#### Business and Personal.

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 mublication office as early as Thursday morning to appear in next issue

THE SINGER MANUFACTURING COMPANY'S CASE FACTORY, SOUTH BEND, Ind., November 4, 1881.) H. W. Johns Manufacturing Company, New York.

GENTLEMEN: Some of your Asbestos Roofing was used to cover our dry kilns during 1879, and at this date is in good order. The under side of the roof is exposed to steam and acid generated in drying lumber, and a temperature of 250° heat; while the roof rafters and sheathing have cracked by the heat, your roofing shows

no sign of damage.

Tin roofs, painted both sides, used to last but a few months, while the ordinary gravel roofs are useless on our kilns. Yours very truly, THE SINGER M'F'G Co., L. PINE, Supt.

New York Assay Laboratory, Thos. B. Stillman &

Co., 40 Broadway and 53 New St., New York. Send for descriptive circular.

Prepare to save your apple crop this year. By the use of Boomer & Boschert's Cider Press more money can be realized from your orchard than from all the rest of your farm. Send for illustrated circular, with prices which are unusually low. 15 Park Row, New York.

Garmore's Artificial Ear Drums, an appliance for the relicf of partial or entire deafness, invented by one who bas been deaf thirty years. Simple and scientific in construction, and not observable when in use. Send for circular. Jno. Garmore, S. W. Cor. 5th and Race Sts., Cincinnati, Ohio.

A Valuable Christmas Present. - Volumes of the Manufacturer and Builder, for any year since 1869, beautifully bound, \$2.50 each, postpaid; or complete set, from 1869 to 1880, inclusive, for \$27. Address H. N. Black, 37 Park Row, New York.

Workshop Receipts.-A reliable Handbook for Manufacturers and Mechanics. \$2, mail free. Ornamental Penman and Signwriter's Pocketbook of Alphabets. 20 cents. E & F. N. Spon, 446 Broome St., New York.

For Sale.-Patent on Ice Machines. W. J. Lyons, De cherd. Tenn.

Wanted-Situation by Gold, Silver, and Nickel Plater; 22 years' experience. Address Plater, Oakville, Conn.

Engines purchased for cash or advances made on consignments. E. E. Roberts, 107 Liberty St., N. Y.

Presses & Dies (fruit cans) Ayar Mach, Wks., Salem, N.J Portable Power Drills. See Stow Shaft adv., p. 348.

Mailed free, Catalogue of Books for Engineers. The oretical and Practical. E. & F. N. Spon, 446 Broome St.,

Latest Improved Diamond Drills. Send for circular

to M. C. Bullock, 80 to 88 Market St., Chicago, III. Completed and ready for shipment to purchaser, one of our celebrated Milling Machines. Weight, about 1,200 George S. Lincoln & Co., Phœnix Iron Works 60 Arch St., Hartford, Conn.

Telegraphic, Electrical, and Telephone Supplies, Tele graph Instruments, Electric Bells, Batteries, Magnets Wires. Carbons, Zincs, and Electrical Materials of every Illustrated catalogue and price pages, free to any address. J. H. Bunnell & Co., 112 Liberty St., N. Y.

Wood-Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

For Sale .-- A complete set of Patterns, Flasks, and Core Arbors, for making Cast Iron Flanged Pipe, Elbows, Tees, and Greenhouse Fittings. Will be sold low to clean out a branch of a business. Address C., Box 1358, New York.

Abbe Bolt Forging Machines and Palmer Po ver Hammers a specialty. S. C. Forsaith & Co., Manchester, N. H. Foot Lathes, Fret Saws, 6c. 90 pp. E. Brown, Lowell, Mass.

"How to Keep Boilers Clean." and other valuable information for steam users and engineers. Book of sixty-four pages, published by Jas. F. Hotchkiss, 84 John St.. New York, mailed free to any address.

Supplement Catalogue.-Persons in pursuit of infor mation on any special engineering mechanical, or scientific subject, can have catalogue of contents of the Sci-ENTIFIC AMERICAN SUPPLEMENT sent to them free The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Combination Roll and Rubber Co., 27 Barclay St. N. Y. Wringer Rolls and Moulded Goods Specialties.

Punching Presses & Shears for Metal-workers, Power Drill Presses \$95 unward Power & Foot Lather Prices. Peerless Punch & Shear Co.,115 S.Liberty St., N.Y. Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 301. Pure Oak Leather Belting. C. W. Arny & Son. Manufacturers Philadelphia. Correspondence solicited.

The Best constructed low priced Engines are built by E. E. Roberts, 107 Liberty St., New York, Communicate, Split Polleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works Drinker St., Philadelphia, Pa.

Experts in Patent Causes and Mechanical Counsel. Park Benjamin & Bro. 234 Broadway, New York.

Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, l'a.

National Steel Tube Cleaner for holler tubes Adjustable, durable. Chalmers-Spence Co., 10 Cortlandt St., N.Y. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsb'g, Pa. Best Oak Tanned Leather Belting Wm F. Fore-

paugh, Jr., & Bros., 531 Jefferson St., Philadelphia, Pa. 4 to 40 H P. Steam Engines. See adv. p. 318.

Electric Lights - Thomson Houston System of the Arc type. Estimates given and cor tracts made. 631 Arch, Phil. Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss. Brooklyn, N. Y.

Improved Skinner Portable Engines. Erie, Pa. Peck's Patent Drop Press. See adv., page 333.

Learn Telegraphy. Outfit complete, \$4.50. Catalogue free, J. H. Bunnell & Co., 112 Liberty St., N. Y.

List 27.—Description of 3,000 new and second-hand Machines, now ready for distribution. Send stamp for same. S.C. Forsaith & Co., Manchester, N.H., and N.Y.city.

Saw Mill Machinery. Stearns Mfg. Co. See p. 333. Cope & Maxwell M'f'g Co. 's Pump adv., page 334.

The American Electric Co. and Proprietors and Manu facturers of the Thomson Houston System of Electric Lighting of the Arc Style. New Britain, Conn.

For Mill Mach'y & Mill Furnishing, see illus. adv. p.332. Supplee Steam Engine. See adv. p. 270.

See Bentel, Margedant & Co.'s adv., page 349. For the best Diamond Drill Machines, address M. C.

Bullock, 80 to 88 Market St., Chicago, Ill. Clark & Heald Machine Co. See adv., p. 350.

Diamond Saws. J. Dickinson, 64 Nassau St., N. Y. Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

50,000 Sawyers wanted. Your full address for Emerson's Hand Book of Saws (free). Over 100 illustrations and pages of valuable information. How to straighten saws, etc. Emerson, Smith & Co., Beaver Falls, Pa.

Telegraph, Telephone, Elec. Light Supplies. See p. 350. For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 350. Peerless Colors for Mortar. French, Richards & Co. 410 Callowhill St., Philadelphia, Pa.

