See Sloane's "Arithmetic of Electricity," $1 by mail. 3. Please tell me if it is proper to say amperage or ampage. I have heard the word pronounced both ways. A. Amperage.

(6476) J. F. B. writes: Will you give me the approximate diameter of a windmill that will develop about one horse power with a twenty mile per hour breeze? Also what would be the increase in power with additional wind pressure, say of five and ten per cent? A. An 18 foot mill should be equal to 1 horse power. The increase of power will be as the square of the ratio of the velocity of the wind. Thus 10 per cent to 20 m. is 22 miles, and $\frac{22}{20}$=1·1, the square of which is 1·21, so that the 1 horse power mill will yield 1·21 horse power with a 22 mile wind.

(6477) A. C. M. asks if two of the simple electric motors described in "Experimental Science" can be put on one shaft, and what horse power they would develop together at full capacity, also how many volts and amperes would the two motors require at full load, and whether each motor should be connected separately. A. You can connect as described, and get nearly two-tenths horse power at eight volts and eight or nine amperes.

(6478) W. B. asks: What is the best way to produce the greatest amount of heat by electricity? If possible, give several ways of producing heat by electricity, and state which is the best to create the greatest amount of heat. A. All methods of producing heat by electricity are based on the arc or on plain incandescence of a conductor. For examples of the first we refer you to our SUPPLEMENT, Nos. 904, 905, 901, 986, 610, 840, 635; for the latter method, used on the large scale in electric welding, we refer you to our SUPPLEMENT, Nos. 582, 682, 768, 892.

(6479) D. J. F., Newfoundland, writes: 1. What is a ship's metacenter, and how is the same found? A. The metacenter of a vessel is the point of intersection of the vertical line passing through the center of gravity of the vessel, when in its position of equilibrium, and a vertical line through the center of gravity of the mass of water displaced when the body is careened or heeled over through any given angle, as of a vessel rolling in a sea. It is found by computing the center of gravity of the vessel as it floats when at rest, and the center of gravity of the mass of water displaced at any angle at which the vessel may be careened. The point of meeting of a vertical line from this last point at the angle of careening and the central line of the vessel is the metacenter. The height of this point above the center of gravity of the vessel is the measure of its stability. See Haswell's "Engineer's Pocket Book" for examples, $4 by mail. 2. How is the contour of the keel of a ship found, when the same is not straight, as is very often the case in wooden vessels? Is it found from the keelson? If so, how? And provided the ship be laden, how is it found? A. Irregularities in keel alignment can be approximated by examination of the lines of the keelson. When irregularities are suspected, the keel blocks are made adjustable to bring them to a bearing. With a loaded vessel the problem becomes complex and may require the service of a diver. 3. How is the dead rise, which governs the height of the bilge blocks which support a ship in dry dock, found? A. The bilge blocks should be adjustable in height and angle and also be movable to their proper bearing when the keel touches the keel blocks. The dead rise must also be found by examination inside or outside. 4. Is any treatise or book published giving directions for dry-docking ships? If so, please give the name, price, and where procurable? A. There is no work on dry-docking of ships. We have one copy of Stuart's "Naval Dry Docks of the United States," now out of print, price $6.00.

(6480) G. D. asks: Could you tell me why a permanent magnet was used in a telephone? I thought it was to give tension to the diaphragm. A. It is far more sensitive than an unpolarized core.

(6481) C. W. C. asks: 1. Is the large plunge battery, Fig. 394, in "Experimental Science," sufficient to run a one horse power motor? A. No. 2. Is the dynamo described in SUPPLEMENT, No. 600, with proportions and directions given, suitable for a motor? And if so, could it be driven with above battery, and what power would it have? A. It makes a good motor and can be run with about three times this battery, and would give about ¼ horse power for a short time only. The power would soon diminish. 3. How long would the battery run at full power on one charge? A. It would depend on the current taken from it. It would decrease rapidly after the first half hour.

(6482) H. K. M. asks: 1. How many horse power will it take to equal 1 kilowatt, or what is the relation between 1 horse power and 1 kilowatt? A. 1 horse power is equal to 0·7459 kilowatts. 2. You give a receipt for cleaning clothes, in SCIENTIFIC AMERICAN, of March 16, page 166. Does it make any difference how this should be mixed? If so, which should be mixed first? A. It makes little or no difference how the ingredients are mixed. 3. In your columns you advertise the "Kombi." Is it a success? How long will one last, and what will be expense of having negatives finished? A. Address the advertisers. They will give you all the information desired.

