

ENGINEERING INVENTION.

A furnace has been patented by Mr. John H. Weitmyer, of Harrisburg, Pa. The fire back contains an air chamber, from which highly heated air is made to issue into the furnace in small jets, the construction being such that all the air entering the furnace becomes heated from contact with heated surfaces, and is so distributed as to cause most effective combustion and utilization of the heat.

AGRICULTURAL INVENTIONS.

A combined corn and cotton planter has been patented by Mr. William Walker, of Weimar, Texas. It is so constructed that by simply shifting the connection between the corn slide and the crank arm of an agitator, the device may be adjusted to act as a planter of corn or cotton, or, by another simple change, may be made to serve both purposes.

A planter has been patented by Mr. Richard A. Fraser, of Mansfield, La. The machine is short, narrow, and light, can easily be guided close to stumps and other obstructions, and readily handled and adjusted by any person of ordinary intelligence for planting either corn, cotton, or other seeds, in drills or hills, with regularity and without waste of the seeds.

A plow has been patented by Mr. Pinkney H. Lequire, of Greenwood, Ark. It has a curved beam, with handles attached in the usual way, and auxiliary plows connected with the beam by pivoted cross bars, and held in the position of use by slotted pivotal braces, so that it can be used as a light ordinary plow, as a right or left double shovel plow, and as a right or left side harrow or cultivator.

A cotton planter and fertilizer distributor has been patented by Mr. James W. Voltz, of Marion Junction, Ala. It has a supporting frame with hopper, independently moving distributors, and means for operating them, whereby the seed or fertilizer will be distributed with certainty and uniformity, with other novel features, making a machine simple in construction and readily adjusted and controlled.

MISCELLANEOUS INVENTIONS.

A calf weaner has been patented by Mr. Max J. Ahlgrim, of Rose Lawn, Ind. It consists of a half muzzle, formed of wire, pivoted to a halter, and connected by rods to weighted levers pivoted to the sides of the halter, arranged to lift the muzzle when the animal is in position for grazing.

A rod for banners and similar uses has been patented by Mr. Rufus H. Sawyer, of Boston, Mass. It is an ornamental bar, with a cord composed of a metallic and a fibrous strand wound around it, making an improved article for banners and bannerets, and also for lambrequins, lace curtains, etc.

A photo-developing box has been patented by Mr. William H. Lewis, of New York city. The invention consists in hinging the sections of the box together by yielding hinges, to avoid danger of breaking the plate, and to hold films with or without plates, and plates of different thicknesses, together with other novel features.

A packing frame for paper has been patented by Mr. Charles F. Spaulding, of Elizabeth, N. J. It is made of bars with metallic couplings and longitudinal and transverse sockets, which can be packed in small space and readily converted into a knock-down frame for bundles of paper, to prevent the binding cords from marring the edges.

A shirt has been patented by Mr. Ferdinand Jacoby, of New York city. Its body has sleeves provided with re-enforcing pieces formed with straight edges, bound in with the wrist bands, whereby it is intended that the sleeves will be more than doubled in durability, at the wrist bands and to a point above the elbow, with but slight addition to the first cost of the shirt.

A sliding door hanger has been patented by Mr. James Allan, of New York city. Combined with the door and a casing having guideways are hanging bars pivoted together at about their centers, with other novel features, whereby such doors are so supported that they can be opened and closed without coming in contact with the floor or the carpet, which can be continued through the doorway.

A button hole marker has been patented by Anna Huffer, of Cowden, Ill. It is a device of simple construction, having a scale, regularly spaced slots, a guide plate, etc., whereby button holes can be expeditiously cut or marked without raising the marker from the goods, and all be same distance from the edge of the cloth, the same distance apart, and of the same length.

A veterinary operating table has been patented by Mr. Mathew L. Faling, of Tonawanda, N. Y. Combined with a main supporting frame having racks is a table leaf with toothed quadrants engaging with the racks, and an operating mechanism, whereby the throwing or casting of a horse with a side line previous to a surgical operation may be avoided, and the horse can be handled without danger to the operator.