Gear Wheels for Models (list free); Experimental Work, etc. D. Gilbert & Son, 212 Chester St., Phila., Pa. Gould & Eberhardt's Machinists' Tools. See adv., p. 349. Elevators, Freight and Passenger, Shafting, Pulleys and Hangers. L. S. Graves & Son, Rochester, N. Y. Safety Boilers. See Harrison Boiler Works adv., p. 349. The Medart Pat. Wrought Rim Pulley. See adv., p. 349. For Heavy Punches, etc., see illustrated advertise

ment of Hilles & Jones, on page 349.

Engines, 10 to 50 H. P., \$250 to \$500. See adv., p. 350. Pays well on small investment.-Stereopticons, Magic Lanterns, and Views illustrating every subject for public home amusement. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., N. Y. Barrel, Key, Hogshead, Stave Mach'y. See adv. p. 349. Renshaw's Ratchet for Square and Taper Shank Drills.

The Pratt & Whitney Co., Hartford, Conn. Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p.348

For best low price Planer and Matcher, and latest improved Sash, Door, and Blint Machinery, Send for catalogue to Rowley & Hermance. Williamsport, Pa.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 340.

Common Sense Dry Kiln. Adapted to drying all of material where kiln, etc., drying houses are used. See p.350 The Porter-Allen High Speed Steam Engine. Southwork Foundry & Mach. Co., 430 Washington Av., Phila.P. The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher.

Schumm & Co., Philadelphia, Pa. Send for circular. Ore Breaker, Crusher, and Pulverizer. Smaller sizes un by horse power. See p. 349. Totten & Co., Pittsburg.



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unles accompanied with the full name and address of the of time.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is nurely of a personal character, and not of general interest should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration,

Any numbers of the Scientific American Supple-MENT referred to in these columns may be had at this office. Price 10 cents each.

Correspondents sending samples of minerals, etc. for examination should be careful to distinctly mark or label their specimens so as to avoid error in their identi-

- (1) D. S. asks: 1. Are not the steel tires of locomotive driving wheels put on by means of shrinking? A. Yes. 2. I have read a number of times of the sudden rupture of the tire on a drive wheel. Now, if my first question is answered in the affirmative. may not the rupturing of the tires be due largely to the strain on the tire caused by shrinking it on to a rigid wheel? A. If the work is properly done, the shrinking should not rupture the tire. 3. If shrinking on the tire has a tendency to weaken the same, why do not the builders of locomotives adout some means of setting the tires of the drive wheels so that there will be no strain on the said tires? A. Because there is no known method of fastening which would hind the tire to the wheel with sufficient firmness.
- (2) E. A. asks: Will you be kind enough to give me a good recipe bow to bleach bones? A. Dip the bones for a few moments in a boiling solution of one pound caustic soda in a gallon of water, then rinse thoroughly in water, rub down with fine pumice stone, and expose until whitened, to the vapor of burning sulphur largely diluted with air, then rinse in warm water. Bones may also be whitened by exposure in a weak solution of javelle water.
- (3) D. B. & Co. ask: Can you inform us how to make javelle water? A. Javelle water proper is prepared by passing gaseous chlorine-derived from the action of hot sulphuric acid on a mixture of common

salt and oxide of manganese-into a ten per cent aqueous solution of carbonate of potash until the latter will absorb no more. It may also be made by adding a solution of carbonate of potash to a solution of chlorinated lime (bleaching powder) as long as a precipitate continues to form, the liquid being afterward decanted or filtered. Ordinarily, however, the liquid called javelle water is chlorinated sods and not potassa. This liquid, also known as Labarraque's disinfectant, is prepared by dissolving 12 oz. (avoir.) of soda crystals in 1 quart (imperial), and saturate with chlorine gas evolved from 3 oz. of black oxide of manganese, 4 oz. common salt, and 21/2 fl. oz, of sulphuric acid diluted with 3 fl. oz, of water by aid of heat in a retort. A readier way of making the solution for ordinary purposes consists in mixing a solution of 1/2 lb. good lime chloride in 3 pints of water with 7 oz. carbonate of soda (crystals) in 1 pint of water-drawing off the clear liquid after the mixture has settled. Glauber salt (sulphate of soda) may be used instead of part of the carbonate; with this the proportion may be 5 lb. bleaching powder, 10 lb. sulphate of soda, 4 lb. sal-soda, and 4 pails of water, well mixed, Sulphate of lime deposits from this liquid.

- (4) J. W. S. asks: Can you oblige me by answering through your column of Notes and Queries the following questions? 1. I should like a good receipt for taking out blots and ink stains from writing paper. I have tried a mixture of acetic acid with solution of chloride of lime, but after a week or two it is of no account, owing, I suppose, to the loss of the chlorine gas which, I suppose, gives it its value when freshly prepared. A. We know of no good preparation for this purpose that can be kept for any length of time. The preparation mentioned is about as good as any. Have youtried dilute aqueous solution of peroxide of hydrogen? 2. Can you give me any good method of toughening the edges of pasteboard, say for about half an inch from the edge, so that it will not be easily cut by a small cord when drawn tightly over it? Can it be treated the same as tissue paper with sulphuric acid, or would there be difficulty in washing the acid from the pasteboard? A. Sulphuric acid cannot be employed advantageously. Try listing the boards in a hot sirupy solution of zinc chloride and then in sal-soda solution. 3. Can you give me the name of any substance which I can mix with white sand so as to keep white marble steps up to the 'Quaker City' standard of whiteness with a little less muscular exertion than has to be bestowed upon them in the ordinary way of cleaning? A. A stiff wire brush greatly facilitates the cleaning. Oxalic acid (dilute aqueous solution) is frequently used in connection with sand, but it gradually rots and wears away the stone.
- (5) P. W. asks: Will you please inform me the process or how to mix for marblizing either wood or iron? I think I am pretty near right. I have mixed my colors in boiled linseed oil, but a great quantity of the color settles or goes to the bottom of the water. See Marbling on Paper, etc., in Supplement, No. 119.
- (6) H. M. R. asks: Please give a formula formaking a cement which will adhere to glass and stand water heated to 140° Fah. I have a number of bath tubs hined with plates of thick glass, and find it difficult to get a cement which will not soften or crack by the hot water. A. Try marine glue. See Cements, page 2510, SUPPLEMENT, No. 158.
- (7) .. G. B. asks: Is there any process whereby newly made bread, cake, etc., can be hermetically sealed up so as to keep for an indefinite length of time? A. Bread or cake could not be sealed as proposed so as to remain sweet or unchanged for any length
- (8) J. A. P. writes: 1. I wish to experiment for a special purpose with static electricity. Can I produce this electricity by friction on hard rubber with chamois leather or wool pads? If so, will it be necessary to use amalgam on the cushions? A. In cold weather you can use a Holtz electrical machine to great advantage in producing static electricity. In damp weather use an induction coil. You can generate a small quantity by using friction of a wool or silk pad on rub ber disk. Sulphide of tin, in powder, should be put on the pad. 2. Which is the best form for the rubber, disk or cylinder? A. Adisk. 3. Can the electricity be collected or taken off by points same as in plate glass machines? A. Yes. 4. What would be the best size for disk or cylinder? A. It depends altogether on the quantity of electricity required. 5. Is there any better method of producing static electricity than the above ? A. See answer to first query.
- (9) O. H. B. asks: Can you inform me how to produce a good finish (gloss and stiffness) on collars. cuffs, and shirt bosoms? I have tried gum arabic, gelatine, and whiteglue, but with no satisfaction. A. Put the fabric through a pretty stiff clear boiled starch, dry and dampen with the following: Fine raw starch, 1 oz.; gum arabic, 14 oz.; water, 1 pint; heat the water to dislet it cool stir in the starch and add the lve the gum white of one egg. Beat well together before using, Apply lightly with a sponge, and use a polishing iron to properly develop the gloss.
- (10) W. J. N. asks: How can I avoid the smoking and fuming of the acid in dipping small brass articles preparatory to plating them? The shape of the articles is such as not to allow the acid to run off from themreadily. The dipping must render the brass not only clean but bright and shiny. I have used for the purpose a mixture of equal parts of nitric and sulphuric acids with a little muriatic acid added. Will any other acid or mixture of acids do the same work without producing the fumes and smoke? A. The production of fumes by the acids cannot be obviated. The dipping is usually performed under closehoods connected with a chimney having a good draught. A strong aqueous solution of potassium cyanide can in some cases be advantageously substituted for the acid dip,
- (11) A. P. asks: Is there any process by which a tent, made of light drilling, can be rendered perfectly waterproof, and, if possible, fireproof? A. See Waterproofing, page 74, vol. xliv. Sulphate of ammonia (crude) added to the rinse water will render the goods non-inflammable.

