

Graphite Lubricating Co., Jersey City, N. J. Graphite bushings and bearings, requiring no grease or oil.

Quints' patent automatic steam engine governor. Correspondence solicited from manufacturers of throttle governor engines. Leonard & McCoy, 118 Liberty Street, New York.

Catarrah Cured.

A clergyman, after years of suffering from that loathsome disease, catarrh, and vainly trying every known remedy, at last found a prescription which completely cured and saved him from death.

Lathes for cutting irregular forms a specialty. See ad. p. 349.

Graphite Bushings.—Put them on all loose pulleys. Band saws, with tipping table. All kinds woodworking machinery. Rollstqne Machine Co., Fitchburg, Mass. Planing and Matching Machines. All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

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NEW BOOKS AND PUBLICATIONS.

A PRACTICAL TREATISE ON ANIMAL AND VEGETABLE FATS AND OILS. By William T. Brannt. Philadelphia: Henry Carey Baird & Co. 244 engravings. 1 vol., 8vo, 739 pages. Price \$7.50.

We have here one of the most useful, as well as the most creditable, contributions which have ever been made to the technical literature of this country. Not only is it thorough and complete, but it stands almost entirely alone in English literature.



HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication. References to former articles or answers should give date of paper and page or number of question.

(1) A. L. J. asks: 1. What will take rust from finely polished steel, such as drawing instruments, etc., without scratching them? A. Mix 10 parts of tin patty, 8 of prepared buck's horn, and 25 of alcohol to a paste.

(2) W. H. H. asks: 1. Are pumpkins a good milk-producing food for cows, and have pumpkin seed a tendency to dry up milch cows? A. Pumpkins make a rich food for cows, producing good milk, but not so much as with other kinds of food.

(3) J. E. desires a receipt for making a good blue black copying ink. Take of Aleppo galls, bruised, 9 ounces, bruised cloves 2 drachms, cold water 80 ounces, sulphate of iron 3 ounces, sulphuric acid 70 minims, sulphate of indigo, thin paste, 4 drachms.

(4) J. A. P.—We are not acquainted with the special variety of cough drops mentioned by you, but we would suggest the following as an excellent article: Tincture of squills 2 ounces, camphorated tincture of opium and tincture of tolu, of each 1/4 ounce, wine of ipecac 1/2 ounce, oil of wintergreen 4 drops, sassafras 3 drops, and of anise seed oil, 2 drops.

(5) S. O. H. asks whether the killing of alligators is an industry, if the hides are tanned and used to any great extent, and what per cent of so-called alligator hides are genuine. A. It is an irregular occupation of quite a number, in many places along our southern coast, and, although the supply of skins varies much, a great many thousand are tanned every year.

(6) T. M. S. asks: 1. What can I put on my watch face to make it luminous, so that the time can be read in the dark? A. Coat it with luminous paint. See the articles on the paint in SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 249 and 497.

(7) J. H. D. asks for a receipt to remove paint from a wood carving without damaging the wood, as burning or scraping would ruin it. A. Mix 1 part by weight of pearl ash with 3 parts quick stone lime by slaking the lime in water and then adding the pearl ash, making the mixture about the consistence of paint.

(8) E. P. M. asks: What amount of oxygen, hydrogen, and carbon is there in steel? A. Steel contains no oxygen, save in the rust there may be upon the outside, and only a possibility of a minute portion of hydrogen.

(9) W. C. P. asks: 1. Does paint or black japan injure the sound of a whistle or gong? A. It would probably change the tone. 2. What can I use to thoroughly remove paint or black japan on a whistle or gong which cannot be taken down, and can only be reached by means of a ladder? A. If you can get at the whistle to clean it, you certainly can take off the bell by unscrewing the nut on top, which will enable you also to unscrew the bell from the stud.

(10) R. R. W. writes: I wish to move a large building over ice which freezes from 2 to 3 1/2 feet. Will it be safe? A. Ice 8 inches thick will support heavy wagons and artillery. The crushing strength of ice varies from 327 to 1,000 pounds per square inch. At the lowest figures this is 23 tons to a square foot.