A cigarette machine has been patented by Mr. Ambrosio de Zayas y Moreno, of Matanzas, Cuba. The tobacco is placed in a hopper, from which it passes to a distributing and other screws, and is discharged in a packed form into the wrapper and the operation completed, the invention covering numerous novel details and combinations of parts in a machine designed to be simple and effective for producing perfect cigarettes.

A street car heater has been patented by Mr. Theodore Wiseman, of Lawrence, Kansas. The heaters consist of a cast iron arch, the ends of which are closed by rectangular front and rear castings, which serve as supports for the grate and for the ash pan, which is suspended beneath the grate, the whole being under the platforms of the car, there being a smoke outlet, distributing chamber, separate register pipes, and various other novel features.

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The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

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Notes & Queries

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. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all, either by letter or in this department, each must take his turn.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(1) P. H. asks: What is the best method and simplest for putting ebonized finish on small work-table? A. The stain is produced by successive applications of a decoction of logwood, followed by one of copperas; the article is then French-polished and rubbed up with oil and spirit.

(2) W. R. X. asks for a solution for waterproofing canvas horse and wagon covers that will be flexible. A. Take boiled oil fifteen pounds, beeswax one pound, ground litharge thirteen pounds; mix and apply with a brush to the article, previously stretched against a wall or a table, washing and drying each article well before applying the composition.

(3) T. L.—We do not know of any record of the first use of barrels. Their sizes were regulated by law in England over 200 years ago.

(4) H. W. L. asks the proper construction of condensers such as are used in telegraph lines. A. Use ordinary tin foil, with ordinary tissue paper between the sheets, the whole immersed in ordinary white melted paraffin, and then withdrawn. Each second sheet of tin foil is connected to one terminal, and the remaining sheets to the other.

(5) Ph. D. asks how to make gum tolu, ready for chewing. A. Take of balsam tolu 4 parts and of gum benzoin, white wax, paraffine, and powdered sugar, one part each. Melt together, mix well, and roll into sticks.

(6) J. S. McG. asks how it is that in numerous places along the Atlantic coast, a driven well, right through the salt water, will obtain pure, fresh water a few feet beneath. A. Because the Tertiary strata along the Atlantic coast from New York to Georgia slant toward and extend under the Atlantic. The subsoil water drains toward the sea, and finally issues as fresh water springs along the shore in the marshes and at the bottom of the ocean off shore. Thus artesian wells may be sunk in the sea bottom off the coast of New Jersey and fresh water obtained at the surface.

(7) F. P. L. asks: 1. Of what materials is the composition composed on picture mouldings? In what proportions are they mixed? How are they moulded in shape? How is the white grounding composition mixed and applied? A. Dissolve 1 pound of glue in 1 gallon of water. In another vessel boil together 2 pounds of resin, 1 gill Venice turpentine, and 1 pint linseed oil; mix and boil together until water has disappeared, when add finely powdered whiting until mass is of consistency of putty. This is hard when cold and soft when hot. It can be moulded in plaster of Paris or glue moulds. The white base seems to be mason's hard finish. It would be advisable to drive brads or tacks where the high parts come to be bedded in the composition, and hold it in place.

(8) J. D. asks: 1. In making the dynamo described in SUPPLEMENT, No. 161, with 12 and 14 instead of 16 and 18 wire, should it have 7 layers on the electro magnet the same? A. In general terms, it should, but we recommend exact adherence to the gauge given in our article. 2. I am making one, once and a half as high, once and a half as wide, using 9 and 11 wire; and one twice as high and twice as wide, and using 6 and 8 wire, for plating purposes. Is this the right size of wire to use? A. Your sizes of wire for the large ones will probably work, but how well we cannot say. 3. I want an apparatus for measuring currents like the one described in SCIENTIFIC AMERICAN, November 21, 1885, page 225, for the above machines. What thickness of wire would I want, and what length and width of tube, and what would be best to make the float and float rod from? A. The thickness of wire depends on the use it is to be put to. For an amperemeter it should be very heavy, for a voltmeter very fine. Make the core float of German silver or brass. 4. Would this apparatus effect the current much if constantly attached to a dynamo? A. It would not affect the current to any extent.