- (12) E. J. O. writes. The streams here contain quite pretty pearl shells. How can I remove the dark or outside portion without injuring the pearl? A. It is generally removed by grinding and polishing. An ordinary grindstone will remove it. Powdered pumice stone will smooth the shells, and they can be polished with rotten stone.
- (13) W. R. says: Three of us (steam fitters) have had a dispute, and could not agree as to who was right: so we decided to ask you for advice. The question is, what is the proper way to bend ordinary pipe? I say the seam should be on the inside of the bend, says the seam should be on the outside. B says the seam should be at the side of the bend. A. B is right. The pipe will be less likely to split in bending by his
- (14) F. H. S. asks: Can you inform me of a preparation of acid that will brighten tarnished brass by simply dipping the brass into the acid liquid and then rinsing it in water? A. A bath composed of nitric acid mixed with an equal volume of water is used for this purpose. The brass must not remain more than a few moments in the dip, and should be well rinsed in running water immediately after removing from the acid
- (15) O. H. T. writes: I have an induction coil the primary coil of which is composed of three layers (the spool is 6 inches long) of insulated copper wire, No. 14; the secondary coil is made of No. 30 insulated copper wire; there are a little more than two pounds of the latter. What have I gained or lost by the extra layer in the primary coil? A. You have lost some of the effect of the magnetism of the core on the finer wire of your coil; but on the other hand you have gained something by having a longer primary wire. Four layers of No. 18 would be appropriate for a coil of the size given. 2 Have I used too much wire in my secondary coil? A. No; but the same length of No. 36 wirewould be more effective, since the outer layer would be nearer the primary and its core. 3. How much tin foil must I use to get the best effect? A. About ten square feet. 4. What is a Grenet battery cell, and how charged? A. See Supplements, No. 157, 158, 159, for information on batteries. 5. Why is platinum used where the current is broken by the vibrator? A. Recause it is least affected by the discharge of the extra
- (16) O. H. M. writes: 1. I have a small engine that I run a part of the time during the day, and as I have some surplus power, would it be practical for me to run a small dynamo electric machine during the day, and charge a secondary Plante battery, so that I could use from one to three of the Edison or some similar light during the evening? My room or store is about 50 feet by 20 feet. A. It would depend upon the size of engine and dynamo, also upon the size of the secondary battery. With these things properly proportioned to each other, and to the number of lamps to be used, it is possible to accomplish what you propose. 2. Is there any better or improved form for the secondary battery than that illustrated on page 406, vol. xliv., No. 26? The battery referred to answers very well, but the canton flannel is soon destroyed by the acid. Felt and woolen flannel has been used with good results, but even this is destroyed after a time. As to convenience and capacity the battery referred to is probably superior to the Plante, 3. The probable cost of a battery sufficient for the above if practical? A. This depends upon whether you make it yourself, and also upon the cost of materials in your locality. We do not know of a battery of this kind in market.
- (17) G. R. B. asks: Can you inform me if the engine illustrated in Supplement No. 279 would be double the power by using two cylinders and placing balance wheel in center of shaft? A. Yes. 2. Would it be powerful enough to run a small boat, say about eighteen feet long? A. Hardly. Its size should be oubled. 3. Would a coil of pipe be better than boiler, described in No. 182 SUPPLEMENT. A. The flask boiler would be the best for an engine of that size. 4. Are there any small editions of United States Patent Laws, in condensed form, I can get for information on the subject? A. The Scientific American Reference Book contains the information you want.
- (18) J. S. G. says 1 have been a long time trying to get something toput in a glass case where cutlery is kept to keep a from tusting, but so far have not succeeded very well. Can you inform me what is the best thing for such a purpose? A. Put in the case a small dish of powdered quicklime, or good calcium chloride, in small lumps, and keep the case closed tightly as much as possible.
- (19) F. E. K. asks: What materials can I use to make a lining to a fire box in a stove, to be applied in a plastic state to take the place of the ordinary fire brick and to become hard on standing? A. Mix intimately good fire ciay with one-fourth its weight of clear fine quartz sand and water enough to make a thick paste. It should be allowed to dry slowly (and thoroughly) before heating. Heat slowly at first.
- (20) T. 11. J. asks: Will you please give or refer to information as to ozone, viz.: Will ozone kill the germs or sporules of mould and ferment? A. Yes, if present in sufficient quantity. 2. Can it be used successfully in preventing decomposition of animal or vegetable substances? If ozone were mixed with fluid extracts or decoctions, would they keep good? A. No. Ozone can not be used fully employed as an antiseptic, though it is a very good disinfectant.
- (21) W. J. W. asks: Is potato flour manufactured in America, and to what extent and where? What is its worth in English markets? A. Potato flour (potato starch) is largely manufactured in this country. See "A Technical Treatise on Starch." Address the booksellers who advertise in this paper.
- (22) S. H. C. writes: Please let me know what chemicals are used on paper that a current of electricity will stain or mark on? A. Saturate the paper with a strong aqueous solution of ferrocvanide of potassium or of iodide of potassium with a little starch.
- (23) W. J. T. asks: Which will stand the fire best: the hard or soft cast iron? A. The latter.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

December 3, 1881.]

W. L.—It is partly altered mica schist—of no commercial value,—T. F. W.—A green stone containing much magnetic snlphide of iron-pyrrhotine- probably carrying a little nickel .- M. M.-It is niter-potassium nitrate -G K .- It is crystallized sulphide of iron, pyrite. -L. J.-Quartzite With argentiferous galena-silver

#### COMMUNICATIONS RECEIVED.

On a Shock of Earthquake. By. E. W. B. On Zinc and Copper Ores in Maine. By F. L. B.