(11) H. R. E. writes: I have a fine Arkansas oil stone which refuses to work properly after several years of constant use. My tools slide over it without being sharpened. How can I make it cut? A. Soak the stone in turpentine or naphtha for a few days, when it will cut as new.

(12) C. H. S. asks (1) how to make a strong joint with glue. A. Use new glue, and in applying first fill the pores of the wood with thin glue and let it dry; then clean off, and glue it at the joint with strong glue. 2. How to make a good hard oil finish. A. Take of linseed oil 1 pint, rectified spirits 4 ounces, oil of turpentine 1/2 pint, powdered resin 1 1/2 ounces, rose pink 1/2 ounce; mix. 3. A good cheap wood filler? A. Boiled linseed oil 1 quart, turpentine 3 quarts, corn starch 5 pounds, japan 1 quart, calcined magnesias 2 ounces; mix thoroughly. You can buy better prepared fillers than you can make.

(13) C. A. D., Virginus, Col., writes: I would like to know the relative speed of an air compressor in high and low altitudes. Take, for example, a Rand drill compressor, running at the rate of 30 revolutions per minute at sea level. Would it have to run faster at this altitude, it being 12,600 feet above sea level? A. At above elevation the atmosphere is but two-thirds the density of the air at the sea level. Pumps

should run, at a speed of 45 revolutions per m. for the volume of compressed air as computed for the sea level.

(14) G. H. W. asks in what way he can make a battery to run a single bell 2 1/2 inches diameter, by using a cast iron box 5 1/2 inches wide, 8 3/4 inches deep, and 1 7/8 inches long. A. Place a layer of black oxide of copper at the bottom of the iron vessel, fill with strong caustic potash solution, and suspend in it horizontally a good sized zinc, preferably a thick plate 4 inches by 14 inches or thereabouts in size. Connect one wire to the zinc, the other to the iron.

TO INVENTORS.

An experience of forty 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 unequalled facilities for procuring patents everywhere.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

December 13, 1887,

AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers, including: Adjustable chair, E. Pynchon; Ammonia from manure, etc., obtaining, W. F. Nast; Armature, H. B. Slater; Auger, hollow, W. Bradford; Axle brake, R. Luders; Axles, machine for forming wagon, A. Paterson; Bag, See Mail bag; Bailing press, H. Weddle; Barber's chair, T. A. Kochs; Battery, See Electric battery; Galvanic battery; Bed spring, M. H. Collom; Bed fastener, machine, H. Bramm; Belt shifter and brake, J. Stewart; Binder, tablet, W. B. Pearson; Bit, See Bridle bit; Blotter, ink, L. S. Smith; Boat, See Steamboat; Boiler, See Steam boiler; Steam or hot water boiler; Boilers, purifying water for, C. Elliot; Bolt, See Elevating bolt; Book clasp, A. C. Hafely; Boot or shoe, G. F. Cushman; Boot or shoe stretcher, L. Nottingham; Boots and shoes, seam rubber for, C. H. Carr; Box, See Fare box; Miter box; Paper box; Box, W. H. Butler; Box strapping, metallic, C. H. Dana; Boxes, device for closing the lids of, J. Cook; Brake, See Axle brake; Brake, P. Everett et al.; Bridge, T. Buckley; Bridge guard, C. C. Tozier; Bridle bit, C. H. Smith; Broom rack, D. M. Kilmer; Brooms, manufacture of whisk, E. I. Miller; Brush and blacking box, combined blacking, G. W. Peck; Buckle, breeching, T. S. Very; Buckle, suspender, D. L. Smith; Burnishing machine, E. B. Allen; Bustle, A. C. & O. J. Decker; Bustle, C. C. Shelby; Bustle, T. P. Taylor; Button making, collet or shell die for, W. Hornich; Button or stud, G. W. Prentice; Cable gripping mechanism, A. D. Whitton; Cable track road and tightener for same, C. Carr; Calk sharpening machine, G. W. Savage; Calks, machine for making toe, J. C. Kelly; Cane stripper, T. C. Collins; Canned food, apparatus for preparing, H. L. Hooper; Cannon, E. J. Blood; Cant hook, C. Nygaard; Car bolster, H. James; Car brake, A. H. Marden; Car brake and starter, H. H. Olcott; Car coupling, Diller & White; Car coupling, T. W. Harrison; Car coupling, F. Tiedt, Sr.; Car coupling, J. Tocin; Car coupling attachment, S. D. Smith; Car, dumping, J. W. Davis; Car heater, M. Wanner; Car heating apparatus, W. H. Penfield; Car, railway, C. C. Holt; Car, stock, G. D. Burton; Car, stock, N. Z. Seitz; Cars, apparatus for heating railway, L. K. Curlett; Cardboard manufacturing machine, L. W. Noyes; Carrier, See Cash carrier; Cart, road, B. S. & C. W. Porter; Case, See Show case; Cash carrier, W. H. Koehler; Cash register and indicator, D. Davis; Chain lock, I. A. Sherman; Chair, See Adjustable chair; Barber's chair; Convertible chair; Chopper, See Cotton chopper; Chuck, B. F. Chappell; Chuck, L. D. Jones; Chuck, drill, A. D. Goodell; Churn, R. H. Browning; Churn, W. W. Perkins; Circuit breaker, C. B. Bosworth; Clasp, See Book clasp; Clasp, F. W. Tobey; Cleaner, See Cloth cleaner; Cloth cleaner, W. C. Meyer; Clutch, friction, H. W. Hill;