(6483) C. A. C. asks: 1. Which will work on the longest line (the line being metallic circuit) a Blake or a Hunning transmitter? A. We cannot undertake to pronounce upon the relative merits of the two transmitters. Both are good. The Hunning's transmitter is described in the SCIENTIFIC AMERICAN, vol. 64, No. 4. 2. What is the internal resistance of ordinary gravity batteries? A. Two to four ohms. 3. Some of the SCIENTIFIC AMERICANS tell how to make storage batteries. A. See SCIENTIFIC AMERICAN, vol. 62, No. 10; vol. 65, No. 22; vol. 68, No. 9; vol. 69, No. 20; and our SUPPLEMENT, Nos. 838, 845, and 997. 4. What is a two phase alternating dynamo? A. A dynamo of the simple alternating current type produces a single phase current. By special connections it may be made to give polyphase currents. In Walmsley's "Electric Current," $3 by mail, page 458 et seq. the production of polyphase currents is very well explained. A two phase dynamo gives a two phase current.

(6484) A. L. asks: 1. How is it that a 15 candle power incandescent lamp, as well as a 16 candle power lamp, can be bought, the first one needing only about 15 volts to make it give the proper light, and the second one will require some 50, 75, or 125 volts to make it give the proper light? See E. S. Greeley's Catalogue, N. Y. A. The low voltage lamps are of proportionally lower resistance; hence they pass more current, so that the watts per candle power are the same in all. The watts is the unit of rate of work—the volt is merely the unit of electric pressure. 2. How is the aluminum iodine battery made, what are the elements and charging fluid, and what is its lasting power and quality, both with regard to material as well as electricity? A. Carbon and zinc are the electrodes; the excitant is a paste of aluminum chloride, zinc oxide, manganese dioxide and water; the depolarizer is iodine sulphide or a mixture of iodine and mercuric oxide. The battery proved unsatisfactory on the time test. The voltage was 1·4 to 1·65. An illustrated paper on the subject appeared in the Journal of the Franklin Institute for March and April, 1893.

(6485) E. A. Le S. asks: Where can I find the results of a complete analysis of common sea water? A. The following is of sea water from the British Channel:

Water	963·745
Sodium chloride	28·059
Potassium chloride	0·766
Magnesium chloride	3·666
Magnesium bromide	0·029
Magnesium sulphate	2·296
Calcium sulphate	1·406
Calcium carbonate	0·033

—Schweitzer.

(6486) P. C. S. asks: How can a Leyden jar be disruptively discharged so you can get a current vibrating with extreme rapidity? If a two quart jar were charged by a battery and then discharged as above, would the current be dangerous, or will it run one of Tesla's coils? A. The ordinary discharge of a Leyden jar is of the character you describe, but as the entire duration of the discharge is very short, it cannot be used for a Tesla coil.

(6487) J. M. B. says: Will you have the kindness to give a receipt for making camphor ice? Also do you publish a book on manufacturing perfumery and cosmetics? A. 1. Oil of sweet almonds, 2 ounces; spermaceti, 4 ounces; white wax, 2 ounces; camphor ⅛ ounce; melt them over a water bath, run in moulds of proper size and form. 2. Expressed oil of almonds and rose water, each 1 pound. White wax and spermaceti, each 1 ounce. Camphor, 2 ounces. Oil of rosemary, 1 drachm. Melt together. Glycerine may be substituted in part for the oil and rose water. From our "Cyclopedia of Receipts, Notes and Queries," price $5, which contains several hundred formulas for cosmetics, perfumery, toilet preparations, etc.

(6488) C. H. asks: How many B. T. U. (or heat units) are there in one gallon of alcohol as compared to one gallon of coal oil? A. For a pound of alcohol the thermal units are 12,929; for a pound of petroleum, 27,531. You may take refined coal oil as of about twice the heating power of alcohol.

