ment of ephelis, and always greatly ameliorating lentigo, even if it does not entirely decolorize the patches in the latter case. A general whitening of the skin is produced by this lotion without any irritation. It is as well, however, not to apply it to any abraded surfaces. It has been found far superior in practice to a preparation—which it somewhat resembles—sold at a high price in Paris under the name of Lait Antiphelique.

(6508) H. N. M. says: How can I ink typewriter ribbons? A. Take vaseline (petrolatum) of high boiling point, melt it on a water bath or slow fire, and incorporate by constant stirring as much lamp black or powdered drop black as it will take up without becoming granular. If the fat remains in excess, the print is liable to have a greasy outline; if the color is in excess, the print will not be clear. Remove the mixture from the fire, and while it is cooling mix equal parts of petroleum, benzine, and rectified oil of turpentine, in which dissolve the fatty ink, introduced in small portions by constant agitation. The volatile solvents should be in such quantity that the fluid ink is of the consistence of fresh oil paint. One secret of success lies in the proper application of the ink to the ribbon. Wind the ribbon on a piece of cardboard, spread on a table several layers of newspaper, then unwind the ribbon in such lengths as may be most convenient, and lay it flat on the paper. Apply the ink, after agitation, by means of a soft brush, and rub it well into the interstices of the ribbon with a tooth brush. Hardly any ink should remain visible on the surface. For colored inks use Prussian blue, red lead, etc., and especially the aniline colors.

Aniline black	½ oz.
Pure alcohol	15 "
Concentrated glycerine	15 "

Dissolve the anilme black in the alcohol, and add the glycerine. Ink as before.

(6509) W. B., Jr., says: Will you please tell how I can make a gallon of perfumed violet writing ink? A. One and one-sixth ounce of so-called primula violet is dissolved in 3 quarts boiling distilled water. This may be converted into a copying ink by adding 4 ounces sugar, 4 ounces glycerine. N. B.—Primula violet is known also as dahlia or Hofmann's violet, of which there exist a number of different shades. Perhaps the finest is that known as No. 6. This coloring matter consists of salts of trimethylrosaniline and triethylrosaniline. Other tints may be prepared from other aniline colors. It is best to add to the solution of an aniline color a small percentage (3 to 5 per cent) of alcohol, and also of glycerine (1 to 4 per cent). To perfume it add the essential oil, which will give the desired odor.

(6510) A. B. D. asks: 1. Why does the whistle of a locomotive in motion sometimes sound higher than it really is? A. Because the engine approaching virtually shortens the sound waves. 2. Are heat and light molecular or atomic forms of motion? A. "Radiant heat" so called and light are forms of ethereal energy; heat, properly speaking, is a form of molecular energy. 3. Is ether an atomic or molecular body? A. The ether is hypothetical and cannot be termed atomic or molecular. 4. If heat and light are molecular forms of motion, is electricity to be considered so also, as it can be changed to either of the former? A. Electricity is best treated as undefinable, and seems apt to remain so for a long time.

(6511) Gravity asks: What will prevent the formation of sulphate of zinc on the outside of the jars of a gravity telegraph battery? I am informed coal oil will give the desired result. Do you think it affects the working strength of the battery? A. Coal oil is used for the purpose named and has no ill effect. Simply coating the edges of the jar with melted paraffin wax will prevent creeping to a considerable extent.

(6512) W. G. R. asks whether there is a dynamo yet made that has no revolving wire. One without a commutator of any kind and producing constant current (not alternating) of high or low voltage. A. There is no dynamo answering fully your description. There is a theoretical or experimental one, Faraday's copper disk dynamo, described in the text books.

(6513) G. S., Jr., writes: I have got some armature punchings for the sewing machine motor described in SUPPLEMENT, No. 759. Can these punchings be wound the same as the carriage washers, and do the projections on them add or take from the efficiency of the armature? Are they ever used in large machines? A. Projections such as you allude to are often used on the armatures of large dynamos. Projections facilitate windmg and diminish slightly the reluctance of the magnetic circuit. They have but little influence on the efficiency of the machine, tending to increase it.