(9) T. H. H. asks: 1. How can I make a telegraph sounder so that the upward and downward stroke of the armature will be increased to double its present force? A. The power of stroke of a sounder is due to the size of magnet and coils and battery power. In general terms, you may increase its power by enlarging its core and armature and using larger wire, so as to secure the same number of turns in each bobbin. 2. If a single sounder will lift one pound (if attached to armature), will there be any increase in power, if the same battery is used, if another sounder was put in circuit, or would each lift only eight ounces? A. Two sounders would lift much more than one; under some conditions, nearly double with the same battery. 3. State the best practical method of collecting atmospheric electricity, aside from the lightning rod. A. For collection of atmospheric electricity, probably the rod is as good as any device. The ordinary static electric machine can hardly be said to collect electricity from the atmosphere.

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. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

November 30, 1886,

AND EACH BEARING THAT DATE.

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

Table listing various inventions and their patent numbers, including items like 'Adding machine, Lewis & Guarrant', 'Air brake, automatic compressed, A. S. Goode', 'Alarm, See Boiler water alarm. Burglar alarm', etc.

Cock, service stop, E. J. Brady.....	353,583	Jumping Jack, J. R. E. E. Hersh.....	353,416	Sewing machine shuttle and hubbin, M. Ransom.....	353,588
Coffee pot, steam, A. M. Amos.....	353,280	Knitted fabric, W. & R. N. Wrightson.....	353,652	Sewing shank buttons to boots, etc., machine for, R. Thompson.....	353,609
Collar or cuff, J. D. Parsons.....	353,642	Knitting machine, W. & R. N. Wrightson.....	353,525	Sheet metal articles, machine for drawing, G. F. Butters.....	353,437
Concentrating pan, M. Swenson.....	353,515	Lace and other fabrics, machine for clipping, J. Range.....	353,586	Sheet metal, drawing corrugated cups of, A. W. Paul.....	353,438
Copying press, S. H. Stupakoff.....	353,606	Lace, etc., machine for clipping, C. H. Wilcox.....	353,625	Sheller. See Corn sheller.....	
Cordage, machine for making interlocked, B. Arnold.....	353,396	Lacing fastener, L. W. Wood.....	353,524	Shoe fastener or clasp, J. Jackle.....	353,635
Corn sheller and separator, C. Roberts.....	353,591	Ladder chair, step, F. E. Levanseler.....	353,315, 353,316	Shoe, moccasin, D. Dudley.....	353,295
Cornet clamp, J. Anderson.....	353,281	Lamp, gas, F. H. Wenham.....	353,650	Shovels, making, H. M. Myers.....	353,372
Cotton chopper, E. C. A. Puls.....	353,463	Lamp, incandescent electric, C. J. Van Depoele.....	353,333	Show rack, revolving, T. F. Godfrey.....	353,554
Coupling. See Breast strap coupling. Car coupling. Pipe coupling. Thill coupling.....		Lamp, miner's safety, A. J. Becker.....	353,438	Signal. See Railway signal.....	
Crane traveling, J. Walker.....	353,612	Lamp shade ornament, G. L. Cooper.....	353,480	Skate, roller, D. A. Root.....	353,644
Crossing guard, D. L. Miller.....	353,368	Lamps, regulator for electric arc, Henneberg & Lorenz.....	353,805	Stalk cutter, B. C. Bradley.....	353,477
Crusher. See Clod crusher.....		Lantern, F. Meyrose.....	353,573	Sled, bob, T. G. Mandt.....	353,569
Cultivator, W. H. Newton.....	353,579	Lantern, tubular, W. C. Winfield.....	353,343	Snow plow, C. M. Steenbarger.....	353,604