(6489) A. C. asks: 1. Of what number of wire and what size must I make an induction coil to lift one-third of a pound, and how much battery will be required to operate six of them at once? A. The size depends on the current you propose using. A core of one-quarter inch area must be charged with about 9,000 lines of force per square inch of section to have the desired traction, requiring perhaps twenty or thirty ampere turns. The question of leakage so complicates solenoid and straight bar calculations as to affect considerably their reliability. The ampere turns can be given by low potential batteries with low resistance coils or vice versa. 2. How large and at what distance apart shall I make holes in a tube 9-16 inch in diameter to make notes of a diatonic scale, the same to be made like a small boy's cane whistle? A. Arrange them on the principle that the undulations of the note vary with the length of the pipe as determined by the position of the holes. For narrow (1:12) stopped pipes the formula is $L=(2p+1)\frac{l}{4}$ and for open pipes $L=\frac{pl}{2}$; in which L=length of pipe, l=length of wave to be produced, p=any whole number. By taking p=1 you will get the length for the fundamental, and the other values of p will give the harmonics; l is obtained by the formula $l=\frac{1120}{n}$ in which n= the number of vibrations per second, which you can take from any table of the diatonic scale. Thus l is expressed in feet or a fraction of a foot. When the ratio of diameter: length : : 1:12 ceases to exist or to be exceeded, an arbitrary formula must be used. Consult Ganot's "Physics."

Query No. 6406.—In your answer to R. K. B., February 23, 1895, No. 6406, I am inclined to think his trouble does not lie with dirty contacts, but with an improper adjustment. I have frequently met with the same trouble, and bell would ring when several pushes were given successively. The successive pushes I believe give an accumulative series of vibrations to the bell hammer, and if synchronized properly will finally set the bell ringing. In such cases I generally investigate the adjustment screw and find it a little too far from the contact on the spring of the vibrating armature. —Thos. D. Gillespie, Pittsburg.

TO INVENTORS.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

April 2, 1895,

AND EACH BEARING THAT DATE.