(6514) P. C. T. asks: Can you give the size of German silver wire that will equal in resistance 5 strands of No. 20 German silver? Also what size, using 2 strands, will equal 5 strands of No. 20? The nearest calculation and the probable variance. A. A single lead of No. 13 wire is about 1¼ per cent too large; a double strand of No. 16 is about 1½ per cent too large.

(6515) H. R. O. asks: When the commutator of a dynamo is turned off there is almost always one segment worn deeper than the rest. What causes it to be so? A. Possibly the winding is a little out of balance, and sparking and arcing is accentuated at that point.

(6516) W. W. M. writes: I send a sample of a deposit which we think to be sulphur. It must have been deposited on the night of the 19th of March, as it was not noticed until the 20th, when it was seen to be accumulating at the edges of ponds and all other bodies of water throughout this section. It drifted in some places till it reached a depth of ¼ inch, where the water left it high and dry, and I gathered the inclosed sample to-day by picking it up with my fingers. Some of the old inhabitants say that this deposit occurs here every spring just after a big rainfall. But this time there was no rainfall. It seemed to come with a hard west wind. We have a sulphur mine west of here some 75 miles in Calcasieu Parish; it probably is the source of this deposit. We want to know exactly what it is, and how it came to be here. To-day, while gathering the sample, I noticed thousands of small bugs which seemed to be feeding on the material. A. The yellow powder which you send consists of the spores of a species of pine. The pine trees flower in spring, and this accounts for the presence of the spores as a sulphur-like deposit in your neighborhood every year at that season. Hardly a year passes in which supposed "rains of sulphur," such as this, are not reported from some part of the country.

(6517) A. A. S. asks how to figure the horse power of gas and gasoline engines. A. The proper way to obtain the mean engine pressure is with an indicator and card register in the same manner as with the steam engine. The variation of initial pressure of explosion varies very much, say from 100 to 150 pounds per square inch, and the mean pressure from 50 to 75 pounds, averaging a mean pressure of about 60 pounds. Square the diameter of the cylinder and multiply it by 0·7854 for the area. Then, if the explosive effect is every other revolution, one-half the number of revolutions per minute multiplied by the length of the stroke in feet or decimals of a foot will be the active travel of the piston under pressure. Then

$$\frac{\text{pressure} \times \text{area} \times \text{stroke} \times \frac{1}{2}\ \text{revolution}}{33{,}000} = \text{h. p.}$$

If the explosion is at every revolution, the full number must be put in the formula. If there is cushioning or compression of the air and gas in the cylinder, it must be deducted from the mean pressure. See "Gas and Petroleum Engines," by Donkin, $6.50 by mail. For the method by Prony brake see SCIENTIFIC AMERICAN SUPPLEMENT, No. 992; 10 cents mailed.

(6518) R. B. D. writes: For the past two days we have experienced a succession of heavy vibrations with a simultaneous roar as of a distant explosion. The sky in the direction of the sound (W.S.W.) is clear with a light S.E. wind. Is it possible for us to hear the reports from the Sandy Hook grounds? If not, what can it be? We are at least 60 miles from Sandy Hook light. A. The vibrations and noise were probably from the gun trials at Sandy Hook.

(6519) F. W. S. asks: What preparation would you recommend to be applied to the bright steel and nickel parts of a bicycle to prevent rust? A. Try a colorless lacquer. You can find such in the market made from celluloid. It is very hard and durable. If you want only temporary protection, use vaseline.

(6520) H. P. says: Please give formula for best black varnish for small wooden articles, and the best method of tempering small wire spiral springs. A. Black japan varnish:

Naples asphaltum	50 lb.
Dark gum anime	8 "

Fuse, add 12 gallons linseed oil; boil, then add of dark gum amber, 10 pounds, previously fused and boiled in 2 gallons linseed oil; next add q. s. of driers and thin with oil of turpentine. How to temper a small spring. 1. Heat the spring to a light red, plunge in cold water; hold the spring over the flame of a small fire of shavings until it becomes black, then hold in the fire until the black disappears. Cool the spring by swinging it in the air. 2. Heat the spring to a cherry red, plunge in cold water, and hold over a small fire until warm. Cool with tallow and burn off the tallow over the fire; repeat this process two or three times, cool in water.

