

# 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 This is for our information, and not for publication.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) J. J. M.—The angle at the circumference of a windmill varies much for the power and velocity required. For high speed and light work the extreme angle may be from 7° to 10° with the plane of the mill. Where high winds prevail, 10° to 20° may be desirable. The angle should increase toward the center; at half distance between periphery and center the angle should be double the peripheral angle. For a full and illustrated description of mills and their power, see a work on "The Windmill as a Prime Mover," by Wolff, which we can furnish for \$3. A six foot mill will run a churn or grindstone.

(2) D. L. T. asks the number of pounds required to lift bodily from ordinary soil a green oak stump 12 inches diameter, also pine stump 12 inches diameter and 24 inches diameter. A. From 4 to 8 tons, according to kind and condition of soil.

(3) J. G. asks: 1. What is the freezing and boiling point of hydric cyanide? A. Boils at 80° Fah. Freezes at -0.4° Fah. 2. Are ferric disulphide and sulphide of iron the same? A. Both are identical.

(4) J. K. B. asks: What material is used in the manufacture of binder twine, such as used on harvesting machines? Does it require expensive machinery? A. Jute, Sisal hemp, and waste products of flax mills. Machinery for that purpose alone is not very expensive. Could behome made if you are familiar with the manufacture.

(5) "Louisville."—The footprints in the limestone found in Washington Co., Ohio, were probably made during the Carboniferous or coal-producing period. It is impossible to state the amount of denudation that this indicates. Where the geological sequence is complete, the Carboniferous is overlain by the Mesozoic, Tertiary, and Quaternary formations, but we do not know whether the series was complete at this point. It is probable that many thousand feet of sediment have been removed in order to expose this formation. Having no measure of the thickness of these more recent formations, the time required for their deposition and subsequent removal is similarly unknown.

(6) J. C. M. asks a recipe for sticky fly paper. A. Melt together one pound of resin and add two fluid drachms of linseed oil. While the mixture is warm, dip a spatula into it, and spread what adheres to the blade on foolscap paper. Different samples of resin require varying proportions of oil to make the composition spread properly.

(7) T. McM. asks: 1. What is the process of preparing salmon for canning? A. See "Canned Food," in SCIENTIFIC AMERICAN SUPPLEMENT, No. 493. 2. Would the mullet make a good canning fish under same process as the salmon? A. Such samples of canned mullet as have been put in the market have not been well received. 3. A cheap receipt for deodorizing kerosene oil. A. Mix it with chloride of lime in the proportion of three ounces to each gallon of liquid to be purified. The mixture is then introduced into a cask, some muriatic acid is added, and the whole well agitated. It is then passed into another vessel, containing slaked lime, which absorbs the free chlorine and leaves the oil sufficiently deodorized.

(8) C. L. asks: Can air after having been pumped out of a glass vessel be kept out? A. An exhausted glass vessel may be sealed so as to preserve a vacuum indefinitely by fusing the glass tube connecting the vessel with the air pump.

(9) L. H. H. asks: 1. Are there any mica mines now worked in Virginia, and what is the quality of the product? A. There are mica mines in Amherst, Bedford, Hanover, and Amelia Counties, which have yielded an excellent product, but are little worked now on account of the superior deposits in North Carolina. The southern portion of the State is believed to offer a promising field for prospecting. 2. Where are the largest and best deposits of mica found, to what extent are they worked, and what rank do the mines of North or South Carolina hold? A. The best deposits of mica so far discovered have been in Western North Carolina and in Chester and Pennington Counties, Dakota. The annual product of the latter locality amounts to \$70,000. The total product of the United States amounts to about \$370,000. The mica regions of South Carolina have not as yet been thoroughly explored. 3. What books would you recommend on mica mining, mineralogy, and geology? A. "Elements of Geology," by Joseph Le Conte (price \$4.00), and "Manual of Geology," by J. D. Dana (price \$5.00), are both excellent. "Descriptive Mineralogy," by J. D. Dana (price \$10.00), is the standard work on the subject, but his smaller book, "A Manual of Mineralogy and Lithology" (price \$2.00), would probably serve your purpose. We will send these books postpaid on receipt of price. For information concerning mica mining we would recommend "Mineral Resources of the U. S.," published by the Government, and the North Carolina Geological Reports.