Cultivator, J. F. Packer.....	353,469	Latch and lock, combined, F. N. Perkins.....	353,374	Soap and glycerine, manufacturing, M. H. Lack-ersteen.....	353,566
Cultivator, W. Pendley.....	353,498	Lathe, turning, S. W. Goodwin.....	353,302	Soldering machine, can, D. M. Monroe.....	353,420
Cultivator, M. L. Unger.....	353,410	Legs, cord attachment for artificial, G. Moore.....	353,369	Spark arrester, M. Rumely.....	353,379
Cutter. See Meat cutter. Stalk cutter.....		Level, telescopic, hand, W. Gurley.....	353,406	Spindle support, J. B. McPherson.....	353,409
Cutter heads, bit holder for, S. J. Shimer.....	353,509	Lifting device, J. M. McNabb.....	353,366	Spinning machine, J. S. Richardson.....	353,377
Cyclometer, J. Butcher.....	353,479	Line and trace carrier, J. S. Beesley.....	353,618	Spring. See Rein spring.....	
Cylinders, making toothed, W. G. Sears.....	353,445	Liquid for the production of cold, A. J. Rossi.....	353,378	Sprinkler, W. H. Moore.....	353,370
Dental chairs, electrical appliance for, L. L. Deck-ard.....	353,403	Lock. See Indicator lock. Mail bag lock. Sash lock.....		Stair case, H. Stollwerck.....	353,605
Detective camera, Eastman & Cossitt.....	353,545	Lock and latch, combined, T. Kirwan.....	353,492	Stalk cutter, B. C. Bradley.....	313,368
Distilling petroleum, G. H. Kline.....	353,362	Locomotive, H. K. Adams.....	353,395	Stand. See Blacking stand.....	
Door roller, H. F. Sawtelle.....	353,507	Locomotive boiler, H. C. Goulding.....	353,303	Stenciling machine, C. L. Travis.....	363,520
Drawer guide, L. H. Nourse.....	353,640	Locomotive, electric, C. J. Van Depoele.....	353,335	Stopper. See Bottle stopper.....	
Drawings, making, C. Palmer.....	353,325	Loom shuttle, L. Goddu.....	353,405	Storage house, cold, J. B. Brown.....	353,348
Drier. See Clothes drier.....		Loom warp beam, T. Burns et al.....	353,538	Strap. See Satchel strap.....	
Drill, W. H. McAndrews.....	353,323	Mail bag, W. Hawn.....	353,407	Stringer and tie fastener, J. W. Crow.....	353,624
Drying machine for clothes, etc., centrifugally acting, D. M. Weston.....	353,890	Mail bag, G. W. Smith.....	353,645	Syringe, J. Barnes.....	353,523
Dumb waiter, J. Murtaugh.....	353,458	Mail bag lock, H. F. Gaines.....	353,300	Table. See Extension table. Folding table.....	
Earthenware, making porous, C. C. Gilman.....	353,631	Match and cigarette box, S. N. Randolph.....	3 3,327	Tanning compound, H. L. Wilcox.....	353,341
Ejector, fluid, C. White (r).....	10,786	Meat cutter, P. Diessler.....	353,438	Telegraph, autographic, J. H. Robertson.....	
Electric arc light, G. C. Pyle.....	353,643	Microphone, Wallace & Enholm.....	353,387	Telegraph, electric, E. A. Cowper.....	353,592 to 353,594
Electric circuit controller, W. Stanley, Jr.....	353,603	Milk cans, lock fastening for bottom hoops of, J. O'Neill.....	353,641	Telegraph relay, electric, J. I. Conklin, Jr.....	353,298
Electric current indicator, M. Waddell.....	353,645	Mill. See Rolling mill. Windmill.....		Telephone exchanges, switching apparatus and test circuit for, J. J. Carty.....	353,350
Electric machine, dynamo, C. Coeper.....	353,414	Moulding machine, S. C. Burris.....	353,285	Telephone transmitter, W. Burnley.....	353,536
Electric machine, dynamo, N. S. Keith.....	353,310	Moulding machine, variety, S. J. Shimer.....	353,510	Telephones, angle hanger for acoustic or me- chanical, M. Gerst.....	353,489