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

Advertising and vending machine, F. M. Archer.. 536,713
Advertising device, P. C. Talman.......... 536,709
Air forcing device, G. W. Lord.......... 536,932
Amalgamator, N. L. Raber.......... 536,893
Automatic coupling, J. Emerson.......... 536,861
Baling press, P. C. Southwick.......... 536,765
Banjo, O. H. Olesen.......... 536,649
Battery. See Electric battery.
Bedstead, P. F. Murphy.......... 536,644
Bicycle, W. C. Nichols.......... 536,647
Bicycle pedal toe clip, F. K. Hesse.......... 536,723
Bicycle support, portable, R. C. Kruschke.......... 536,835
Billiard cue, N. Bosmann.......... 536,596
Binder for pamphlets, magazines, etc., temporary, Boeing & Stork.......... 536,798
Binder, temporary, G. Bonnell.......... 536,913
Blind catch, window, J. D. Johnston.......... 536,834
Block signal, electric, N. O. Goldsmith.......... 536,872
Block signal, electric, F. P. Snow.......... 536,764
Block signal, electric double semaphore, N. O. Goldsmith.......... 536,871
Blower, screw pressure, P. Erb.......... 536,925
Boiler, P. & J. J. Meehan.......... 536,755
Boiler case, heating, D. F. Morgan.......... 536,733
Boiler furnace, Mambourg & Houze.......... 536,884
Boilers, low water signal for steam, L. Fritz.......... 536,988
Book lock, E. E. Rogers.......... 536,659
Book, memorandum, T. McDowell.......... 536,646
Bottle filling machine, W. E. Gallagher.......... 536,989
Bottle hand protector, J. Hageboeck, Jr.......... 536,928
Bottle stopper and mount, W. Pearce.......... 536,700
Box. See File box. Miter box. Novelty box. Train order box.
Brace. See Rail brace.
Brake. See Wagon brake.
Bridge, truss, C. M. Avery.......... 536,680
Buggy top raising and lowering apparatus, F. H. Farnham.......... 536,864
Burial caskets, making composition, H. A. Garvey.......... 536,749
Burial derrick, R. R. Richmond.......... 536,938
Burner. See Hydrocarbon burner.
Button, cuff, R. H. Lewis.......... 536,836
Button, separable, W. E. Martin.......... 536,961
Calipers, micrometer, M. Wilcox.......... 536,676
Camera. See Magazine camera.
Can. See Sheet metal can.
Can or vessel for containing oil, etc., and protective covering for same, A. L. Baron.......... 536,947
Car brass, H. F. Schroder, Jr.......... 536,762
Car controllers, switch for street, G. Valley.......... 536,795
Car coupling, C. P. Callaway.......... 536,717
Car coupling, R. J. Edwards.......... 536,860
Car coupling, Glass & Cowan.......... 536,619
Car coupling, Kline & Gallager.......... 536,931
Car coupling, H. L. Renne.......... 536,894
Car coupling, L. S. Strepey.......... 536,741
Car fender, O. Cullison.......... 536,852
Car fender, C. P. Stimpson.......... 536,708
Car fender, C. B. Stuart.......... 536,664
Car fender, W. B. Thomas.......... 536,665
Car ventilator, M. D. Mugan.......... 536,885
Cars, safeguard for cable or electric, G. Rischmuller.......... 536,704
Cars, system of electrical propulsion for railway, L. Dion.......... 536,855
Cars, trolley support for electric railway, E. B. W. Reichel.......... 536,967
Carbon dioxide, process of and apparatus for expelling, A. Mueller.......... 536,642
Carousel and panoramic apparatus, J. Darling.......... 536,853
Carriage curtain hanging device, S. M. Fry.......... 536,868
Cart, road, A. Brohmann.......... 536,776
Cartridge belt, W. C. Brown.......... 536,598
Cartridge loading machine, L. B. Crosby.......... 536,685
Case. See Show case.
Chain, sprocket, C. E. Fanning.......... 536,863
Chair. See Dental chair.
Checkrein, E. E. Brown.......... 536,597
Checkrein holder, F. A. Le Count.......... 536,635
Cider, compound for making, P. Nickols.......... 536,888
Cigar stamping apparatus, C. T. Stetson.......... 536,843
Cigarette machine, H. Jerstrum.......... 536,630
Clamp. See Drill clamp.
Clasp for armlets, bands, etc., L. Neuberger.......... 536,965
Cleat for electric wiring, self-locking, F. O. Creager.......... 536,684
Clock winding mechanism, electric, Ethridge & Eastman.......... 536,926
Cloth napping machine, C. Wood.......... 536,679
Cloth pressing machine, D. Gessner.......... 536,686
Clothes reel, T. J. Sullivan.......... 536,971
Cob stacker, J. Q. Adams.......... 536,825