(10) H. M. P. asks: 1. How do scientific men observe the process of development of man from

the fructifying of the egg to the birth of the child, or the process of ontogeny? A. By direct examination of the embryo or fetus during the several stages of development. The recent remarkable progress in embryology is largely due to the perfection of the mechanical means for making these examinations, and to the chemical reagents used to prepare the subject for extended study. By hardening, clearing, and tinting the fetus with chromic acid, and then making the finest possible microscopic sections, it is practicable to represent the entire process of development; and by providing for the suitable preservation of the specimens, to secure the opportunity of similar study to other investigators. 2. Has the supposed organism *Bathypbius Haeckelii*, discovered by Huxley, been confirmed? A. It is doubtful. Several scientists believe that the evidences of organic life which Huxley discovered were due to the alcohol in which the specimens were preserved. Recently, however, the Arctic navigator Bessels has reported the discovery of a free homogeneous protoplasm in Smith Sound, to which he gave the name *protophathus*. 3. Has spontaneous generation been produced artificially? A. No.

(11) S. W. S. asks: Will you please inform me whether there is any coating that can be applied to the inside of a water lime-plastered cistern which will prevent the water from becoming "hard"? If there is such an article, please state what it is and how to apply it. A. Our best recommendation is to wash it over several times with a wash of hydraulic lime and water. Asphalt would stop it, but would tend to give the water a taste, and would require an absolutely dry surface for application.

(12) J. F. writes: Will you please give me a process for magnetizing knitting needles? A. Prepare a coil of wire, No. 15 to 20, as long as the needle and of five to ten layers. Place the needles within it, and pass a strong current through it. Or by rubbing with a strong permanent magnet from pole to pole, always in the same direction, you can do it. Or simply place the ends against the field pieces of a strong dynamo while running.

(13) H. E. S. asks: Can you let me know of a cement that can be used on a tin roof that is old and leaky, that will stand heat and cold weather? A. Old paint skins, such as may be procured from painters, are much used.

(14) W. W. S. writes: Reading your articles on films, as represented by the sieve and the floating needle, why is it that the needle floated on water in a basin will point north and south? Is it through the influence of the magnetic current? A. If it points north and south, it is because it possesses enough magnetism to be affected by the polarity of the earth. 2. If a ball rolling on a double inclined plane is operated at each end of its track by a spring of sufficient power to overcome the influence of gravitation and friction when the ball is put in motion, would it not continue to move from spring to spring until either the springs become weakened or the wearing of some parts increased the friction sufficiently to bring the ball to a rest? A. The springs would have to be worked by some other power than the impulse of the ball. 3. Such an instrument could not be termed perpetual motion, could it? A. It would not constitute perpetual motion.

(15) O. S. P. writes: I made a magic lantern, but cannot get satisfactory results from it. In my lantern I use 2 plano-convex condensing lenses 4 1/4 inches diameter for a condenser (the focal distance from the lamps is 4 1/4 inches, and the two lenses are placed 2 1/4 inches apart in the condenser). For an object glass I use a Darlot photographic lens 3 inches diameter. This lantern, when placed about 8 feet from the screen, only gives a picture of 2 feet diameter (with a 60 candle power oil lamp). Where do you think the fault lies? A. Your Darlot objective is of too long focus. You can only remedy the trouble by placing your lantern far back from the screen. Why do you not place your condenser lenses closer together, and shorten up the whole apparatus?