#### NEW BOOKS AND PUBLICATIONS.

N. W. AYER & SON'S AMERICAN NEWS PAPER ANNUAL. 1881.

Contains a carefully prepared list of all newspapers and periodicals in the United States and Canada, arranged by States in geographical sections and by towns in alphabetical order; the name of the paper, the issue, general characteristics, year of establishment, size, circulation, and advertising rates. Its reports of the population of the country are very full and complete, including that of States, counties, and county seats. It also gives the political majorities and the greenback vote of States and counties at the Presidential election of 1880. A tabulated statement of newspapers is given on page 14. A description of every county in the United States, as well as of each State and Territory as a whole, and of the Canadian Provinces, giving valuable information concerning their mineral deposits.chief agricultural products, principal manufactures, nature of the surface and soil, area, location, etc. It is a volume from which information of the most varied use and importance can be obtained. Newspapers can only flourish in the midst of free, industrions and intelligent peoples. Here are specified and described more than nine thousand different American periodicals. It is a catalogue of national greatness and power. Published by N. W. Ayer & Son, Philadelphia, Pa.

[OFFICIAL.]

## INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending November 1, 1881,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 37 Park Row, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Adjustable table and book support, C. D. Stitt... 248 894

Adjustable table and book support, C. D. Stitt	
Animal shears, A. Ridgway	248,952
Apparel, fastening for wearing, F. A. Smith, Jr	248,893
A tomizer and syringe, combined, S. W. Beall	248,983
Auger, P. A. Gladwin	
Banjo, L. Anderson	248,979
Bar. See Pinch bar. Pitman bar. Saddle bar.	
Bath. See Shower bath.	i
Bed bottom. C. T. Segar	
Bed bottom, spring, E. S. Field (r)9,919,	9,920
Bed lounge, O. Stechhan	248,959
Bed plate and spiral sprirg, C. W. Pratt	
Belt, galvanic, L. D. McIntosh	249,070
Bit. See Bridle bit.	i
Blower, fan. J. W. Anderson	248,978
Boiler furnace. J. Elliott	
Boiler furnace, steam. J. Johnson	
Bolt, J. C. Clime	248,847
Boneblack, art of and apparatus for making and	
revivifying, R. A. Chesebrough	
Boot and shoe sole and heel, J. Pienovi	249,086
Boot and shoe soje channels, mechanism for clos-	
ing, W. B. Arnold	248.836
Boot brushing machine, A. S. Clark	249,006
Bottle filler, P. Saal Bottle stopper, G. Havell.	248,886
Bottle stopper, G. Havell	249,043
Bottle stopper, J. G. Hirsch	248,861
Box. See Feed box.	
Brake. See Car brake.	
Bricks, shed for drying, J. Evans	249,144
Bridge, H. C. Groves	
Bridle bit, J. Stanley Button, W. Hornich	249,113
Putton W Counish	
Button, W. Hornich	249,048
Button or stud, C. E. Westcott	248.967
Button or stud, C. E. Westcott	248.967
Button or stud, C. E. Westcott	248,967 248,872
Button or stud, C. E. Westcott	248,967 248,872
Button or stud, C. E. Westcott	248.967 248,872 248.955
Button or stud, C. E. Westcott	248.967 248,872 248.955
Button or stud, C. E. Westcott	248,967 248,872 248,955 249,039 248,883
Button or stud, C. E. Westcott.  Calendar, R. McCurdy.  Can. See Oil can.  Canopy standard, J. H. Sanderson.  Car brake, W. B. Guernsey.  Car brake pawl, T. C. Ralston.  Car coupling, J. Cochran, Jr.  Car coupling H. Gladwin.	248,957 248,955 249,039 248,883 249,007 248,853
Button or stud, C. E. Westcott.  Calendar, R. McCurdy.  Can. See Oil can.  Canopy standard, J. H. Sanderson.  Car brake, W. B. Guernsey.  Car brake pawl, T. C. Ralston.  Car coupling, J. Cochran, Jr.  Car coupling H. Gladwin.	248,957 248,955 249,039 248,883 249,007 248,853
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Raiston Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley.	248,967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston Car coupling, J. Cochran, Jr. Car coupling, H. Gladwin Car coupling, J. W. Hancock Car coupling, J. Kelley. Car coupling, T. R. Morgan et al.	248,967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059 249,075
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston Car coupling, J. Cochran, Jr. Car coupling, H. Gladwin Car coupling, J. W. Hancock Car coupling, J. Kelley. Car coupling, T. R. Morgan et al.	248,967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059 249,075
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston Car coupling, J. Cochran, Jr. Car coupling, H. Gladwin Car coupling, J. W. Hancock Car coupling, J. Kelley. Car coupling, T. R. Morgan et al.	248,967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059 249,075
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Raiston Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley.	248,967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059 249,075 248,891 248,940
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston Car coupling, J. Cochran, Jr. Car coupling, H. Gladwin Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, T. R. Morgan et al. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch.	248.967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059 249,075 248,940   248,940
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston Car coupling, J. Cochran, Jr. Car coupling, H. Gladwin Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, T. R. Morgan et al. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch.	248.967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,059 249,075 248,940   248,940
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston. Car coupling, J. Cochran, Jr Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley. Car coupling, T. R. Morgan et al. Car door, freight. C. A. Smith. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr	248.967 248.872 248.955 249.039 248.883 249.007 248.853 249.040 248.981 248.940 248.940 248.940 248.940
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Raiston. Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley. Car coupling, J. Kelley. Car door, freight. C. A. Smith. Car daught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge.	248.967 248.872 248.955 249.039 248.883 249.007 248.853 249.040 248.981 248.940 248.940 248.940 248.940
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston. Car coupling, J. Cochran, Jr Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley. Car coupling, T. R. Morgan et al. Car door, freight. C. A. Smith. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr	248,967 248,872 248,955 249,039 248,883 249,007 248,853 249,040 249,075 248,940 248,940 248,940 248,945 248,945 248,905 248,915
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston. Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, T. R. Morgan et al. Car door, freight. C. A. Smith. Car day fraight and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr. Car, sleeping, J. Christiansen. Car, sleeping, J. Christiansen. Car, sleeping, G. Clarke. Car wheel, J. K. Sax	248.967 248.872 248.955 249.039 248.883 249.007 248.953 249.040 249.059 248.941 248.940 248.940 248.940 248.940 248.941 248.948 248.905 249.072 248.948 248.94
Button or stud, C. E. Westcott. Calendar, R. McCurdy	248.967 248.872 248.955 249.039 248.883 249.007 248.953 249.065 249.075 248.991 248.991 248.991 248.991 248.905 249.072 248.915 248.915 248.846 249.102 249.102
Button or stud, C. E. Westcott. Calendar, R. McCurdy Can. See Oil can. Canopy standard, J. H. Sanderson Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston Car coupling, J. Cochran, Jr Car coupling, H. Gladwin Car coupling, J. W. Hancock. Car coupling, J. Kelley Car coupling, T. R. Morgan et al Car door, freight. C. A. Smith Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch Car seat, G. Merz Jr Car, sleeping, J. Christiansen Car, sleeping, G. Clarke Car wheel, J. K. Sax Car wheel, J. K. Sax Car wheel fender, railway J. G. Schiller Carbureting apparatus, air, H. Cottrell	248.967 248.872 248.955 249.039 248.883 249.007 248.853 249.005 249.059 248.940 249.059 248.940 248.940 248.955 248.940 248.905 248.915 248.948 248.915 248.948 249.072 248.948 249.072 248.915 248.948 249.072 248.916 249.072 248.916 249.072 248.916 249.072 248.916 249.072 248.916 249.072
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Raiston. Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley. Car coupling, J. Kelley. Car coupling, J. Relley. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr. Car, sleeping, J. Christiansen. Car, sleeping, G. Clarke. Car wheel, J. K. Sax Car wheel fender, railway J. G. Schiller. Carbureting apparatus, air, H. Cottrell. Carriage top prop. L. Sawyer	248.967 248.872 248.955 249.039 248.883 249.007 248.853 249.005 249.059 248.940 249.059 248.940 248.940 248.955 248.940 248.905 248.915 248.948 248.915 248.948 249.072 248.948 249.072 248.915 248.948 249.072 248.916 249.072 248.916 249.072 248.916 249.072 248.916 249.072 248.916 249.072
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Ralston. Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Relley. Car coupling, T. R. Morgan et al. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr. Car, sleeping, J. Christiansen. Car, sleeping, G. Clarke. Car wheel, J. K. Sax Car wheel fender, railway, J. G. Schiller. Carbureting apparatus, ir, H. Cottrell. Carriage top prop, L. Sawyer Carrier. See Egg and fruit carrier.	248,967 248,872 248,872 248,883 249,007 248,853 249,040 249,075 248,940 248,940 248,940 248,940 248,940 248,940 248,940 248,940 248,940 249,072 248,915 249,072 249,073 249,07
Button or stud, C. E. Westcott. Calendar, R. McCurdy	248,967 248,872 248,872 248,883 249,007 248,853 249,040 249,075 248,940 248,940 248,940 248,940 248,940 248,940 248,940 248,940 248,940 249,072 248,915 249,072 249,073 249,07
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Raiston. Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley. Car coupling, J. Kelley. Car coupling, T. R. Morgan et al Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr. Car, sleeping, J. Christiansen. Car, sleeping, J. Christiansen. Car, sleeping, G. Clarke. Car wheel, J. K. Sax Car wheel fender, railway J. G. Schiller. Carbureting apparatus, air, H. Cottrell. Carriage top prop, L. Sawyer Carrier. See Egg and fruit carrier. Cattridge implement. S. Baker. Case. See Show case.	248,967 248,872 248,872 248,883 249,007 248,853 249,040 249,040 248,940 248,940 248,940 248,940 248,940 248,915 248,940 248,915 248,940 248,916 248,916 248,916 248,916 248,917 248,887
Button or stud, C. E. Westcott. Calendar, R. McCurdy	248,967 248,872 248,872 248,883 249,007 248,853 249,040 249,040 248,940 248,940 248,940 248,940 248,940 248,915 248,940 248,915 248,940 248,916 248,916 248,916 248,916 248,917 248,887
Button or stud, C. E. Westcott. Calendar, R. McCurdy	248,967 248,872 248,872 248,883 249,007 248,853 249,007 249,059 249,075 248,941 248,941 248,942 248,943 248,944 248,910 248,916 248,102 248,102 249,103 248,887 248,887
Button or stud, C. E. Westcott. Calendar, R. McCurdy. Can. See Oil can. Canopy standard, J. H. Sanderson. Car brake, W. B. Guernsey. Car brake pawl, T. C. Raiston. Car coupling, J. Cochran, Jr. Car coupling, J. W. Hancock. Car coupling, J. W. Hancock. Car coupling, J. Kelley. Car coupling, J. Kelley. Car coupling, J. Relley. Car door, freight. C. A. Smith. Car draught and buffing apparatus, F. W. Marston Car heating apparatus, freight, Eastman, Kimball & Murch. Oar roof, H. Aldridge. Car seat, G. Merz Jr Car, sleeping, J. Christiansen. Car, sleeping, J. Christiansen. Car wheel, J. K. Sax Car wheel, J. K. Sax Car wheel, J. K. Sax Car wheel fender, railway J. G. Schiller. Carbureting apparatus, air, H. Cottrell. Carriage top prop, L. Sawyer Carrier. See Egg and fruit carrier. Cartridge implement, S. Baker. Case. See Show case. Cask stopper. C. A. Raggio. Chair. See Rocking chair. Chair or stool, I. R. Gilbert.	248,967 248,872 248,873 249,039 248,883 249,007 248,953 249,040 249,075 248,940 248,940 248,940 248,940 248,940 248,915 248,940 248,915 248,948 248,94
Button or stud, C. E. Westcott. Calendar, R. McCurdy	248,967 248,872 248,873 249,039 248,883 249,007 248,953 249,040 249,075 248,940 248,940 248,940 248,940 248,940 248,915 248,940 248,915 248,948 248,94