(6521) F. E. H. writes: Will you please give me information on the following subject? I have a spring of water that furnishes 21 cubic feet per minute with a fall of 100 feet in a distance of 300 feet. Please tell me the size of pipe necessary to carry this water. How much power would there be if one of Leffel's new jet wheels were used, and what size nozzle would use all of the water? How much power could be procured with same water, 21 cubic feet with a head of 60 feet, and what size nozzle would it take? A. A 2½ inch pipe will deliver the quantity flowing from the spring with an open end pipe. For power purposes you require a pressure head, for which a larger pipe, 3 inches or 3½ inches, is a better size. Use a ⅞ inch nozzle, which will spout 140 gallons per minute, which will run an impact motor of the Pelton or Leffel type at 400 revolutions per minute, and give you 3 horse power. You will lose head by trying to use all the water on the motor. At 60 feet head with the same quantity of water you may use a 1 inch nozzle and realize 1¾ horse power.

(6522) E. J. P. asks: About how much coal does one of the great ocean steamers like the City of Paris burn in twenty-four hours, at the usual five and a half or six day rate of speed? A. The great ocean steamers burn about 400 tons of coal per day.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

April 30, 1895,

AND EACH BEARING THAT DATE.

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

Addressing machine, F. D. Belknap 538,403
Advertising and educational systems, coin-controlled apparatus for, J. S. Barcus 538,494, 538,636
Advertising fan, T. Lo Casto 538,335
Air brake, cylinder and reservoir mechanism, E. G. Shortt 538,547
Air brake graduating mechanism, E. G. Shortt ... 538,551
Air brake mechanism. E. G. Shortt 538,544
Air brake mechanism and engineer's valve for same, E. G. Shortt 538,549
Air brake operating mechanism, Shortt & Normand 538,546
Air brakes, automatic lock for stop cocks of, Tower & Rich 538,299
Alarm. See Fire alarm.
Alarm system, high pressure, E. G. Shortt 538,548
Amalgamator, G. W. Downs 538,642
Animal trap, L. F. Dagnan 538,241
Armature for dynamos and electric motors, Penn & Lowndes 538,344
Autographic register, A. Krauth 538,264
Autographic register, Shoup & Krauth 538,286
Axle box with removable oil well, H. Siebelschmidt 538,553
Axle cap for vehicles, lubricating, F. E. Harvey .. 538,516
Axle lock, vehicle, L. Hagmeyer 538,372
Bail catcher's hand protector, E. L. Wilson 538,572
Bath apparatus, shower, J. Kelly 538,521
Bath cabinet, E. D. Andruss 538,575
Bathtub hand clamp, L. M. Hooper 538,490
Beam, joist, etc., G. M. Viernow 538,562
Bed. A. R. Turner 538,560
Bed and table, folding, Vocke & Lungstras 538,470
Bell, bicycle, Storm & Hunter 538,607
Bell, gong, N. T. Mills 538,379
Belt fastener, I. Jackson 538,332
Bicycle, L. A. Cooper 538,238
Bicycle wheels, making wooden rims for, H. G. Shepard 538,541
Bicycles, variable speed gearing for, J. M. Scobee 538,287
Binder for pamphlets, etc., temporary, A. Neilson 538,621
Bit brace and hand drill, C. D. Cutts 538,323
Bit jack and holder, W. A. Grove 538,254
Block. See Tackle block.
Blowing engine, C. F. Schaller 538,352
Boat or vessel, C. A. De Lambert 538,527
Boiler. See Hot water boiler. Water tube boiler.
Boiler furnace, steam, O. D. Orvis 538,273, 538,274
Book, blank, Gremmel & Sneider 538,487