Collar, horse, W. H. Lankford.......... 536,959
Combination lock, G. W. Hill.......... 536,831
Composition of matter, J. A. Freeze.......... 536,987
Compound engine, C. J. Mellin.......... 536,640, 536,641
Compound engine, E. J. Woolf.......... 536,796
Conductors, terminal attachment for flexible, W. L. Richards.......... 536,655
Converter bottom, M. L. Williams.......... 536,904
Conveying apparatus, J. C. Martin.......... 536,731
Conveying apparatus, overhead, W. G. Berg.......... 536,910
Cooking fried cakes, implement for, C. E. Dunlap 536,986
Cotton in form of sliver, machine for preparing loose, W. H. Goldsmith.......... 536,620
Couch, E. E. Peck.......... 536,701
Coupling. See Automatic coupling. Car coupling. Hose coupling.
Cover fastener, G. R. Rogers.......... 536,896
Cover or stopper for milk cans, etc., G. M. Weeks. 536,903
Crate, poultry, Hunsinger & Ensminger.......... 536,954
Cultivator, J. H. Hoober.......... 536,929
Curling iron, G. M. Pitner.......... 536,839
Curtain pole, R. A. Austin.......... 536,747
Curtain roller, J. W. Morpeth.......... 536,933
Cutter bar, D. D. Dorney.......... 536,924
Cycles, means for securing cranks and sprocket wheels to pedal shafts of, R. F. Hall.......... 536,694
Dental chair, W. B. Mann.......... 536,814
Depurator, J. T. Smith.......... 536,707
Detergent compound, H. B. Fuller.......... 536,691
Digger. See Potato digger.
Dish cleaner, J. H. Nolen, Jr.......... 536,889
Ditching machine, tile, W. Hubertz.......... 536,727
Dock, balanced floating, J. J. Cousins.......... 536,683
Door hanger, B. Erskine.......... 536,613
Dough dividing machine, F. A. Hetherington.......... 536,830
Dredging apparatus, C. Meer.......... 536,756
Drier, F. G. Wiselogel.......... 536,677
Drill clamp, J. F. Forsyth.......... 536,867
Dye, black, R. Kirchhoff.......... 536,878
Dye, blue, R. Hirsch.......... 536,626
Dye, blue, R. Kirchhoff.......... 536,880
Dye, blue black, R. Kirchhoff.......... 536,879
Dynamo driven from axles of railway cars, W. Biddle.......... 536,748
Edge burnisher, A. S. Vose.......... 536,671
Electric battery, H. W. Libbey.......... 536,689
Electric controller, G. Valley.......... 536,794
Electric controllers, contact finger for, S. Harris.. 536,803
Electric generator and current director, combined dynamo, J. F. McElroy.......... 536,816
Electric machine, dynamo, J. F. McElroy.......... 536,963
Electric machines and motors, brush holder for dynamo, G. Valley.......... 536,973
Electric mercurial switch or contact maker, H. Lemp.......... 536,811
Electrical transformer, M. Dickerson.......... 536,608
Electrolysis, H. Blumenberg, Jr.......... 536,848
Elevator safety device, J. Cooper.......... 536,605
Elevators, electrical controlling system for, C. O. Mailloux.......... 536,730
Engine. See Compound engine. Steam engine.
Engine reversing gear, steam, J. L. Seyfang, 536,897, 536,898
Envelope, G. Southard.......... 536,821
Envelopes, etc., apparatus for dispensing, F. E. Housh.......... 536,627
Excavator bank spud, A. W. Robinson.......... 536,658
Exhaust muffler, C. Loper.......... 536,753
Fastening, F. A. Decker.......... 536,607
Feedwater heater, J. E. Schlieper.......... 536,660
Fence post, R. Pryor.......... 536,937
Fence stay, wire, P. Frantz.......... 536,784
Fence stay, wire, Jones & Greene.......... 536,956
Fence weaving machine, wire, J. W. Berry.......... 536,695
Fence, wire, Jones & Greene.......... 536,955
Fence wire coupling device, C. Schulze.......... 536,940
Fender. See Car fender.
Fender or life-guard, H. Henthorne.......... 536,806
File box, J. M. Webster.......... 536,673
Filter, J. G. Sutton.......... 536,942
Firearm, magazine, M. C. Lisle.......... 536,960
Fire escape, C. F. Fitz Gerald.......... 536,866
Fire escape, J. L. Gregory.......... 536,927
Flashlight apparatus, G. T. Shiras.......... 536,790
Flower package, H. Bailey.......... 536,908
Fluid meter, P. G. Van Wie.......... 536,823
Flushing drain pipes of sinks, washbasins, etc., connection for, F. B. Vinter.......... 536,769, 536,770
Fork, J. Eros.......... 536,862
Furnace. See Boiler furnace.
Furnace, C. R. Meres.......... 536,837
Furnace, W. W. Wainright.......... 536,902
Garment supporter, G. N. Buck.......... 536,599
Gas and air mixer, A. L. Avery.......... 536,945