(16) W. S. W. asks: 1. Will sal ammoniac cells work an electric lamp? If so, how many Leclanche Gonda cells will be required for a 4 candle power incandescent lamp? A. Leclanche cells are quite unsuited for steady work. 2. What are the relative proportions of zincs and carbons, and sizes required, to retain a 19 platinum wire at white heat constantly for 1/4 hour; the exciting fluid to be sul. acid and bichromate potash? A. It depends on the length of wire. Anywhere from eight cells upward.

(17) D. S. S. asks: 1. How many cells of Disque Leclanche battery will it take to operate a telephone line 1 mile in length of No. 16 galvanized wire, insulated at pole with glass, and ground connection? A. Two to four cells. 2. Would connection to iron pump pipe in well 70 to 80 feet deep answer for ground connection? A. Such connection would be excellent, as long as the well contained water enough to cover end of pipe. 3. Would additional cells be necessary if magneto bell be used? A. Four cells should do everything. 4. Would it be necessary to insulate wire through side of building with rubber tubing, or would silk-covered office wire answer? A. Insulate by rubber tubing. 5. Would a horse shoe magnet telephone, as described in SUPPLEMENT, No. 142, make a good serviceable instrument for every day use, and how long would it remain so, using six inch magnets? A. It would be perfectly serviceable, and would last for many years.

(18) E. B. R. asks: 1. What resistance would a straight electro magnet have to be to repel a 5 inch horseshoe permanent magnet to work as a motor situated between its poles, when provided with suitable commutator? A. Very slight resistance would be required. The electro magnet should have a thick core—1/4 inch round iron. 2. How can a permanent magnet be spread apart so that the top is as wide as the bottom, without damaging it? A. You could not spread apart the limbs of a horseshoe magnet without heating and consequently demagnetizing it.

(19) S. F. M. writes: I built a cherry sideboard. It was first gone over with Wheeler wood

filler, sandpapered, and then shellac varnish rubbed in. It has a smooth, hard finish, but is dead in appearance. How should I treat it now to give it a bright, polished look? A. Make a mixture of rather thick alcoholic shellac varnish and boiled linseed oil, equal parts. Shake it well before using. Apply in small quantities with a cotton cloth, rubbing the work briskly until the desired polish is secured.

(20) J. W. asks: 1. How many cells of the Bennett battery, of the size indicated in SCIENTIFIC AMERICAN, April 11, 1885, will it take to charge the field magnet of a dynamo constructed after the model and proportions of the dynamo in SUPPLEMENT, No. 161? A. About six such cells would be enough. 2. Would well seasoned hard wood answer for a commutator if well coated with shellac and the set screw is bedded in the wood, so that the head can be thickly covered with shellac? A. It would answer, though ebonite is far preferable.

(21) F. S. D. desires a practical recipe for making a first class quick rising dry yeast. A. We would recommend you to strain brewer's yeast until a moist mass is obtained. Place this in hair bags, and press out till the mass is nearly dry. Then sew up in linen bags, and it is ready for transportation. It will keep for a long time, and is much used by bakers in the manufacture of the so-called Vienna bread.

(22) A. S. asks: 1. What volume of air is necessary for the complete combustion of a given volume of ordinary illuminating gas? A. From 7 to 10 vols. 2. Is there any flavoring added to pear phosphates, or is it the natural taste? A. It is made as follows: Take Bartlett or other good pears, cut or chop very fine, press, allow to settle; pour off supernatant liquid; mix one pint of this pear juice with one pint acid phosphate and one pound of sugar, or enough to sweeten.

(23) A. P. and H. A. M.—The first regular passenger railroad in America worked by steam locomotives was the Charleston and Hamburg, of South Carolina, chartered in 1827. On a part of this road the locomotive "Best Friend" was operated in the latter part of 1830. The first trial of a locomotive in America was in 1829, on a road built by the Delaware and Hudson Canal Company, to connect their mines at Carbondale with the town of Honesdale.