Electric therapeutic instrument, C. E. Baldwin.....	353,356	Mole trap, J. Reeder.....	353,502	Thill coupling, A. Bratschie.....	353,487
Electrical purposes, carbon for, E. Shaw.....	353,598	Motor. See Vessel motor. Water motor.....		Thimble, O. E. Weber.....	353,389
Electroplating machines, automatic circuit con- troller for, C. J. Van Depoele.....	353,334	Musical instrument, mechanical, E. G. Sturm.....	353,484	Toaster and broiler, G. S. White.....	353,339
Engine. See Gas engine.....		Nail. See Wire nail.....		Toboggan, J. W. Johnson.....	353,309
Erasers, machine for cleaning blackboard, J. Travis.....	353,387	Nail machine, wire, F. Philips.....	353,585	Toboggan, metallic shoe for, C. H. Emerson.....	353,547
Evaporating liquids by air, apparatus for, A. A. Denton.....	353,291 to 353,293	Neckwear, L. Eschner.....	353,486	Tongs or plate lifter, dish, R. W. Teese.....	353,231
Evaporator cover, Davis & Lyon.....	353,444	Needle swaging machine, P. M. Beers.....	353,529	Tool, facing, A. H. Donnally.....	353,485
Extension table, S. R. Moore.....	353,574	Nose ring for swine, Wood & Morley.....	353,651	Tool receptacle, E. G. Lamson.....	353,419
Fabric. See Knitted fabric.....		Oil can, J. B. Herboldshimer.....	353,417	Trap. See Mole trap.....	
Fan, exhaust, W. G. Sears.....	353,467	Oils and other liquids, apparatus for oxidizing drying, J. W. & F. R. Hoard.....	353,358	Triturating cylinder, J. R. Aising.....	353,279
Fence, E. M. Baker.....	353,437	Oven plate, R. E. Deane.....	353,290	Trough. See Watering trough.....	
Fence, L. A. Cussins.....	353,626	Pan. See Concentrating pan.....		Truck, car, T. Carter.....	353,286
Fence, wire, B. Scarles.....	353,328	Paper bag, W. H. Honiss.....	353,307, 353,308	Tube expander and cutter, W. I. B. McHies.....	353,425
Fertilizer distributor, J. P. Fulgham.....	353,551	Paper bag, W. A. Lorenz.....	353,319	Type writing machines, copy holder for, Clarkson & Fryer.....	353,622
Fertilizer distributors, feed cup for, W. Marks.....	353,570	Paper bag carrier, J. Burns.....	353,537	Type writing machines, leaf holding attachment for, T. A. Curtis.....	353,625
Fibers, process of and apparatus for dissolving and removing the gum from nettle and other plant, T. E. Schieffer.....	353,468	Paper folding, pasting, and trimming machine, G. E. Lloyd.....	353,638	Type writing, producing copies in imitation of, G. W. Weaver.....	353,338
Filter press, M. Swenson.....	353,514	Paper packing frame, C. F. Spaulding.....	353,471	Valve, duplex steam, S. Mills.....	353,457
Filtering sugar liquors, sirups, and saccharine juices, C. H. W. Foster.....	353,404	Pattern sheet, J. Schumacher.....	353,508	Valves, electrical apparatus for working, H. Likly et al.....	353,637
Fire alarm signal box, J. Ashworth.....	353,475	Pen, fountain, Brown & Beaumel.....	353,399	Vehicle spring, Oliver & Hunter.....	353,324
Firearm, breech-loading, G. A. Sachs.....	353,432	Photo developing box, W. H. Lewis.....	353,493	Vehicle, two-wheeled, G. C. Bovey.....	353,620
Fireproof compound, C. C. Gilman.....	353,629	Photograph or card holder, J. Petermann.....	353,326	Vellopede roller bearing, J. K. Starley.....	3 3,380
Fishing line spreader, H. C. Behrens.....	353,412	Piano case, T. H. Perry.....	353,583	Vessel motor, T. Duffy.....	353,236
Folding table, W. J. Newcomb.....	353,459	Pianoforte, E. Hofinghoff.....	353,4 3	Wagon brake, H. Hebert.....	353,5 9
Frame. See Paper packing frame.....		Pianos, mute bar damper for upright, P. Gmelin.....	353,301	Wagon, covered delivery, J. T. McLaughlin.....	353,866