Table listing inventions with patent numbers, including: Coal elevator, T. G. Goodfellow; Coffee pot, W. A. Krag; Coin operated lock, P. Everitt; Compass, beam, J. Strachan; Convertible chair, C. H. Meddins; Copying press, S. Netter et al.; Core catcher and breaker, A. Ball; Cork blocking and finishing machine, automatic, Dodge & Weaver; Corn dropping attachment, automatic, W. W. Walters; Cotton chopper, B. C. Marshall; Cotton, machine for opening and preparing, R. Kitson; Coupling, See Car coupling; Thill coupling; Crane, W. H. Ridgway; Crate, Mason & Shafer; Crate, fruit, J. H. Marvil; Cuff holder, J. M. Bolton; Cyclometer, C. E. W. Woodward; Dental flask, W. S. Curtis; Dial, timepiece, E. A. Lewis; Digger, See Potato digger; Display frame, W. A. Aiken; Distilling apparatus, E. Kells; Distilling wood, A. Smith; Ditching machine, C. Michelsen; Door hanger, J. Christmann; Door hanger, sliding, R. M. Wilson; Draught equalizer, J. J. H. Parrott; Drier, See Fruit drier; Drill channeling machine, A. Ball; Egg beater and mixer, combined, L. Rosenkranz; Egg crates, material for, O. L. Parmenter; Electric battery, J. A. Barrett; Electric circuits, safety strip for, Lange & Shal-lenberger; Electric conductors, conduit for, E. E. Greene; Electric coupling device, P. Lange; Electric currents, apparatus for measuring, H. Aron; Electric generator and motor, A. F. Congdon; Electric machine, dynamo, G. Westinghouse, Jr., et al.; Electric motor, W. Hochhausen; Electric motor or dynamo electric machine, F. J. Patten; Electric motors and other translating devices, apparatus for reversing and controlling, W. Hochhausen; Electric motors, regulation of, W. Stanley, Jr.; Electrical conductors, conduit for, G. D. Holt; Electro mechanical movement, H. Van Hoeben-bergh; Electro medical apparatus, J. S. Muir; Elevating bolt, F. Prinz; Elevator, See Coal elevator; Hay elevator; Hod elevator; Hydraulic elevator; Straw elevator; Elevator gate, E. F. Hardin; Elevator trap doors device for operating, A. G. Page; Embroidery frame, C. Pease; Engine, See Road engine; Engines, compensating gear for road, J. G. Downie; Envelope, safety, L. P. Taylor; Explosive compound, L. G. Heusschen; Extractor, See Nail extractor; Eyeglass holder or hook, W. J. Rand; Fabric, See Knitted fabric; Fans, machine for recording the revolutions of ventilating, Hartl & Nichter; Faucet, G. W. Aldrich; Faucet, H. Ogdon; Faucet, beer, J. Deasey; Fare box, change making, Safely & Williams; Feed water, means for separating oil and sediment from, W. E. Pearson; Fence post, H. E. Lambert; Fence, wire, D. Woodford; Fire escape, W. H. Gray et al.; Fire escape, Shires & Kennedy; Fire extinguisher, automatic, Swallow & Keeny; Fire extinguisher for car heaters, E. Maguire; Fishing reel, A. Geils; Frame, See Display frame; Embroidery frame; Picture frame; Fruit drier, C. A. Pitkin, Sr.; Fuel, artificial, J. I. Irving; Funnel, F. A. Lyman; Fuse, electric, K. J. Sundstrom; Gauge, See Water gauge; Galvanic battery, J. A. Barrett; Galvanic battery, J. Freeman; Galvanic battery, J. Serson; Game counter, E. Meise; Garment supporter, C. F. Sullivan; Gas alarm burner, J. McDermott; Gas fireplace, T. T. McNish; Gas regulator and cut-off, Dally & Richardson; Gate, See Elevator gate; Sliding gate; Swinging gate; Gate, G. H. Ingersoll; Generator, See Electric generator; Globe, folding school, J. H. French; Glove fastener, G. W. Mandrill; Glove or mitten, S. Helfaer; Grading machine, road, J. Moore; Grain binder, A. Goodyear; Grater, fruit or vegetable, W. Marx; Guard, See Bridge guard; Keyhole guard; Rail-way crossing guard; Rein guard; Gun, magazine, M. E. Gregg; Gutters and pavements, fastening device for, I. L. Landis; Halter trimming, D. B. Harvey; Hame, F. Church; Hame and hame tug attachment, F. Lacerlef; Hame hitch and collar fender, combined, D. Paterson; Hammer tool, revolving electric, W. G. A. Bonwill; Hammock stretcher, M. Campbell; Hanger, See Door hanger; Harrow disks, device for sharpening, H. Dick; Harvesters, folding platform for grain, S. F. Voorhees; Harvesting machine, J. Knoop; Hat rack, R. E. Gleason; Hat sweats, finishing the attaching edges of, F. L. Butler; Hay elevator and stacker, P. F. Fleming; Hay rake and tedder, combined, Landis & Iske; Head rest, E. W. Robinson; Heater, See Car heater; Heel trimming machine, A. D. Elliott; Heeling machine, C. W. Glidden; Hinge, P. Forz; Hod elevator, H. A. Hall; Holder, See Cuff holder; Eyeglass holder; Sash holder; Hook, See Cant hook;