(24) J. L. P. asks: 1. The largest craft afloat? A. The Great Eastern. 2. The weight of the heaviest gun? A. 110 tons. 3. How many cubic feet of air are required for the practical combustion or consumption of one pound coal? A. 140 to 152 cubic feet for perfect combustion, according to the percentage of combustible in the coal. 4. By what rule do we determine the proper area or dimensions of chimney or smoke stack, to be in proportion with grate surface? A. A common practice is to make the chimney equal to two-tenths the area of the grate. The proper formula is:

$$\frac{15c}{\sqrt{h}} = \text{area,}$$

c being lb. of coal burned per hour, h height of chimney. 5. A good work on the last question, and price? A. Nystrom's Mechanics (revised edition) is good on this and all subjects appertaining to steam engineering and mechanical subjects. We can mail it you for \$3.50.

(25) A. S. writes: For home made ginger pop: Add about one gallon of boiling water to two ounces of best ground ginger. Stir in whites of one or two eggs and let settle over night. In the morning pour off as much clear liquor as possible, add enough water to make two gallons, and stir in three pounds granulated sugar. Now add 1 ounce cream tartar, the strained juice of three lemons, and two tablespoonsful of home made yeast. It should be perfectly clear. Stir well and bottle. It will take about two days to ripen in a warm place, as a mantle piece over the kitchen range, or a week in a cool place, as the cellar. It should never be kept more than two weeks, or you may lose the bottles. The bottles should be laid on their sides, to keep the corks wet and tight.

(26) W. K. B. desires (1) simple method of removing strawberry stains from white marble—will ammonia? A. Mix up a quantity of the strongest soap-les with quicklime, to the consistency of milk, and lay it on the stone for twenty-four hours; clean it afterward, and it will appear as new. 2. Best method of restoring nickel bicycle which has become slightly rusty? A. If the plating has not been worn off, the rust can be removed by polishing with rouge.

(27) J. L. H. asks: 1. What causes the leaves of the sensitive plant to fold up when touched? A. Because the petiole, which unites the limb or blade of the leaf to the stem, has an articulation, or a construction with a tendency to disunion, shown in a swelling formed of cellular tissue, irritation of the cells of which induces a depression of the whole bipinnate leaf; a similar property exists in the struma at the base of the leaflets which fold upward. 2. What is the most suitable material for foundation of a heavy engine? How much lower should the back end of a 14 foot return tubular boiler be set than the front end? How thick should the brick walls for boilers of this size be, also distance of bridge wall from bottom of boiler, to burn wood? A. For engine foundations, stone or hard brick laid in Portland cement, with or without dressed capstone, to suit style of bed plate or engine bearings. For a 14 foot boiler, 1 1/2 inches inclination in its length to rear end. Walls 12 inches with 1 inch air space, and 4 inch wall outside tied in with headers enough to stay it, and solid at places opposite back stays. Bridge wall to be 8 inches clear from boiler shell.

(28) I. D. F., of Mass.—To etch your name on steel tools, proceed as follows: Clean thoroughly of grease, and then spread a thin coat of beeswax or paraffine on it at the place where the name is to be. This must be as thin as possible. Then, with a sharp needle point, write through the wax to the steel. Paint this over with a mixture of nitric and muriatic acid, in the proportion of six to one respectively, and when bubbles cease to rise, the work is done. Wash in strong soda water.

## 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,

July 20, 1886,

AND EACH BEARING THAT DATE.