Scienti:	Eic	G G
Chopper. See Cotton chopper.		Lamp
Cigar coloring machine, N. Du Brul Cigar cutter, C. Du Brul		Lamp Lamp
Clamp. See Woodworker's clamp. Clasp. See Garment clasp.		Lamp Lamp
Clasp, I. V. Ford	249,082	Lante Lath,
Clip. See Yoke clip. Clock works. support for, J. J. Vossler	249,125	Linim Lock.
Clocks. device for adjusting the beat of pendu- lum, J. G. & J. R. Watts		Locor
Clocks, striking mechanism of repeating, C. S. Lewis.		Loung
Clover hulling machine, H. Löhnert	248,937	Magn
Cock, alcohol, C. C. Mulford Coffee and spice mill, M. W. Shafer	249,077	
Coffee making apparatus, W. G. Petry Coffee mill. T. Weaver et al	249,084	Match Meat
Coffeeroaster, G. A. Beidler	248,986	
Coloring matter, production of, O. N. Witt	248.856	Meter Middl
Condensing apparatus, B. T. Babbitt		Middl Po
Corn sheller, C. C. Burroughs (r)		Milk Milk
Cotton chopper and scraper, combined, J. C. Mc- Caskill		Mill. St
Coupling. See Car coupling. Crayon, C. A. Catlin	248,845	Minin Mosqu
Cultivator, G. W. Brown	248,992	Mowi Music
Cultivator, C. M. Risley	248,954	Jr Music
Cushion. See Sewing cushion. Window cushion. Cutter. See Cigar cutter. Stalk cutter.		Net, f Nut a
Cutter head for rounding fellies, J. C. Tunnicliff Cutting circular objects, machine for, M. Cilik		Nut lo
Dams, wicket and caisson for movable, W. H. Dechant		Oil cu
Dental engine, P. Shaw		Paddl Padlo
Derrick, hydraulic, O. M. Loveridge		Pamp Pinch
Disintegrator and strainer. C. F. Heais	248.930 249,050	Pipes A.
Draughting instrument, C. R. Howard Drier. See Grain drier.		Pipes Pitma
Drill. See Mining drill. Rock drill.  Drills, feeding diamond or other rotary, Ball &		Plani Plant
Case Drilling machine, H. H. Chapman		Plow,
Drinking cup or glass, G. H. Lomax		Plow,
Ears and inserting earrings, apparatus for piercing, J. J. Greenough		Press Printi
Edge iron and handle, H. P. Roberts Eggand fruit carri^r, L. H. Page	249,096	Printi
Egg beater, E. D. Hawkins Electric machine, dynamo, J. A. I. Craig	249,017	
Electric signaling apparatus, T. D. Lockwood Electric switch and clock system, combined, C. E.		Pump Pump
Buell Elevator. See Hay elevator. Hydraulic elevator.		Purifi Quoit,
Elevator, Behrns & Unruh Elevator, J. Falk	248,985 248,851	Railw W
Elevator stop, D. Moulton	249,076	Railw Railw
Farm gate, A. S. W. Timmons Faucet, G. W. Hilliard	249,046	Reapi
Faucet, C. Whittaker	249,134	
Feed box for animals, automatic, Blajsdell & Wright	248,909	Roast Roast
Feed water heater for locomotives, M. Zeck Fence, R. Donaldson	249,027	Rock
Fence barb, W. W. Butler	248,950	Rock Rocki
Fence, iron, S. W. Martin		Roller Routi Rubbe
File grinding machine, C. D. Miller	248,874	C.
Finger nail trimmer, Heim & Matz (r)	9,921	Rule, Saddl Safety
kins	248,980	Sash i Sausa
Forceps, obstetric, A. Miller Form, dummy, J. A. Gillotte	249.073	Saw, S
Frame. See Mosquito bar frame. h'ruit jar, G. F. Littlejohn.		Saw n
Furnace. See Boiler furnace. Roasting furnace. Game table, J. Lechner		Scaffo Scale,
Garment clasp, J. P. Lindsay	248,936	Scale
Gas by admixture of hydrocathon vapors, apparatus for enriching. J. Livesey		Scrap
Gas extinguisher. D. Davis		Screw
Glove. etc., spring, Fidoe & Radford		Seat. Separ
& Alberger	248.972	Sewin
Governor. steam engine, Z. C. Talbot	248,961	Sewin
Grain drier. steam, H. Coker	249,009	Sewin
Grinding mill, R. Schneider	249,106	Shave Shear
Guard. See Key hole guard. Gum substitute, Wilson & O'Reilly		Shear die
Handle. See Coffin handle.  Harness, line guide for, P. Schneider		Sheet
Harrow, A. C. Evans	248,850	Shirt, Show
Harvesting machine, W. N. Whiteley		Show Show
Hay elevator and carrier, L. E. Miles	248,873	Shutt Sieve
Heater. See Feed water heater. Heating buildings, apparatus for, J. F. Pease	248,948	B. Skylig
Heel burnishing machine, M. A. Tyler Hides, machine for working, fleshing, and unhair-	248,965	Sled, Soda
ing, C. H. Taylor	249,114	
holder. Oil cup holder. Rein holder. Hook. See Safety hook.		bii Solde
Hoop. See Toy chime hoop. Horse detacher, Holden & Gorham	248,931	Sower Spind
Horses, device for stopping, G. Villar	248.906 249,123	
Hub and lubricator, wheel, B. H. Kemble Hydraulic elevator, C. W. Baldwin	248,908	Stalk Stam
Hydraulic and steam motors, valve apparatus for,	1	Stam