Book, check, H. H. Angell 538,491
Book holder, J. W. O. Neill 538,534
Book holder, J. A. Sinclair 538,604
Boots or shoes and making same, metallic fastening for, P. A. Coupal 538,322
Bottle capping machine, L. E. Kane 538,259
Bottle stopper, C. K. Fuchs 538,644
Bottling machine, E. Stahl 538,290
Box. See Musical box.
Box filling machine, C. H. Palmer et al 538,535
Brace. See Bit brace. Ladder brace.
Bracket. See Curtain bracket.
Brake. See Electrical brake.
Bridge or culvert, W. A. Nichols 538,432
Brush holder, E. D. Priest 538,281
Bung extracting tool, D. Poggenburg 538,279
Burner. See Incombustible burner. Oil burner.
Button, W. Hornich 538,416
Button, cuff, C. L. Watson 538,395
Button, hose, J. E. Goggin 538,486
Cabinet or safe, curtain, A. McKenzie 538,430, 538,431
Car, air pipe, and steam pipe coupling, combined, R. L. Munson 538,533
Car bolster, railway, C. T. Schoen 538,296
Car brake adjuster, J. Howard 538,418
Car center bearing, railway, S. Walters 538,563
Car coupling, N. W. Aigler 538,362
Car coupling, G. J. Forrey 538,444, 538,445
Car coupling, T. M. Gallagher 538,580, 538,581
Car coupling, J. M. Harrison 538,695
Car coupling, S. J. Meeker 538,398
Car fender, C. E. Montell 538,436
Car fender and trip, C. Mahon 538,391
Car fender or guard, E. Thomas 538,631
Car, freight, A. J. Adamson 538,439
Car life-saving attachment, street, J. P. Fleming. 538,249
Car register, street, G. Rein 538,283
Car safety attachment, street, O. Beck 538,364
Car unloading device, J. McMyler 538,340
Car ventilator, J. Timms 538,298
Cars, combined clevis and rope placer for, W. L. Nelson 538,341
Cars, means for ventilating electric motors on, J. J. Devine 538,325
Carbon for electrical purposes, manufacture of, Shrewsbury & Dobell 538,289
Card clothing for attachment to flats, machine for preparing, R. W. Hunton 538 419
Carriage step, T. Beecher 538,316
Carrier apron, S. Ferguson 538,443
Cartridge, W. W. McKay 538,620
Case or cabinet, J. E. Maxwell 538,592
Caster, Noelting & Frederickson 538,342
Castings, manufacturing soft steel, F. W. Hawkins 538,646
Chain package and packing chains, J. Sinclair 538,629
Chair. See Dental chair.
Chair fan attachment, rocking, J. Weigel 538,566
Channel flap laying machine, W. L. Barrell 538,637
Chuck, lathe, J. A. Lidback 538,334
Cigar lighter, electrical, H. G. O'Neill 538,272
Clamp. See Bathtub band clamp. Leaf creasing clamp. Tire and felly clamp.
Clasp. See Hat band clasp.
Clock, alarm, T. Westerfield 538,306
Clock pendulum adjuster, D. W. Hull 538,257
Closet seat cover or lid, L. Schonfeld 538,388
Cock and relief valve, combination waste, H. I. Boynton 538,317
Combing machines, automatic stop mechanism for wool, J. H. Rogers 538,537
Commutator brush and means for adjusting same, R. Lundell 538,617
Condenser and oil separator, steam, E. Rowe 538,600
Condensing or evaporating and refrigerating fluids, apparatus for, E. Theisen 538,557
Condensing or evaporating apparatus, surface, E. Theisen 538,558
Conveying apparatus, T. S. Miller 538,455
Cooling and preserving apparatus, E. C. Brown ... 538,233
Copper, process of and apparatus for making compressed electrolytic, F. L. M. Urruty 538,359
Copy holder, E. P. Richardson 538,350
Corn cutter and harvester, T. A. Chapman 538,235
Corn shock loader, L. Sbanks 538,627
Corn shellers, ear corn conveyer for, J. Q. Adams 538,400
Couch and storage chest, combined, Caruthers & Savage 538,503