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

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Door bolt, jail, J. C. Hintz.....	345,786	Nose bag, G. Gray.....	345,839	Spring. See Metallic spring. Vehicle Platform spring.....			
Doors, supporting device for, F. V. Phillips.....	345,988	Numbering and printing machine, rotary hand, Ingersoll & Henry.....	345,697	Sprinkler, W. S. Elstun.....	345,958		
Draught equalizer, M. Lynde.....	346,054	Nut lock, G. Grossman.....	345,842	Square and bevel, T. H. E. Remick.....	345,806		
Draught equalizer, J. W. Wolfe.....	346,080	Nuts, machine for making, J. Maxwell.....	345,795	Stamp, hand, J. C. Powell.....	346,065		
Drapery hook, E. S. Kenney.....	345,904	Oil cake mat, J. A. & M. T. Murphy.....	346,059	Stand. See Clothes rack stand.			
Dress protector, J. M. Haskell.....	345,970	Oil can, F. H. Stevens.....	345,738	Starch from grain, preparing, J. C. Schuman.....	345,926, 345,927		
Drier. See Fruit drier.		Ore, apparatus for amalgamating, E. Spencer.....	345,868	Starching machine, H. E. Smith.....	345,935		
Dropper. See Seed dropper.		Ore separation, saving floating materials in, H. Bradford.....	345,951	Stays, folder for covering, C. F. Littlejohn.....	345,738		
Dyestuff from benzyldiphenylamine, sulphonated purple, Bull & Muller.....	346,022	Organ bellows, valve for, J. H. Chase.....	345,678	Steam boiler, R. W. King.....	345,848		
Dyeing apparatus, J. Gillet.....	345,892	Oven, baker's, R. Lamb.....	345,906	Steam boilers, bridge wall for the fire beds of, H. Schneider.....	345,809		
Egg beater, E. A. Marsh.....	345,709	Padlock, H. Abbott.....	346,011	Steam generator and radiator, combined, E. Reynolds.....	345,991		
Electric battery, O. Lugo.....	346,053	Paper, etc., apparatus for waxing, Sherck & Batig, Jr.....	345,864	Steam heater, W. C. Bronson.....	345,879		
Electric battery, C. Wirt.....	345,756	Paper making machine, E. Wilmont.....	346,079	Stool, cane, E. O. Leermo.....	345,852		
Electric lights, circuit controlling key for incandescent, A. G. Brown.....	345,880	Paper making machine, felt cleaning device for, Allan & Mason.....	346,013	Sugar, manufacture of, F. Schwengers.....	345,810		
Electric motor, vibrating, A. L. Parcellle.....	345,720	Paper pulp moulded heads of barrels while being dried, mechanism for use in supporting the, G. W. Laraway.....	345,705	Swing, T. W. Bowen.....	345,950		
Electrical indicator, C. Wirt.....	345,755	Paving stone, slab, etc., terro metallic, L. Promoli.....	345,726	Swinging gate, F. B. Jonas.....	346,050		
Electrical synchronous movement, A. L. Parcellle.....	345,721	Paving stones, slabs, etc., furnace for the manufacture of terro metallic, L. Promoli.....	345,727	Table. See Folding table.			
Embroidering machine, E. Cornely.....	345,886	Paving stones, etc., manufacture of terro metallic, L. Promoli.....	345,805	Tanning hides, J. S. Billwiller.....	345,827		
Engine. See Rotary engine.		Pencils and other implements, holder for, J. Appleby.....	346,014	Telephone, J. Emmet, Jr.....	346,031		
Exercising machine, J. D. O'Brien.....	345,856	Pencils, etc., rubber tip attachment for lead, G. Singleton.....	345,865	Telephone transmitter, G. Brambel.....	345,762		
Fats and oils, bleaching animal, W. B. Allbright.....	345,872	Photographers, pan for the use of, W. I. Adams.....	345,871	Thrashing machine, I. D. Heebner.....	345,695		