•	Chopper. See Cotton chopper. Cigar coloring machine, N. Du Brul 249,029		249,016	Stea
	Cigar cutter, C. Du Brul	Lamp, electric, L. Daft  Lamp, electric, A. G. Holcombe  Lamp, electric, C. E. Long	249,047	Stor Stor
. !	Clasp. See Garment clasp. Clasp, I. V. Ford. 249,032 Cleaner. See Grain cleaner.	Lantern, T. B. Osborne  Lath, metallic, P. Caduc	248.878	Stov
	Clip. See Yoke clip. Clock works. support for, J. J. Vossler 249,125			Stov Stov
	Clocks. device for adjusting the beat of pendulum, J. G. & J. R. Watts	Lounge. S. L. Crosgrave  Lounge, J. Lowth	248,919	Stra Stra Supp
	Lewis	Lubricator, J. Graham	248,927	Susp Susp
	Clutch device, J. B. Secor         248,889           Cock, alcohol, C. C. Mulford         249,077           Coffeend mice will M. W. Shofm         249,077	Mandrel, expanding, 11. Cottrell	249.143	Susp Swit Tabl
	Coffee and spice mill, M. W. Shafer         249.110           Coffee making apparatus, W. G. Petry         249,084           Coffee mill. T. Weaver et al.         249,127	Match safe, W. Trotter, Jr	248,898	Tabl Tanl
	Coffeeroaster, G. A. Beidler.         248,986           Coffin handle, J. Johnson.         248,865	low, L. S. White	249,132	Tele
	Coloring matter, production of, O. N. Witt	Meter. See Water meter.  Middlings purifier, C. G. Rollins  Middlings purifiers, etc., feed governor for, S.	248,885	Tele Tele
	Cooler. See Milk cooler. Corn sheller, C. C. Burroughs (r)	Potts	249,041	
	Corset, T.F. Hamilton (r)	Milk cooler, J. Wilhelm, Jr	248,903	Thra f
	Coupling. See Car coupling. Crayon, C. A. Catlin	Mining drill, rotary, G. D. Whitcomb  Mosquito bar frame, W. T. Bostick		Toy,
:	Cultivator, G. W. Brown       .248,991, 248,992         Cultivator, Brown & Holyoke       .248,993         Cultivator, Brown & Holyoke       .248,993	Mowing machine, E. Terry		Toy H
1	Cultivator, C. M. Risley	Jr  Musical instrument. piston valve, C. G. Conn  Net, fly, J. F. Smiths.	249.012	Trap Trin Trun
	Cutter. See Cigar cutter. Stalk cutter. Cutter head for rounding fellies, J. C. Tunnicliff 249,121	Nut and bolt lock, Darby & Slater	248,921 249,034	Tube
	Cutting circular objects, machine for, M. Cilik 248,916  Dams, wicket and caisson for movable, W. H.  Dechant	Nut lock, J. E. Wootten	248,956	Type Valv Valv
	Dental engine, P. Shaw 249,111 Dental tool holder, E. T. Starr. 248,958		248.945	Valv Valv
	Derrick, hydraulic, O. M. Loveridge	Pinch bar, G. E. Marvine		8
	Disintegrator and strainer. C. F. Heais	A. N. Winner		Vehi n Velo
i	Drier. See Grain drier.  Drill. See Mining drill. Rock drill.	Pitman bar, G. P. Conant	249,011	Velo:
ا	Drills, feeding diamond or other rotary, Ball & Case	Planter, seed, Hall & Jacobsen  Plow, I. V. Newsom	249.079	Wag Wag
İ	Drilling machine, H. H. Chapman	Plow, planting. T. Pates		Was Was
	Ears and inserting earrings, apparatus for piercing, J. J. Greenough	Pressure regulator, A. Pope Printing and embossing machine, J. Comly		Wat F
i	Edge iron and handle, H. P. Roberts	Scott		Wat Wat Wat
!	Electric machine, dynamo, J. A. I. Craig. 249,017 Electric signaling apparatus, T. D. Lockwood. 249,147	Pump, air, E. T. Pettit	249,035	Wat Weig
٠	Electric switch and clock system, combined, C. E. Buell	Pump, force. H. H. Hunter	249,054	Well Well
	Elevator. See Hay elevator. Hydraulic elevator.  Elevator, Behrns & Unruh. 248,985  Elevator, J. Falk 248,851	Quoit, parlor, S. P. Wetherill	ļ	Whe Whe
	Elevator stop, D. Moulton	Railway safety gate, C. S. & W. H. Riggin Railway switch, J. Brahn	248,953 248,990	Whe
	Farm gate, A. S. W. Timmons.       248,964         Faucet, G. W. Hilliard       249,046         Faucet, C. Whittaker       248,970, 248,970	Railway tracks, system of, A. M. Billings  Reaping machine, J. Harris		Wind Wind Wire
	Faucet, measuring F. T. Williams	Regulator. See Pressure regulator.  Rein holder, F. J. Lowe  Roaster. See Coffee roaster.	248,939	Wire
	Wright         248,909           Feed water heater for locomotives, M. Zeck         249,137		248,989	Wre
	Fence, R. Donaldson       249,027         Fence barb, W. W. Butler       248,999         Fence, hedge, S. K. Rahn       248,950		248,895	YOK
	Fence, iron, S. W. Martin249,066, 249,067 Fender. See Car wheel fender.	Roller. See Pamphlet cover roller. Routing machine, R. T. White		Bell,
	Fertilizer distributer, Rea & Robinson       249,093         File grinding machine, C. D. Miller       248,874         Filter. J. Toland       248,897	Rubber compounds, anti-slipping material from, C. A. Maxfield Rule, slide, E. Thacher		Carp Carp
1	Finger nail trimmer, Heim & Matz (r)	Saddle bar, Dancer & Chappell	248,920	Fork Knol
į	kins	Sash fastener, W. McArthur Sausage filler, W. G. Bell.	248,838	Scre
, , ,	Forceps, obstetric, A. Miller	Saw, S. Toles Saw arbor, Thomas & Cordesman. Jr Saw mill log carriages, brake for, F. Tuxworth (r).	248,963	Sewi Sign Tope
)	Fruit jar, G. F. Littlejohn	Saw set, J. Burkhart Scaffold trestle, Reyburn & Sweet and	248,997 249.095	Туре
	Game table, J. Lechner	Scale, cart, Murphy & Lynett Scale platforms, steadying device for, W. W. Hopkins		Type Wall
	Gas by admixture of hydrocathon vapors, apparatus for enriching. J. Livesey 249.063	Scraper, R. O. Bingham	248,988	
3	Gas extinguisher. D. Davis	Screw driver, H. A. Sawtell Screw moulding apparatus, H. Binns Seat. See Car seat.		Baki Beer
i	Glucose or grape sugar, manufacturing. Williams & Alberger	Separator. See Grain separator. Starch separator. Sewing cushion and table and cushion combined,		Coffe
3	Governor, steam engine. C. H. Powers	Sewing heavy materials, method of and machin-		Flou
	Grain cleaner. J. P. Bond       249,141         Grain drier. steam, H. Coker       249,009         Grain separator, W. H. Janney       249055	ery for, E. H. Smith		Hair Hors Hors
3	Grinding mill, R. Schneider	Shave, H. P. Roberts		Medi
3	Guard. See Key hole guard.  Gum substitute, Wilson & O'Reilly	Shears for cutting flat and round metal, C. Burdick  Sheet metal vessels, die for flanging, J. D. Hass.		Medi Medi Oil r
	Harness, line guide for, P. Schneider. 249.105 Harrow, A. C. Evans. 248.850			On Detr
i I	liarrow tooth holder, Baker & Sweetland	Show case. portable, W. Bourke	249.039	Prep si
. 1	Hat stretcher, J. Tobias       249.118         Hay elevator and carrier, L. E. Miles       248,873         Heat generating process and apparatus, G. Reis       249.094	Shutter fastener, T. S. Pike	249,087	Sewi Soap
)	Heater. See Feed water heater. Heating buildings, apparatus for, J. F. Pease 248,948	B. Melish	248,870 248,858	Soap Soda
)   	Heel burnishing machine, M. A. Tyler	Soda water and other beverages, apparatus for	•	Toile Toile Whis
	Holder. See Dental tool holder. Harrow tooth holder. Oil cup holder. Rein holder.	Soda water apparatus and tumbler washer, com- bined, W. P. Clark		E
5	Hook. See Safety hook. Hoop. See Toy chime hoop. Horse detacher Holden & Corbon.	Soldering iron, J. & T. H. Hughes Sower, seed, Kenny & Niemann	249,051	:
;	Horse detacher, Holden & Gorham	Spindle. See Spinning machine spindle. Spinning machine spindle, C. II. Chapman		Asbe Belt Boat
	Hub and lubricator, wheel, B. H. Kemble	Stalk cutter, J. N. Pervier	249.083 249.010	Bott Cork
!	Hydraulic and steam motors, valve apparatus for, C. Roux	Stamp mill, J. M. McFarland	249,023	Fires Grin Jour
!	Insect destroyer. J. Bowers	Starch, or starch sugar and sirup, and apparatus therefore, treating $\sigma rain$ for the production		Pill 1 Spins
	Jar. See Fruit iar.	of Williams & Alberger	248 973	Onni.