Hook or hanger, R. Gorton (r).....	10,888
Horseshoe, A. L. Stevens.....	374,911
Horseshoe, sectional, E. W. Bingham.....	374,727
Hydraulic elevator, J. S. McDonald.....	374,901
Hydraulic switch and signal device, J. A. Zinn.....	374,768
Indicator. See Temperature indicator.	
Inhaler for anaesthetics, W. W. Harrington.....	371,881
Iron, purifying, J. Beasley.....	374,651
Jack. See Pegging jack.	
Keyhole guard, A. J. Urdin.....	374,719
Kiln for burning sewer pipes, G. Howes.....	374,678
Knitted fabric, L. Bywater.....	374,888
Lamp, N. Pouchkareff.....	374,700
Lamp globes, testing electric, C. F. Reinmann.....	374,850
Lead, manufacture of white, W. P. Talbot.....	374,716
Lock. See Chain lock. Coin operated lock. Per- mutation lock. Seal lock.	
Lock, W. D. Doremus.....	374,784
Locomotive grate, C. Knaggs.....	374,839
Longitudinally expanding roller, A. W. Schlichte.....	374,769
Loom picker, J. A. French.....	374,893
Loom picker staff check, Hulford & Tillotson.....	374,836
Lubricator, P. Brownley.....	374,729
Mail bag, A. A. Eppert.....	374,735
Mail bag, H. F. Gaines.....	374,790
Mail bag, J. C. Lighthouse.....	374,844
Mail bag, F. P. Moss.....	374,845
Mail bag fastener, I. L. Morris.....	374,903
Mail bag fastener and tag holder, combined, H. N. Ockford.....	374,749
Mantel, heat radiating, Q. S. Backus.....	374,649
Mantel, sheet metal, W. J. Turf.....	374,718
Measure and tally, combined grain, O. D. McDaniel.....	374,613
Measuring vessel, J. F. Segok.....	374,759
Meat preserving implement, E. Hollenbeck.....	374,600
Metallic wheel, W. P. Bettendorf.....	374,575
Mill stock feeder, C. F. Kendall.....	374,682
Mining machine, B. A. Legg.....	374,900
Miter box, E. L. Gaylord.....	374,568
Mole trap, W. M. Waltman.....	374,765
Mortising machines, laying-out attachment for, H. M. Bullis.....	374,730
Motion, device for converting, G. Heully.....	374,677
Motor. See Electric motor.	
Mower, lawn, E. G. Passmore.....	374,805
Musical instrument, automatic, J. McTammany.....	374,616
Nail. See Shoe nail.	
Nail cutting machine, G. V. Packer.....	374,807
Nail extractor, E. Storm.....	374,761
Numbering machine, consecutive, J. H. Rein- hardt.....	374,629
Orange grader, J. W. Keeney.....	374,680
Organ, reed, E. S. Votey.....	374,721
Organ, reed, Votey & Courville.....	374,722
Oven door, J. R. Conrad.....	374,889
Packing, J. L. Law, Jr.....	374,796
Packing, rod, F. Pinch.....	374,905
Pail bottom, G. W. Lisk.....	374,887
Paper box, R. P. Brown.....	374,896
Paper, box for toilet, C. H. Dana.....	374,586
Paper webs, means for folding, C. Potter, Jr.....	374,699
Pegging jack, N. Kinney.....	374,744
Perforator, F. P. Rosback.....	374,880
Permutation lock, J. C. Smith.....	374,712
Picture frame, C. Taber.....	374,641
Picture frame backs, fastening for, F. W. Wat- kins.....	374,645
Pin. See Safety pin.	
Planing machine, metal, Sellers & Bancroft.....	374,908
Plant support and protector, J. Rovane.....	374,906