Gas, apparatus for manufacture of oil and water, Christiani & Griffiths.......... 536,681
Gas machine, hydrogen, H. W. & H. W. Neal.......... 536,758
Gas pressure governing apparatus, W. W. Laing.. 536,728
Gas regulator, Hughes & Smith.......... 536,953
Gate. See Railway gate.
Gate spring, J. J. Larimer.......... 536,881
Generator. See Electric generator.
Gig mill, C. Wood.......... 536,678
Glue and making same, J. A. Just.......... 536,633
Grain binder, M. Kane.......... 536,991
Grain binder knot tying mechanism, M. A. Keller.......... 536,698
Grain drying apparatus, W. Griesser.......... 536,785
Grill fret work, extension, E. T. A. Akass.......... 536,593
Guitar, J. G. Bates.......... 536,846
Guns, apparatus for filling cartridge feed belts for machine, F. E. D. Acland et al.......... 536,591
Guns, ejector mechanism for breakdown, D. M. & C. F. Lefever.......... 536,636
Hair straightener, A. Harris.......... 536,802
Hame hook, F. P. White.......... 536,944
Hammer, drop, J. L. Peck.......... 536,819
Hammock supporting frame, W. L. Parmelee.......... 536,650
Handle. See Saw handle.
Handle for fire irons and implements, C. L. Dayton.......... 536,800
Harvester binder, J. A. McMaster.......... 536,788
Heat supplying apparatus, S. Turner.......... 536,667
Heater. See Feedwater heater.
Heaters with hot water, apparatus for supplying railway storage, J. F. McElroy.......... 536,838
Heating apparatus, W. E. Gallagher.......... 536,719
Hoisting apparatus, N. Newman.......... 536,789
Hook. See Hame hook. Lacing hook.
Hop picking machine, J. A. Whitney.......... 536,675
Horse driver and governor, H. A. & C. S. Arnold. 536,714
Horse leg protector, A. D. Headley.......... 536,625
Hose coupling, A. L. Bailey.......... 536,774
Hose coupling, J. F. McElroy.......... 536,962
Hurl stemming and sorting machine, N. H. Tilden.......... 536,972
Hydrant, wall, J. Gaghan.......... 536,801
Hydrocarbon burner, L. T. Cornell.......... 536,779
Incubator, F. Frey.......... 536,617
Ingot pusher, Forter & Hemphill.......... 536,783
Injector, J. Desmond.......... 536,922
Insect powder blower, S. Meren.......... 536,732
Insecticide distributer, P. W. Berridge.......... 536,911
Instrument of penetrating darkness, haze, or fog, C. A. Potter.......... 536,759
Insulation of electric conductors, means for the, L. Dion.......... 536,857
Insulator pins, machine for making, G. R. Butler. 536,827
Iron. See Curling iron.
Ironing machine, A. Kreuter.......... 536,958
Irrigating dam, H. C. Magarrell.......... 536,883
Jack, H. W. Armstrong.......... 536,594
Jar. See Preserving jar.
Jar holder, J. Y. Kline.......... 536,751
Knitting machine, automatic circular, E. J. Franck.......... 536,616
Knitting machine, circular rib, E. Tiffany.. 536,743, 536,744
Knob lock, W. Tucker.......... 536,666
Lacing hook and fastening, H. J. Stevens.......... 536,740
Lamp globe shade, incandescent, L. Dion.......... 536,856
Lamp, signal, O. S. Conklin.......... 536,603
Lamp socket, incandescent, F. H. Soden.......... 536,792
Last block fastener, C. Calton.......... 536,799
Lasting machine nipper jaw, J. Dalpe.......... 536,780
Lathe, screw cutting, E. Flather.......... 536,615
Lathe tool post, S. L. Worsley.......... 536,845
Lathing, metallic, G. Hayes.......... 536,624
Leather, treating, R. Owens.......... 536,966
Lock. See Book lock. Combination lock. Knob lock. Railway switch lock. Seal lock.
Lock, B. Klein.......... 536,957
Locomotive, F. A. Haughton.......... 536,622, 536,623
Locomotive ash pan bottom, W. J. Norton.......... 536,648
Log carrier, A. W. Tisdale.......... 536,745
Loom, W. F. Draper.......... 536,948
Loom reed, W. Orr.......... 536,699
Loom warp stop motion, C. F. Roper.......... 536,968, 536,969
Lubricator, I. F. Zimmerman.......... 536,824
Magazine camera, W. D. Robinson.......... 536,820
Mailing machine, Vanderlip & McAfee.......... 536,710
Manhole cover, T. P. Greger.......... 536,621
Manure spreader, H. Watkins.......... 536,712
Match safe, J. Coyle.......... 536,983
Measuring device, D. E. Brentlinger.......... 536,716
Measuring liquids, Crawford & Wylie.......... 536,606
Metal working tool for turning axles, J. A. Donaldson.......... 536,609
Meter. See Fluid meter.