Feed water heater, M. J. Galligan.....	345,778	Photographic printing, R. B. West.....	345,753	Thrashing machines, belt collar for, M. B. Heller.....	346,042		
Fence machine, wire, L. C. Lowden.....	346,052	Piano action, upright, R. E. Letton.....	345,706	Tie. See Bale tie. Railway tie.			
Fence, railing, or balcony, J. Morein.....	346,057	Piano tuning pin, R. McMillan.....	345,711	Tile, E. Aldrich.....	345,942		
Fence wire sections, stretching truck for, J. F. Hanna.....	345,966	Piano tuning pin, A. Uhlig.....	345,748	Tile kiln, J. Gearhard.....	345,964		
Fences, stay for wire, C. B. Brainard.....	345,877	Pin. See Piano tuning pin. Safety pin.		Time lock, J. B. Young.....	346,010		
Fertilizer, H. H. Colquitt.....	346,024	Pipe coupling, Rowand & Hunzeker.....	345,732	Tobacco, machine for stripping and booking, J. De la Mar.....	346,028		
Fiber, apparatus for carbonizing, A. L. Reinmann.....	345,860	Pipe wrench, G. E. Franklin.....	345,777	Tongs, culinary, A. J. Holmes.....	345,846		
Fiber from fiber producing plants, obtaining, A. E. Newman.....	345,984	Plane, blind nailing, W. G. Stranahan.....	345,870	Tool, combination, E. D. Beales.....	345,826		
File, letter, L. Nottingham.....	346,061	Planter, corn, Allison & Bowden.....	345,757	Tool, hand, G. Hayes.....	345,687		
Firearm, breech-loading, J. M. & M. S. Browning.....	346,021	Plastering, filling, wall ornaments, etc., composition for, W. Horstmann.....	345,847	Top, spinning, J. S. Gold.....	346,087		
Firearm, breech-loading, G. Huntley.....	345,902	Plow, A. Rolow.....	345,992	Torpedo railway signals, attachment for, J. Deuel.....	345,774		
Firearm, breech-loading, W. J. Kriz.....	345,789	Plow, J. P. Zeller.....	346,081	Truck and step ladder, combined, J. Hill.....	345,973		
Firearm, magazine, J. M. & M. S. Browning.....	345,881, 345,882	Plow jointer, A. G. Christman.....	345,770	Type writing machine, E. Fitch.....	345,836		
Fire extinguisher, L. S. Lewis.....	345,908	Plow, reversible, N. McLean.....	345,797	Type writing machine, H. J. Thomas.....	346,000		
Fire hydrant, J. C. Kupferle.....	345,790	Plow, sulky, E. D. Meagher.....	345,713	Valve for radiators, air, A. C. Walworth.....	345,747		
Fluid pressure motor, G. Poore et al.....	345,858	Plows, cutting attachment for, J. Owens.....	345,916	Valve movement in pumping engines, C. F. Richardson.....	345,781		
Fly trap, E. Tschira, Jr.....	345,817	Poke, animal, T. D. Reaves.....	345,859	Vehicle platform spring, E. A. Hendricks.....	345,838		
Foil condenser, W. H. Pomeroy.....	345,724	Pot. See Coffee and tea pot. Dash pot.		Vehicle seat lock, J. Casner.....	345,672		
Folding chair, J. W. Mason.....	345,710	Potato digger, J. Van Sclien.....	345,936	Vehicle spring, S. Atkinson.....	346,016		
Folding table, R. Decker.....	346,027	Press. See Baling press.		Vehicle, two-wheeled, W. H. & C. A. Makutchan.....	345,708		
Fruit conveyor, M. N. Gaines.....	345,891	Propeller, screw, E. Bennett.....	345,761	Vehicle wheel, J. R. Winston.....	346,008		
Fruit drier, C. W. Kitts.....	345,701	Propelling and steering vessels, J. J. Kunstadter.....	345,769	Velocipede, H. J. Lawson.....	345,851		
Furnace, E. G. Hewitt.....	345,971	Printing machine, A. Campbell.....	345,669	Velocipede, A. Vick.....	346,078		