Planter and drill, R. Brock.....	374,653
Planter, potato, J. Riley.....	374,757
Plastering, backing for, J. L. Clarke.....	374,826
Plow, W. A. Fretwell.....	374,829
Plow standard, M. N. Laufenburg.....	374,886
Plug or wedge, quarrying, M. & J. Bentley.....	374,574
Post. See Fence post.	
Potato digger, D. Jevann.....	374,797
Press. See Baling press. Copying press.	
Printing designs on paper to be applied to earthen- ware, etc., machine for, W. H. Turner.....	374,644
Printing machine, rotary gripper platen, A. God- frey.....	374,869
Printing presses, numbering head for, J. G. Sauer.....	374,708
Projectile, explosive, A. C. Koerner.....	374,874
Prospecting or boring tube, A. Ball.....	374,811
Pulleys, removable bushing for, H. W. Hill.....	374,833
Pump, rotary, C. H. Cary.....	374,731
Rack. See Broom rack. Hat rack.	
Railway, cable, P. M. Bruner.....	374,775
Railway crossing guard, M. Beshoar.....	374,772
Railway rails and bearing for such joints, fish plate joint for, W. Lepsky.....	374,604
Railway switch, S. C. C. Currie.....	374,733
Railway switch, M. Dudley.....	374,827
Rake. See Hay rake.	
Razor, safety, S. A. Aloe.....	374,769
Reel. See Fishing reel.	
Reel, F. Eitane.....	374,734
Register. See Cash register.	
Regulator. See Gas regulator.	
Rein guard, J. H. Tibbetts.....	374,813
Rest for invalids, supporting, B. F. Nicholas.....	374,804
Road engine, R. M. Downie.....	374,664
Rocking chair spring attachment, A. B. Stevens.....	374,854
Rolling bars for angle iron, J. M. Baker.....	374,770
Routing machine, V. & J. Royle, Jr.....	374,707
Safety pin, E. Huoncker.....	374,898
Sash and frame, window, H. Jahn.....	374,793
Sash holder, M. V. B. Euans.....	374,867
Saw gummer and die therefor, gin, T. H. Nance.....	374,692
Saw sharpening and gumming machine, G. P. Saltenerber.....	374,758
Saw tooth, reversible, R. J. Bole.....	374,821
Sawing machine, portable, E. Beghtel.....	374,573
Scale, railway weighing, H. Estabrook.....	374,685
Screw, wood, B. C. Quinby.....	374,701
Seal lock, C. S. Gilman.....	374,592
Secondary batteries, automatic circuit closer for, W. W. Griscom.....	374,673
Sewing machine, P. Diehl.....	374,661
Sewing machine buttonhole attachment, A. W. Johnson.....	374,837
Sewing machine buttonhole attachment, H. J. Williams.....	374,918
Sewing machine stand and cover, J. Bolton.....	374,578
Shoe nail, F. Flad.....	374,580
Shoe, seamless, G. Apsley.....	374,571
Show case for wall paper, etc., sample, J. H. Davis.....	374,589
Shutter worker and fastener, comt. ned, F. B. Mallory.....	374,608
Signals on railways, device for a. sting, J. J. Turner.....	374,817
Signals, switches, etc., device for a. sting, J. J. Turner.....	374,914
Siphon apparatus, H. Ayer.....	374,726
Sliding gate, J. J. Albright.....	374,647
Sliding hill and toboggan to be used therewith, B. B. Floyd.....	374,736
Speaking tubes, mouth piece for, P. McGunnigle.....	374,746