Micrometer, O. J. Ebert.......... 536,859
Mill. See Gig mill.
Mining machine, Boland & Fritz.......... 536,912
Miter box, M. Nicholls.......... 536,936
Moulding, finishing, L. R. Harsha.......... 536,804
Motor. See Water motor.
Mowing machine cutter bar, G. A. Hall.......... 536,605
Muscle tester, H. W. Wilson.......... 536,771
Music box damping mechanism, A. C. Jaccard.......... 536,808
Musical instrument, multiplex stringed, W. D. Kyle.......... 536,634
Nipple cutting machine, W. Murchey.......... 536,815
Novelty box, C. L. Ruehs.......... 536,761
Nozzles, mechanism for operating exhaust, E. W. Harris.......... 536,874
Nut lock, T. J. Byrns.......... 536,777
Nut lock, R. F. McConley.......... 536,934
Nut lock, H. V. Padfield.......... 536,817
Nut lock, J. R. Perfater.......... 536,892
Nut lock, G. Vyne.......... 536,711
Nut roasting apparatus, J. C. F. Atsatt.......... 536,773
Oilstone holder, F. Ratcliff.......... 536,760
Organ coupling mechanism, electric, E. S. Votey. 536,974
Organs, electrically controlled magnet and valve for pipe, Votey & Wood.......... 536,975
Organs, electro magnet for pipe, E. S. Votey et al.......... 536,977
Organs, electropneumatic stop action for pipe, E. S. Votey et al.......... 536,978
Organs, tubular pneumatically operated valve for pipe, Votey & Wood.......... 536,976
Ovens, automatic gas or light regulating attachment for bake, A. Stephan.......... 536,662
Packing machine, C. O. Allee.......... 536,772
Packing, steam, A. W. Chesterton.......... 536,849
Padlock, W. F. Troast.......... 536,844
Panoramic cabinet, A. A. Aguero.......... 536,592
Pelt plucking machine, J. W. Sutton.......... 536,742
Pencils, etc., rubber tip and point protector for lead, F. McIntyre.......... 536,935
Picture frames, hanger for giving inclination to suspended, W. Griffin.......... 536,829
Plane, J. A. Traut.......... 536,746
Plow, riding reversible, R. C. Fay.......... 536,949
Pole, adjustable vehicle, Parr & Weber.......... 536,818
Polishing machine, A. Johnston.......... 536,631
Post. See Fence post.
Potato digger, H. Cook.......... 536,850
Potato digger, I. S. Horner.......... 536,833
Precious metals from solutions, receptacle for recovering, Wiswall & Frank.......... 536,981
Preserving jar, I. R. Gilbert.......... 536,869
Preserving jar, food, R. A. Gilchrist.......... 536,870
Press. See Baling press.
Printing from stencils, apparatus employed in, D. Gestetner.......... 536,720
Prisoners from escaping, device for preventing, J. R. Wherry.......... 536,979
Puller. See Stump puller.
Pump, self-measuring oil, J. H. Welch.......... 536,674
Pumping apparatus, F. M. Iler.......... 536,807
Radiator, W. P. & R. P. Thompson.......... 536,768
Rail brace, E. C. Carter.......... 536,916
Railway, cable, C. I. Earll.......... 536,611
Railway, conduit electric, Hughes & Adams.......... 536,952
Railway gate, W. D. Carpenter.......... 536,601
Railway supply system, electric, J. M. Byron.......... 536,915
Railway switch, J. Hartman.......... 536,786
Railway switch interlocking mechanism, J. J. Turner.......... 536,669
Railway switch lock, J. J. Turner.......... 536,670
Railway switch, three-way, J. D. Bailey.......... 536,715
Railway switch work, A. J. Moxham.......... 536,734, 536,735
Railways, closed conduit system for electric, Chaplin & Dion.......... 536,918
Railways having sectional conductors, safety device for electric, L. Dion.......... 536,923
Railways, supply system for electric, A. C. Crehore.......... 536,828
Raisin seeder, F. H. Chase.......... 536,778
Recording distances, gradients, and angles, apparatus for D. Aramburn.......... 536,906
Reed board, J. Peloubet.......... 536,702
Reel. See Clothes reel.
Refrigerator car, J. M. Gilstrap.......... 536,721
Retorts, cleaning, H. Kaemmerling.......... 536,877
Revolver ejector, A. Fyrberg.......... 536,618
Rubber wheel, split, W. V. Hirsh.......... 536,696
Saddle, harness, H. Schmitz.......... 536,739
Sash fastener, O. G. Cates, Jr.......... 536,602
Sash frame and ventilating sash, W. H. Gartz.......... 536,692
Sash holder, W. Linden.......... 536,729
Saw gage device, B. Potter.......... 536,651
Saw handle, J. Tors.......... 536,822
Saw, scroll, J. L. Wilson.......... 536,980