Coupling. See Car coupling. Car, air pipe, and steam pipe coupling. Electrical coupling. Flexible coupling. Pipe coupling. Rod coupling. Thill coupling.
Crank motion, W. J. Devers 538,242
Crate, bicycle, H. Keller 538,422
Crucible, electrically and chemically heated, H. G. O'Neill 538,271
Crushing ore, etc., machine for, H. H. Blake 538,406
Cultivator, J. O. Carroll 538,319
Curtain bracket, J. Reikart 538,349
Cut-out device, thermal, C. A. Rolfe 538,284
Cutter. See Corn cutter. Loom cloth cutter.
Cycle frame, C. W. Brown 538,232
Damper for fireplace grates, D. Slates 538,356
Dental chair, A. W. Browne 538,407
Dental chair, J. I. Peyton 538,465
Desk, money drawer, and distributer, combination, A. D. Coldren et al 538,236
Display tray or jar, A. D. Work 538,639
Dividing angles into equal parts, instrument for, F. W. Cornelius 538,239
Door catch, J. G. Wait 538,305
Door, screen, A. Schreiner 538,538
Draught attachment for farm implements, J. L. Keagle 538,376
Draught equalizer, plow, H. C. Ritterbusch 538,597
Draw bar attachment, continuous, J. Seatb 538,539
Drill. See Grain drill.
Drill, J. S. Surbaugh 538,358
Drum, beating, J. W. Johnson 538,519
Drying granular materials, apparatus for, E. M. Cook 538,237
Dust beater, C. B. Cadman 538,480
Dusting cloth holder, H. O. Neagles 538,269
Dye, red, Pathe & Dressel (r) 11,491
Electric elevator, N. O. Lindstrom 538,327
Electric engine, L. M. Sabin 538,351
Electric machine or motor, dynamo, E. H. Porter 538,345
Electric transmission wheel or trolley, C. C. Burton 538,408
Electrical brake, C. E. Pearson 538,275
Electrical coupling, Koenig & Mann 538,423
Electrodes, making secondary battery, W. L. Silvey 538,628
Elevator. See Electric elevator.
Elevator, A. B. See 538 355
Emery wheels, mechanism for wetting, E. R. Hyde 538,331
Enameling cradle, reversible, O. Marschuetz 538,458
Engine. See Blowing engine. Electric engine. Rotary engine. Traction engine.
Engine, W. F. Schmidt 538,433
Engine indicator, steam, A. F. Hall 538,515
Evaporating and condensing liquids, apparatus for, E. Theisen 538,556
Evaporating apparatus, R. Schicht 538,387
Exercising device, O. Felden 538,579
Explosive rods or grains, apparatus for making, H. Maxim 538,615
Fabric decorating apparatus, J. B. Schweitzer 538,354
Facing for flattening stones, C. Conqueror 538,365
Fans, diffuser for electric, McKeehan & Miles 538,460
Faucet, J. Byrne 538,502
Feedwater regulator for steam boilers, D. & F. D. Almy 538,402
Fence, F. F. Dickey 538,368
Fence stay, wire, Thompson & Bulla 538,559
Fences, device for attaching stay wires in wire, H. C. Pratt 538,385
Fencing, barbed, T. V. Allis 538,401
File, detachable arch, C. H. Stoelting 538,605
File, document, J. M. Bulkley 538,500
File, saw, A. Weed 538,396
Filter, F. A. Reichardt 538,348
Filter, J. M. Wells 538,360
Finger ring lock, C. Bartlett 536,477
Fire alarm, detonating, R. J. Fleischer 538,643
Fire escape, T. Lemond 538,333
Fire escape, T. J. Lindsay 538,615
Fire escape, Wilber & Lavery 538,308
Fire extinguisher, automatic, J. Naylor, Jr 538,593
Fire extinguishers, valve for automatic, F. Gray .. 538,446
Fire tube cbeck, E. Kemble 538,589
Flexible coupling, F. M. Rites 538,386
Flue cap, F. E. Heinig 536,647
Flue stopper, Haberkorn & Beckman 538,513
Fuel, machine for making artificial, H. S. Albrecht 538,475
Funnel, filter, A. Farmer 538,369
Furnace. See Boiler furnace.