Fringe, manufacturing chenille, S. Steinecke.....	353,433	Picker. See Fruit picker.....		Walstbands for garments, making, C. W. Wheeler.....	353,392
Fruit jar, M. O. Rehfuess.....	353,503	Pin. See Clothes pin.....		Wardrobe and book case, combined, J. F. Schmidt.....	353,382
Fruit picker, A. Green.....	353,304	Pipe cleansing attachment, V. Bonzagni.....	353,413	Washboard protector, C. J. Bonsfield.....	353,283
Furnace. See Boiler furnace.....		Pipe coupling, J. Nuttall.....	353,580	Watch balances and hair springs, device for test- ing, A. L. Keller.....	353,418
Furnace, J. H. Weitmeyer.....	353,474	Pipes, ceiling collar for gas, steam, and other, E. K. Rollins.....	353,585	Water motor, J. M. Seymour, Jr.....	353,596
Furnaces, air injector for, E. B. Cornell.....	353,351	Pipes, machine for making spirally formed, J. B. Root.....	353,431	Watering trough, A. J. Cross.....	353,289
Gas burner attachment, F. E. Mills.....	353,494	Pipes, seal trap for waste, J. McConnell.....	353,577	Weaner, calf, M. J. Ahlgrim.....	353,411
Gas engine, reversible, J. H. Clark.....	353,402	Piston and valve, metallic, J. Watts.....	353,522	Wheel. See Printing wheel.....	
Gas regulator, B. Franklin.....	353,548	Planter, R. A. Fraser.....	353,445	Wheelbarrow, J. P. Enderes.....	353,299
Gas regulator, M. G. Wilder.....	353,342	Planter and fertilizer distributor, cotton, J. W. Volz.....	353,386	Whip, H. Mullen.....	353,371
Gate. See Railway gate.....		Planter, combined corn and cotton, W. Walker.....	353,473	Whip, Suplee & Main.....	353,607
Gate, W. Tritch.....	353,560	Planter, cotton and corn, R. M. Tyus.....	353,648	Windmill, C. Ludwig.....	353,363
Gates, etc., device for closing, A. Eckert.....	353,218	Planter, hand corn, C. B. Arnold (r).....	10,785	Windmill, C. W. & H. E. Sylvester.....	353,516
Gearing, worm, G. H. Reynolds.....	3 3,429	Planter, seed, W. A. Holland.....	353,369	Window cleaner, C. B. Von Schenk.....	353,472
Glass press, T. G. Otterson.....	353,461	Plow, P. H. Lequire.....	353,455	Wire nail, F. Philips.....	353,427
Glassware, ornamentation of, A. Witthauer.....	353,523	Plow, J. F. Packer.....	353,495	Wire stretcher, W. D. Sherman.....	353,388
Governor for electric motors, A. W. Weston.....	353,367	Plow, balance, Greig & Benstead.....	353,356	Wire twister, E. Bunch.....	353,535
Grain binder, Hunt & Steward.....	353,560	Plow, gang, A. Shaffer.....	353,469	Woodworking machine, J. Casey.....	353,539
Grain, flour, etc., feeding mechanism for, C. A. Andrus.....	353,436	Plow, reversible, Benson & Hollis.....	353,347	Yoke, neck, D. W. Clarke.....	353,441
Grinding moulding cutters, machine for, F. S. Drake.....	353,415	Plow, wheel, I. R. Gilbert.....	353,628		
Grooving machine, I. L. G. Rice.....	353,376	Plow, wheel, J. F. Packer.....	353,497		
Guard. See Crossing guard.....		Pneumatic dispatch, automatic switch for, Bry- son, Jr., & Mudge.....	353,400		
Handle. See Bicycle handle.....		Pot. See Coffee pot.....			
Handles, manufacturing ornamental wooden, F. & C. F. Mankey.....	353,364	Press. See Cigar bundling press. Copying press. Filter press. Glass press.....			
Harness checks, safety loop for, E. K. Dennis.....	353,484	Printing machine registering mechanism, F. L. & S. G. Goss.....	353,556		
Harrow, P. C. & I. A. Carstensen.....	353,440	Printing machine, web perfecting platen, W. N. Kelly.....	353,312		