Steam trap, E. F. Osborne
Stool, M. H. Wilson
Stopper. See Bottle stopper. Cask stopper.
Store service appliance, J. C. White 248,968
Stove.cooking. H. C. Hunt
Stove grate. C. O. Westland
Stove, oil. H. S. Goffe
Stovepipe thimble T. Schafer
Strainer, lemonade, W. Bower
Strainers, cap for covering sink, J. Carpenter 249,001
Supporter. See Collar supporter.
Suspenders, J. A. Adamson 249.976
Suspenders, T. O. Potter 249,089
Suspenders, J. J. Upham 248,899
Switch. See Railway switch.
Table. See Adjustable table. Game table.
Tablet, blotter, C. E. Meade 249,071
Tank. See Water tank.
Telegraph conductors, underground conduit for,
S. E. Codding 249,008
Telegraph, quadruplex, H. C. Nicbolson' 249.080
Telephone, E. Berliner 248,839
Telephone exchange, G. W. Coy 249.015
Telephone receiver, R. M. Lockwood 249,064
Telescopes, solar screen attachment to, Davis &
Berger 249,022
Thrashing machines, mechanism for operating
fan doors of, Z. Macomber 249.065
Toy, C. S. Hunt 249,052
Foy chime hoop, J. L. M. Du Four 249,030
Toy wind wheels, device for imparting motion to,
H. F. W. Liebmann 249,146
Trap. See Steam trap. Water trap.
Trimmer. See Finger nail trimmer.
Trunk. F. Protzen
Tubes for gas and other purposes, composition
for coating flexible. W. Bourgignon 248,841
Type writer, A. G. Shannon 248,890
Valve. See Water closet valve.
Valve, balanced slide, E. S. Hildebrandt 249,045
Valve, steam actuated. W. C. Heister 248,859
Valve. steam actuated piston, S. G. Bryer 248,994
Vegetable and meat slicing machine, Anderson
& Groff 249,139
Vehicles, opening and shutting the doors of run-
Vehicles, opening and shutting the doors of running, J. D. O'Donnell
ning, J. D O'Donnell
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998
ning, J. D. O'Donnell       248876         Velocipede, E. Barstow       248,998         V∈locipede, J. Uster       249,122
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998         Velocipede, J. Uster       249,122         Violin, P. Topham       443,120
ning, J. D O'Donnell       248.876         Velocipede, E. Barstow       248,998         Vclocipede, J. Uster       249,122         Violin, P. Topham       443,120         Wagon platform gear, M. W Stevens       248,966
ning, J. D. O'Donnell
ning, J. D O'Donnell       24887t6         Velocipede, E. Barstow       248,998         Velocipede, J. Uster       249,122         Violin, P. Topham       243,120         Wagon platform gear, M. W. Stevens       248,966         Wagon spring, A. C. Fish       248,926         Washstand and water closet, J. Christiansen       248,914
ning, J. D O'Donnell     248876       Velocipede, E. Barstow     248,998       Velocipede, J. Uster     249,922       Violin, P. Topham     443,120       Wagon platform gear, M. W. Stevens     248,966       Wagon spring, A. C. Fish     248,926       Washstand and water closet, J. Christiansen     243,914       Washing machine, R. S. Morse     248,944
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998         Vclocipede, J. Uster       249,122         Violin, P. Topham       443,120         Wagon platform gear, M. W. Stevens       248,966         Wagon spring, A. C. Fish       248,926         Washstand and water closet, J. Christiansen       248,914         Washing machine, R. S. Morse       249,944         Watch chains, charm for, E. A. Cummings       249,018
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998         Velocipede, J. Uster       249,122         Violin, P. Topham       243,120         Wagon platform gear, M. W. Stevens       248,966         Wagon spring, A. C. Fish       248,926         Washstand and water closet, J. Christiansen       248,914         Washing machine, R. S. Morse       248,944         Watch chains, charm for, E. A. Cummings       249,018         Water, apparatus for elevating and puriffying, R.
ning, J. D O'Donnell     248876       Velocipede, E. Barstow     248,998       Velocipede, J. Uster     249,922       Violin, P. Topham     43,120       Wagon platform gear, M. W. Stevens     248,966       Wagon spring, A. C. Fish     248,926       Washstand and water closet, J. Christiansen     248,944       Washing machine, R. S. Morse     248,944       Watch chains, charm for, E. A. Cummings     249,018       Water, apparatus for elevating and purifying, R.     P Zimmerman     249,138
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998         Velocipede, J. Uster       249,122         Violin, P. Topham       443,120         Wagon platform gear, M. W. Stevens       248,966         Wagon spring, A. C. Fish       248,926         Washstand and water closet, J. Christiansen       248,914         Washing machine, R. S. Morse       248,944         Watch chains, charm for, E. A. Cummings       249,018         Water, apparatus for elevating and purifying, R.       P Zimmerman       249,138         Water closet valve, automatic, M. Hogan       248,662
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998         Velocipede, J. Uster       249,122         Violin, P. Topham       243,120         Wagon platform gear, M. W. Stevens       248,960         Wagon spring, A. C. Fish       248,926         Washstand and water closet, J. Christiansen       248,914         Washing machine, R. S. Morse       248,944         Watch chains, charm for, E. A. Cummings       249,018         Water, apparatus for elevating and purifying, R.       P. Zimmerman       249,138         Water closet valve, automatic, M. Hogan       248,862         Water meter, piston, W. Wells       248,966
ning, J. D O'Donnell       248876         Velocipede, E. Barstow       248,998         Velocipede, J. Uster       249,922         Violin, P. Topham       43,120         Wagon platform gear, M. W. Stevens       248,966         Wagon spring, A. C. Fish       248,926         Washstand and water closet, J. Christiansen       248,944         Watch chains, charm for, E. A. Cummings       249,018         Water, apparatus for elevating and purifying, R.       249,138         Water closet valve, automatic, M. Hogan       248,962         Water meter, piston, W. Wells       248,966         Water tank, railway, J. J. Ray       248,563
ning, J. D O'Donnell