Spinning frames, cop building mechanism for ring, A. Ball.....	374,816
Spring. See Bed spring.	
Stand. See Sewing machine stand. Wash stand.	
Stave machine, Riggs & Gleason.....	374,630
Steam boiler, N. Metz.....	374,688
Steam or hot water boiler, J. McKinlay.....	374,615
Steamboat, river, G. L. J. Simpson.....	374,635
Steamer and roaster, combined, E. A. Reed.....	374,755
Stereotype plates, clamp for securing, W. Filmer.....	374,697
Stove, air heating, M. C. Green.....	374,896
Stove pipe thimble, C. H. Tryon.....	374,643
Stove plate fastening, B. D. Ferris.....	374,686
Stove shelf, J. A. Price.....	374,627
Straw elevator, L. W. Adams.....	374,623
Supporter. See Garment supporter.	
Suspending device, W. A. Patten.....	374,809
Suspension or cable road switch, C. Carr.....	374,864
Suspension or cable roads, track for, C. Carr.....	374,865
Swinging gate, adjustable, W. B. Thomas.....	374,856
Switch. See Railway switch. Suspension or cable road switch.	
Switch board test circuit, multiple, C. E. Scrib- ner.....	374,907
Switches, detector bar or safety lock for, J. J. Turner.....	374,915
Tag for money bags, etc., A. A. Sprague.....	374,812
Tag, jeweler's, E. S. Burbank.....	374,823
Tap hole closer, T. A. Taylor.....	374,855
Temperature controller, R. Newton.....	374,847
Temperature indicator, electric, J. C. Boyle.....	374,581
Tether, R. B. Adams.....	374,646
Thill coupling, F. P. Musser.....	374,646
Thill coupling, P. E. Shirr.....	374,634
Thread cutting die and holder, J. S. Henry.....	374,599
Tile for coping, Robbins & Bell.....	374,705
Tongue support, G. A. Brice.....	374,583
Tool, combination, J. L. Koontz.....	374,602
Tooth, artificial, S. T. Beale, Jr.....	374,572
Trap. See Mole trap.	
Tube. See Prospecting or boring tube.	
Tubes and rods, rolls for reducing and tapering, M. L. Ritchie.....	374,703
Tug, hame, J. B. Altman.....	374,648
Valve, gate, W. S. Payne.....	374,685
Valve gear, G. M. Pelton.....	374,752
Valve, safety, A. C. Meady.....	374,617
Valve, safety, A. Orme.....	374,750
Valve, slow closing tank, S. G. Smith.....	374,687
Vaporizer, J. H. Valentine.....	374,720
Vehicle, two-wheeled, R. R. Jones.....	374,873
Veneers, machine for cutting, E. A. Harris.....	374,586
Wagon bed, M. Mills.....	374,876
Wagon, convertible stock, W. E. George.....	374,591
Wash stand, H. E. Braunfeld.....	374,822
Watch, stem winding, S. C. Smith.....	374,760
Water gauge, T. G. Lovegrove.....	374,606
Waterproof, composition for rendering leather, cloth, etc., C. E. Haynes.....	374,675
Wheel. See Metallic wheel.	
Wheel, W. P. Bettendorf.....	374,576
Whip socket, F. E. Benton.....	374,771
Windmill, H. Myers.....	374,904
Window, jail, H. McDonald.....	374,800
Wire splicer, W. F. Batters.....	374,650
Wire straining machine, J. Reid.....	374,810
Wire stretcher, Flynn & Kilburn.....	374,668
Woodworking machine, G. J. Goodhue.....	374,670 to 374,672