Harrow, O. C. Van Ness.....	353,611	Printing machines, rotary cutter for web, F. L. & S. G. Goss.....	353,555		
Harrow, revolving, J. D. Schibli.....	353,597	Printing wheel, W. R. Bacon.....	353,527		
Harvester, D. Young.....	353,344	Protector. See Washboard protector.....			
Harvester and husker, corn, G. B. Snow.....	353,384	Pulleys to shafts, securing, G. E. & N. Smith, Jr.....	353,329		
Harvester, corn, H. S. Bartholomew.....	353,476	Pulverizer, soil, Hepworth & Santany.....	353,491		
Harvester, cotton, W. G. Sears.....	353,466	Punching, shearing, and embossing machine, Ren- shaw & Thillman.....	353,589		
Harvester finger and finger bar, T. S. Brown.....	353,534	Rack. See Show rack.....			
Harvester finger bars, manufacture of, J. H. Jones.....	353,636	Radiators, air valve for, J. P. Marsh.....	353,689		
Hay rake, horse, F. Bental.....	353,397	Railway, cable, H. M. Lane.....	353,313		
Hay rake, horse, H. Myers.....	353,424	Railway, cable, T. J. Lovegrove.....	353,321		
Heater. See Car heater.....		Railway gate, D. W. Copeland.....	353,481		
Heater, S. W. Morgan.....	353,422	Railway rail fastening, P. P. Smith.....	353,601		
Heating apparatus, steam, W. P. Harthan.....	353,451	Railway signal, T. D. Williams et al.....	353,393		
Holst brake apparatus, R. A. Beaver.....	353,282	Railway trains, electric lighting of, C. E. Buell.....	353,349		
Hoisting machine, Kamm & Kaiser.....	353,564	Railway, wagon, T. Whalen.....	353,391		
Holder. Bag and twine holder. Blacking box holder. Card or picture holder. Horse tail holder. Photograph or card holder. Ribbon holder. Sash holder.....		Rake. See Hay rake.....			
Hook. See Coat and hat hook.....		Reel, G. W. McKinny.....	353,578		
Hook and buckle, combined, J. J. Pinkham.....	353,462	Reeling machine, W. H. Dunkerley.....	353,297		
Horse tail holder, J. G. Swain.....	353,608	Refrigerator house, D. F. Gerald.....	353,553		
Horses, apparatus for bathing the feet of, A. Pur- son.....	353,428	Regulator. See Gas regulator.....			
Horseshoe, I. Fenno.....	353,364	Rein spring, check, C. L. Spokenburgh.....	353,602		
Horse reel carriage, W. B. Wilcox.....	353,340	Ribbon holder, L. M. Devore.....	353,627		
House. See Refrigerator house. Storage house.....		Ring. See Nose ring.....			
Hydrant, G. A. Oglesby.....	353,581	Rivet, J. L. Hall.....	353,257		
Indicator. See Electric current indicator.....		Roller. See Door roller.....			
Indicator lock, C. F. Green.....	3 3, 57	Rolling mill, three-high, W. E. Harris.....	353,450		
Inhaler, D. B. Weightman.....	353,613	Saddle, riding, J. G. Lentz.....	353,454		
Injector, double tube, J. R. Goehring.....	353,490	Sash holder, E. M. Chumard.....	353,287		
Insulating electric conductors, composition of matter for, C. J. Van Depoele.....	353,653	Sash lock, H. F. Price.....	353,375		
Iron. See Chair iron.....		Satchel strap, J. A. Yarger.....	353,258		
Jack. See Boot or shoe finishing Jack. Jumping Jack.....		Saws, guide roll for band, G. S. Black.....	353,330		
Jar. See Fruit jar.....		Saw tooth, insertible, E. S. Snyder.....	353,355		
Jar clamp, E. H. Rice.....	353,580	Scale, automatic grain weighing, C. Dombay.....	353,558		
Jewelry, article of, J. C. Cottle.....	353,492	Scale, automatic weighing, H. K. Warner.....	353,588		
		Secondary battery element, C. Sorley.....	353,511		
		Sewing machine, H. E. Dieterle.....	353,542		
		Sewing machine, L. Esconer.....	353,487		
		Sewing machine, A. C. Babey.....	353,381		

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