Furnace, G. A. Bell 538,226
Game board, G. A. McKenzie 538,380
Garment presser, C. N. Lansing 538,425
Garment stretcher, J. H. Way 538,564
Garment supporter, A. S. Grimm 538,488
Gas or other meters, stop register apparatus for, H. Green 538,582
Gate, L. Fetch 538,370
Gate, F. A. Whitney 538,307
Generator. See Magnetogenerator. Steam generator.
Glass, method of and apparatus for manufacture of wire, C. H. Tondeur 538,393
Grain drill, O. B. Pickett 538,276
Grate fuel-saving appliance, A. Glud 538,511
Guard rail, R. B. Poole 538,280
Gun breech mechanism, Benet & Mercie 536,227
Harness, W. D. Frederick 538,326
Harrow, sod cutter, and roller, combined disk, G. Richter 538,536
Harrow tooth, spring, E. E. Whipple 538,397
Harvester grain binders, twine regulator or tension device for, J. Macphail 538,426
Hat band clasp, M. & I. Grenthal 538,583
Hay carrier track and coupling therefor, J. D. Swacick 538,293
Hay rake, I. G. Lunday 538,590
Hay rake and loader, J. E. Van Nostran 538,394
Headlight, changeable electric, Dibb & Horabeck 538,243
Heating apparatus, G. F. Anderson 538,635
Hinge, spring, J. Henry 538,448
Hog catching and lifting machine, P. S. Driver ... 538,442
Hoisting tackle, single block for, J. D. Swacick ... 538,294
Horse ice shoe, A. E. Makel 538,452
Hospital screen, Brown & Spaulding 538,318
Hot water boiler, B. Chaffee 538,504
House. See Ice house.
Ice house, C. C. Clifton 538,441
Incombustible burner, C. Westphal 538,568
Index, banker's daily balance, T. P. Thomas 538,438
Indicator. See Engine indicator.
Insulating material, J. W. Kidwell 538,614
Invalid's, table, M. Lesser 538,529
Ironing table, C. R. Mills 538,266
Jack. See Bit jack. Lifting jack.
Jar drying apparatus, fruit, E. B. Ball 538,313
Journal box lid, S. Irvin 538,258
Kiln. See Lumber drying kiln.
Kitchen cabinet, combination, J. Tischer 538,632
Knitted patterned fabric, E. D. Friedlander 538,250
Knitting machine, circular, H. A. Houseman 538,518
Lacing stud or book, E. Maynz 538,428
Ladder brace, step, J. T. Miller 538,531
Ladder, step, F. White 538,570
Lamp, C. Maschmeyer 538,427
Lamp, electric arc, J. A. Mosher 538,457
Lamp gas attachment, W. H. Hill 538,415
Lamp wick raiser, L. J. Atwood 538,476
Last and last support, J. N. Parker 538,623
Lathe, turning, H. Wagner 538,304
Lathing, metallic, W. C. Schaper 538,467
Lathing, sheet metal, G. Hayes 538,256
Leaf creasing clamp, J. Keehn 538,520
Life lines, device for throwing, A. Schmitt 538,626
Lifting jack, J. H. Sheridan 538,392
Lightning rod, H. Simpson 538,603
Lime, apparatus for forming milk of, Cook & Reid 538,577
Liquid raising machine, R. Wegner 538,565
Lock. See Finger ring lock.
Lock strike, T. J. Johnston 538,421
Log transfer, steam, Kelly & Wilkinson 538,613
Loom cloth cutter, J. Zuppinger 538,573
Loom shuttle, G. O. Draper 538,507
Lubricating materials, etc., automatic feeder for, B. & G. H. Waters 538,471
Lumber drying kiln, W. Graham 538,412
Lumber loading or stacking apparatus, W. Graham 538,413
Magneto generator, E. T. Gilliland 538,329
Magneto transmitter, E. T. Gilliland 538,328
Mandrel, flexible, J. M. Smith 538,555
Measuring and cutting fabrics, machine for, Palmer, Jr., & Mercer 538,464
Meat softener, W. J. McCausland 538,459
Mensuration form, A. H. Kennedy 538,261
Metal shearing and punching machine, J. C. Burgess 538,234
Milling machine, F. Kempsmith 538,260
Moulding moulds, device for, Pyle & Martin 538,345