# TRADE MARKS.

L	
)	Baking powder, Newton Brothers & Co8,810 Beer, lager, F. Hollender
	Coffee, Java. Newton Brothers & Co
	Cotton piece goods, Amory Manufacturing Com-
П	pany
	Flour, W. H. Roberson 8,805
2	Hair restorer, E. J. Clarke
•	Horse nails, Putnam Nail Company8.802, 8,804
,	Horseshoe nails, Putnam Nail Company
,	Medicated paper for water closet use, Pond's Ex-
	tract Company 8,795
	Medicinal preparations, Fond's Extract Co8,797, 8,798
6	Medicine, corn, wart, and bunion, T. Egersdorff 8,815
2	Oil made from petroleum, illuminating, Standard
	Oil Company 8.799
2	Petroleum, refined, Charles Pratt & Co8,816 to 8,818
2	Preparation for the cure of burns. wounds, sprains,
9	skin diseases, cuts, and coughs, Austin & Mel-
5	ville
i	Sewing cotton and thread, J. Brook & Bros 8,812, 8,813
	Soap, C. Lipps 8,793
)	Soap, E. C. Niedt & Co
3	Soda water apparatus, J. W. Tufts
l	Toilet preparations, l'ond's Extract Company 8,796
	Toilet preparation, certain, Lanman & Kemp 8.809
3	Wbisky, Freiberg & Workum 8,792

### English Patents Issued to Americans.

From October 28 to November 1, 1881, inclusive. bestos, H. W. Johns. lt pulley, P. Medart. ats, apparatus for lowering, R. N. Earle. ttles, drawing liquid from P. Hathaway. ck cutting machine, I. S. Elkins et al. earm, Colts Patent Firearm Manuf. Company. indirg mill. W. N. Cosgrove et al. ournal bearing, D. A. Hopkins. Spinning frame ring, J. Y. Anthony et al. Spring mattress, E. Hinckley.

Wax paper, manufacture of, W. B. H. Dowse. 

 Jar. See Fruit jar.
 0f, Williams & Alberger.
 248,973

 Key hole guard, A. E. Voos.
 249,124
 Starch separator, T. A. Jebb
 249,056