DESIGNS.

Badge, pin, etc., C. G. Malliot.....	17,947
Bed spring, S. H. Turner.....	17,951
Boiler front, steam, G. W. Drew.....	17,941
Bottle, W. W. Lowrey.....	17,945
Carpet, W. McCallum.....	17,946
Chair, R. J. Bump.....	17,939
Coat, little girl's, M. V. Kavanagh.....	17,943
Costume, lady's, E. Moran.....	17,948
Costume, lady's, J. Sheils.....	17,948
Dress, girl's, E. L. Jenkins.....	17,942
Horse blankets, fabric for, G. R. Ayres.....	17,938
Organ case, E. S. Votey.....	17,952
Picture frame, W. Levin.....	17,944
Wash stand, F. J. Torrance.....	17,950
Water gauge column, G. W. Drew.....	17,940

TRADE MARKS.

Bolts and rivets, Welsh & Lea.....	15,081
Bread and breakfast cakes, self-raising mixture for Boston brown, H. E. Pearson.....	15,025
Coffee and milk, chocolate and milk, cocoa and milk, and prepared dandelion, prepared bever- ages of, T. Symington.....	15,029
Coffee, of coffee and chicory, and of dandelion coffee, essence of, T. Symington.....	15,028
Flour and corn meal, mixture of dry and uncooked wheat, W. R. Lieb.....	15,021
Gelatin made from the air bladders of fish, Has- kin Bros.....	15,015
Guano, artificial, R. H. Woodriddle & Co.....	15,032
Hose for men, women, and children, Lord & Tay- lor.....	15,022
Lubricants for frictional surfaces, A. C. Buzby.....	15,013
Medicated soap pills, ointments, salves, and den- tal preparations, Ichthyol Gesellschaft Cordes, Hermann & Company.....	15,017
Medicinal preparation of a prophylactic character, W. Radam.....	15,026
Oil, illuminating, Scofield, Schurmer & Teagle.....	15,027
Oysters, H. J. Lewis.....	15,019, 15,020
Proprietary preparation in the form of pastilles, H. B. S. Morrell.....	15,023
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