Furnace grate, P. W. Lippitt.....	345,792	Printing machine inking device, H. F. Bechman.....	345,760	Ventilator. See Car ventilator.			
Furniture, household, J. C. Cary.....	345,769	Pulley belt, F. B. Ray.....	346,067	Ventilator, H. P. Andrews.....	345,945		
Galvanic battery, T. Erhard.....	346,032	Pump or similar apparatus, rotary, C. T. Colebrook.....	345,885	Ventilating screen, G. Hayes.....	345,692		
Garment, protective, G. W. Hill.....	345,899	Punching and stitching eyelet holes, machine for, J. W. Blodgett.....	345,863	Vessel, packing and storing, D. M. Somers.....	345,931		
Gas engine, R. F. Smith.....	345,968	Railway, electric, J. C. Henry.....	345,845	Vise, W. H. Reyher.....	345,980		
Gas, burner for natural, F. Barnhart.....	345,825	Railway gate, N. Harris.....	345,896	Vulcanizer, M. P. Carll.....	345,868		
Gas burner, water and oil, W. S. Mead.....	345,712	Railway signal, C. M. Haver et al.....	345,782	Wagon box, S. V. Kelly.....	345,975		
Gas to convert it into illuminating gas, treating natural, J. McKay.....	345,880	Railway tie, D. G. Ross.....	346,069	Wagon, dumping, J. A. De Wandelaer.....	345,775		
Glass globes, shades, etc., machine for making, D. J. Lorden.....	345,979	Railway tie or sleeper, C. Sailliez.....	345,733	Wagon running gear, H. Bensmann.....	345,661		
Glove fastening, S. W. Shorey.....	345,980	Railway track jack, Hazleton & Mack.....	345,844	Wardrobes and closets, clothes hanging device for, A. L. Rennekamp.....	345,921		
Grain binder cord holder, O. Cooley.....	345,674	Railways, safety appliance for, Bernstein & Goldstein.....	346,018	Warehouse, fireproof portable corrugated, A. W. Schulenburg.....	346,071		
Grain, machine for cleaning, L. M. Smith.....	345,937	Ranges, shaking grate for, J. H. McIlvain.....	346,056	Watch chain swivel and watch protector, combined, J. T. Healy.....	345,783		
Gun barrel cleaner, A. J. Upham.....	345,818	Razor sharpener, A. Payne.....	345,723	Watch movement holder, C. Teske.....	345,815		
Gun mounting, J. Vasseur.....	345,744	Refrigerating apparatus, trap for ammonia, T. G. Goldschmid.....	346,038	Watches, apparatus for demagnetizing, Giles & Fenner.....	345,838		
Harvester, bean, F. W. Miller.....	345,981	Revolver, I. Johnson et al.....	345,974	Watches, cannon pinion for, G. C. Moor.....	345,810		
Hat or cap, J. C. Goebel.....	345,865	Rocking chair, base, J. Finn.....	345,678	Watches, poisoning the hair springs of, T. Gribbi.....	345,840		
Hay tedder, P. A. Spicer.....	345,932	Roller. See Curtain roller.		Water closet pans to their rock shafts, attaching, S. V. Buskirk.....	345,667		
Heater. See Feed water heater.		Roller mills, feeding mechanism for, Brislin & Vinnac.....	345,953	Weather strip, J. H. Nolan.....	346,060		
Heating apparatus, H. C. Berry.....	345,876	Rolls, let-off device for delivery, M. F. Field.....	345,877	Weeder, field, J. P. Johnson.....	345,908		
Heating apparatus, J. Conroy.....	345,833	Rotary engine, P. P. Belt.....	345,875	Winding machines, bobbin holder for, C. F. Alexander.....	345,943		
Heating apparatus, exhaust steam, J. T. King.....	345,850	Rotary engine, Deane & McAllister.....	346,029	Windmills, gearing for, G. H. Pattison.....	345,722		
Heating apparatus for warming feet, portable, W. H. Swift.....	346,075	Rowlock, G. W. Palmer.....	345,919	Wire, apparatus for reeling or winding, E. Clifton.....	345,882		