Moulds, apparatus for making sand, D. Giles 538,510
Mop wringer, F. C. Rockwell 538,598
Mosaic work, apparatus for producing, F. Alcan .. 538,311
Motor. See Wave motor.
Motor and pump, combined, T. A. Walther 538,633
Mower, lawn, P. R. Rasmussen 538,347
Mucilage holder, E. Terry 538,297
Music holder, F. D. Gross 538,414
Music leaf turner, J. Miller 538,619
Musical box, F. Schaub 538,468
Necktie, S. L. Bacbrach 538,312
Necktie fastening device, C. Jungmann 538,375
Needle threader, L. L. Borradaile 538,479
Nut and bolt lock, H. L. Wood 538,309
Oculists' testing frames, extension bow or temple for, G. W. Wells 538,567
Oil burner, A. J. Blackford 538,638
Optical sight, M. D. Bonnin 536,230
Orange sizer, A. D. Huntley 536,330
Ore separator, centrifugal, M. B. Zerener 538,310
Ore separator, magnetic, J. W. Carter 538,320
Ore separator, magnetic, J. Houleban 538,417
Otophone, J. A. Maloney 536,378
Overshoe fastener, P. & H. H. Nelson 538,270
Paper feeding machine, Briggs & Philpott, Jr. ... 538,640
Paper folding and pasting machine, T. C. Dexter. 538,609
Paper folding machine, J. N. Nutt 538,622
Paper rolls, winding shaft for, C. P. Smith 538,454
Paper, safety, J. T. Robertson 538,625
Pen, drawing, V. Berdelle 538,229
Pen, fountain, G. W. Bryden 538,499
Pen, fountain, F. S. Cooley 538,461
Pen, fountain marking, A. W. Askew 538,492
Pencil sharpener, O. J. Lane 538,528
Perambulators or staircases, apparatus for lowering or hoisting, H. T. A. Schulze 538,389
Phonograph receiver, F. S. Kinney 538,262, 538,263
Photographer's flashlight apparatus, W. B. Farwell 538,578
Photographic or similar objects, mount for, E. W. Lundahl 538,616
Piano harmonic scale, J. Ebel 538,244
Pile or post driver, H. I. Petree 538,382
Pipe coupling, E. A. Witham 538,634
Pipe threading machine, R. P. Curtis 538,367
Pipes, external metallic joint for, M. F. Moran .. 538,429
Planter clutch, corn, G. S. Gundersen 538,371
Planter, corn, Gundersen & Gilbert 538,255
Plaster, paris green, etc., machine for spreading, W. E. Everitt 538,483
Potassium chlorate, producing, K. J. Bayer 538,314
Powder holder, L. S. Upton 538,561
Press. See Printing press.
Printing press, H. Swain 538,296
Propulsion, boat, J. F. Place 538,278
Puller. See Stump puller.
Pulp, making moulded articles from wood, Lane & Folk 538,265
Pump attachment, W. E. Sullivan 538,436
Pump, automatic air, J. Morehead 538,267
Pump, rotary, J. Klein 538,524
Rail connector, L. E. Myers 538,458
Railway conduit system, electric, F. H. Homan ... 538,373
Railway switch, J. A. Hill 538,449
Railway switch, automatic, M. N. Shumebarger .. 538,602
Railway, underground electric, J. F. Smith 538,357
Railways, block system and apparatus on electric, E. Langen 538,590
Rake. See Hay rake.
Range finder, B. A. Fiske 538,246
Ratchet wrench, A. W. Kleinfeldt 538,525
Refrigerating apparatus, C. W. Isbell 538 374
Refuse preparatory to cremation, apparatus for and process of treatment of city, J. J. Storer .. 538,606
Register. See Autographic register. Car register.
Register, J. P. Cleal 538,410
Register actuating mechanism, P. D. Crull 538,240
Rewinding machine, cord, Palmer, Jr., & Mercer. 538,462
Rock crushing and grinding apparatus, J. H. Kinkead 538,523
Rod coupling, detachable, F. M. Hurtle 538,611
Rolling machine, pipe, W. S. McCracken 538,268
Roofing, metallic, W. H. Mullins 538,532
Rope coiling machine, J. Garsed 538,495