, W. H. Woodard 554,207
Stoves, safety casing for oil or gasoline, J. A. Ruth 554,033
Strap. See Child carrying strap.
Strap machine, Leibe & Vanderpool 554,069
Street cleaning machine, C. Beckwith 554,168
Sugar, etc., treating, F. G. Wiechmann 553,974
Suppository and making same, D. Genese 553,907
Suppository machine, D. Genese 554,178
Surveying instrument, Legh & Maclear 554,190
Swing, revolving, G. H. Carlson 554,215
Switch. See Automatic switch. Electric light switch. Electric snap switch. Frogless switch. Railway switch.
Table. See Cabinet table.
Tag or card receptacle, bag, E. P. Cushman 554,171
Telegraph key, W. Deats 554,112
Telegraphy, P. B. Delany 3,957
Telephone, S. A. Dinsmore 553,843
Telephone apparatus, C. J. Schwarze 554,036
Telephone registering apparatus, F. Quatram 553,964
Telephone signal bells, adjusting attachment for, C. F. Dunderdale 553,977
Telephone system, W. A. Houts 554,125
Telephony, C. A. Randall 554,141
Thill support, C. Schifferly 554,202
Thrashing machine, H. S. Bonnell 553,894
Time and signal recorder, electric, C. E. Ongley 554,033
Time recorder, workman's, D. Hepp 554,123
Time recorder, workman's, B. S. Wakeman 553,880
Tire, inflatable wheel, A. Pulbrook 553,869
Tool, combination, C. E. Billings 554,046
Toy, M. Bolton 553,830
Track cleaner, J. Baringer 553,823
Track sander, F. M. Dean 554,056
Transplanter, J. S. Ober 554,139
Trolley, electric, N. Muslar 553,927
Trolley wires, spring supporting ear for, C. A. Lieb 553,858
Trousers waistband, J. Schwarz 554,035
Truck, baggage, W. D. Over 554,196
Trusses, metallic block for roof or other, L. Duvinage 553,903
Tube. See Speaking tube.
Turbine, steam, C. A. Parsons 553,932
Turpentine back, E. Blount 554,210
Typewriting machine, P. Deming 553,842
Typewriting machine, Heath & Verdin 553,909
Typographic machines, tablet holder for, Heath & Verdin 553,986
Typographic machines, type carrier for, Heath & Verdin 553,985
Valve, J. Robinson 553,939
Valve attachment, safety, M. L. Bush 553,887
Valve mechanism, steam engine, C. Schmid 554,145
Valve, straightway stop, G. P. Vincent 554,205
Vehicle beater, T. H. C. Beall 554,166
Vehicle running gear, T. G. Mandt 553,864
Veil fastener, L. M. Graham 554,059
Vending instrument, A. W. & A. H. Roovers 553,872
Ventilator. See Car window ventilator.
Violin tuning peg, G. B. Durkee 554,057
Washboard, Garnes & Zimmerman 554,177
Washboard holder, J. A. W. Sears 554,091
Washer, H. H. Unz 554,099
Welding machine, automatic, Phillips & Nickerson 554,029
Welding apparatus, electric, H. Lemp 553,923
Well drilling machine, E. Catlin 553,899
Well tubing, gas or oil, T. Moore 554,076
Wells, apparatus for forcing water, etc., from natural gas or other, J. K. & W. B. Johnston 554,188
Wheel. See Elevator power wheel. Metal wheel.
Wheels, manufacture of, W. Strait 554,204
Whiffletree hook, T. G. Mandt 553,863
Whistle controlling device, electrical, A. E. Colgate 553,900
Whistling and musical rattle, A. A. Freeman 553,958
Wind power, mechanical and electrical development and storage of, Negbaur & Feely 554,138
Window cleaner, P. Mulhern 554,077
Window frame, Payment & Hartig 554,088
Window screen, G. K. Monroe 554,192
Wire bending and cutting machine, F. B. Griswold 553,908
Wire, machine for inserting screw threaded, S. W. Robinson 554,200
Wrench, W. H. Rush 554,225
Wrench, J. M. Watson 554,157
Zinc, apparatus for refining, G. M. Holstein 554,185
Zinc, process of and apparatus for refining, Holstein & James 554,184

DESIGNS.

Badge, F. C. Combes 25,113
Brush core, H. M. Livor 25,120
Button, J. M. Litchfield 25,114, 25,115
Carriage robe, baby, H. P. Barlow 25,134
Cigar and ash receiver, J. G. Hutchinson 25,121
Comb, etc., M. C. Lefferts 25,119
Glove fasteners, ball member for, F. F. Raymond, 2d 25,117
Lamp vase, L. Hornberger ..... 25,123 to 25,125
Level frame or block, J. A. Traut 25,130
Pan, W. Fowler, Jr 25,131
Pan, Kahn & Martin 25,132
Paper cutter, J. Slater 25,116
Pipe swage, Dockery & Chouteau 25,127
Pitcher or similar article, A. B. Evans 25,122
Scissors sharpener frame or block, J. W. Slayton 25,126
Shutter bower bracket, G. F. S. & H. Zimmerman 25,129
Skirt retainer, J. T. Moore 25,118
Sleigh, H. A. Moyer 25,135
Stove ash box, L. Kahn 25,133
Telephone toll box, W. Gray 25,128

TRADE MARKS.

Beer, lager, H. Koehler & Company 27,745
Bicycles, National Sewing Machine Company 27,758
Bicycles and tricycles, S. D. Warfield 27,759
Boots and shoes, men's, boys', and youths', Chase, Merritt & Company 27,728
Canned bulled corn, Western New York Preserving and Manufacturing Company 27,742
Cigarettes, Liggett & Myers Tobacco Company 27,751
Cigars, C. Lawrence & Company 27,749
Cigars, J. J. Murphy 27,750
Dairy products, certain named, T. W. Brady & Company 27,741
Dentifrices, tooth brushes, and packages of same, J. P. Hendrick, Jr 27,731
Firearms and ammunition, Wiebusch & Hilger 27,755
Flour, wheat, Novelty Mill Company 27,743
Liniments, T. S. Waltman 27,740
Lotion for the skin, G. K. Hopkins 27,739
Medicinal preparations, certain named, E. Mather 27,737
Medicinal tablets, certain, Firm of J. A. & W. V. Ritter 27,738
Mineral water, aperient, E. Steinkopff 27,744
Mordants for dyeing purposes, Gilbert Brothers & Company 27,732
Paint, enamel, F. Furness 27,733
Paper and envelopes, Central Ohio Paper Company 27,729
Pens, writing, E. L. Horney 27,730
Remedies, certain named, F. E. E. Shaw 27,736
Remedy for epilepsy and other nervous diseases, fluid, S. A. Richmond 27,734
Remedy for liver diseases, E. L. Andrews 27,735
Rum, Jamaica, W. A. Taylor & Company 27,747
Sewing machines and attachments, Standard Sewing Machine Company 27,756
Threads of all kinds, Jonathan Harris & Sons 27,727
Tires, pneumatic bicycle, Spaulding & Pepper Company 27,757
Tobacco, chewing and smoking, R. J. Reynolds Tobacco Company 27,752
Tobacco, smoking, Richmond Cavendish Company 27,753
Whisky, Firm of C. Nelson 27,776
Whisky, W. A. Taylor & Company 27,748
Wire goods, Oakville Company 27,754

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