Heel nailing machine, F. F. Raymond, 2d.....	345,920	Ruling machines, striker attachment for paper, B. Owens.....	346,063	Wire barbing machine, A. J. Bates.....	345,759		
Hinge, lock, J. C. Howe.....	346,046	Saddle, gig, G. R. Lips.....	345,853	Wire cloth, B. Scaries.....	345,785		
Hinge, spring, Kochsmeier & Waldorf.....	345,905	Safe, kitchen, A. M. Herman.....	345,784	Wire rope lines, elevated, Bleichert & Schatte.....	345,828		
Hinge, spring, G. W. Warner.....	345,743	Safety automatic brake, F. E. Kinsman.....	345,700	Wires with lead, machine for covering insulated, A. K. Eaton.....	345,956		
Hog and chicken cholera, remedy for, J. A. Knox.....	345,788	Safety pin, J. Jenkins.....	345,848	Wood, preparation of kindling, J. L. Seymour.....	345,928		
Holder. See Christmas tree holder. Grain binder cord holder. Sash holder.		Sand and water feeding mechanism, A. Landon.....	345,976	Wrench. See Pipe wrench.			
Hook. See Drapery hook.		Sash cord fastener, E. T. Bradbury.....	345,878	Wringer. See Clothes wringer.			
Hoop machine, barrel, G. S. Foster.....	346,035	Sash holder, M. Bourke.....	345,668				
Horseshoe, soft ground, L. Brigham.....	345,763	Sash lock and holder, E. P. Gilman.....	345,779				
House, portable, W. J. Anderfuren.....	345,944	Sashes, device for operating, G. W. Paine.....	345,857				
Hub mortising machine, Brown & Meyer.....	345,766	Saw set, gauge, and raker guide, combined, M. Lalonde.....	345,791				
Hub, wheel, W. J. Miller.....	345,716	Saws, automatic feed for edging, E. H. Barnes.....	345,758				
Hydro extractor, centrifugal, C. E. Dulin.....	346,030	Scaffold, suspended, Birck & Fischer.....	346,019				
Indicator. See Electrical indicator.		Scale section liner, C. M. Podgorski.....	345,989				
Inhaler and respirator, C. W. Munson.....	345,718	Scale, weighing and price, N. W. Austin.....	346,017				
Ironing board, W. Feigel.....	345,676	Scarf pins, device for securing, J. E. Master.....	345,794				
Ironing machine, J. D. Hill.....	345,785	Scarf, sailor knot, H. Heath.....	345,807				
Ironing machine, H. E. Smith.....	345,936	Screen. See Ventilating screen.					
Jail or prison, C. C. Rittenhouse.....	345,924	Screwdriver, T. G. G. Mout.....	346,056				
Jar, W. Somerville.....	345,999	Screwswaging machine, C. Fairbairn.....	345,959				
Journal box, G. R. Meneely.....	345,738	Seutching machine, A. E. Newman.....	345,985				
Key shaping machine, spring, Murray & Brislin.....	345,717	Seal, E. J. Brooks.....	345,764				
Kife, pencil sharpener, etc., pocket, J. W. L. Hillmann.....	346,043	Seal, tin strip, E. J. Brooks.....	345,765				
Ladder, extension, J. Schmidlapp.....	345,808						
Ladder, extension fire, D. D. Hayes.....	345,686						
Lance, bomb, E. Pierce.....	345,903						
Lamp, electric arc, A. G. Waterhouse.....	345,937						
Lamp, forced draught, R. Hitchcock.....	345,900						
Lamps, circuit controlling key for incandescent electric, A. G. Brown.....	346,020						
Lap robe and splatter dasher, J. J. Williamson.....	346,006						
Leather and other material, apparatus for clamping and stretching, J. M. Keene.....	345,699						
Life-preserving corset, A. A. Feern.....	345,960						
Lock. See Nut lock. Padlock. Sash lock. Time lock. Vehicle seat lock.							