Business and Lersonal.

The Charge for Insertion under this head is One Dollar

Assays of Ores, Analyses of Minerals, Waters, Commercial Articles, etc. Technical formulæ and processes. Laboratory 33 Park Row, N. Y. Fuller & Stillman.

Alcott's Turbine received the Centennial Medal.

Wanted.—Parties to Manufacture my Improved Pipe Coupling on Royalty. Illustrated in Sci. Am. Jan. 26. E. S. Chapell, Pembroke, Maine.

Silver Plater's Sets for Amateur, \$5. Batteries, Baths, Silver Solution, and Connections. Union Silver Plating Co., Princeton, Ill.

Machinery for Starch Manufacturers wanted. Address Keuffel & Esser, 127 Fulton St., New York.

Telephone Magnets. Electric Supply Co., Box 611, Providence, R. I.

Manufacturers of Self-binding Reapers, send price, etc., to J. B. Reichard, El Monte, Cal.

Wanted .- Tools for Sewing Machine Factory. T. Shanks, Baltimore, Md.

Wanted.-Partner with \$3,000 to \$5,000. Machine and Foundry business; good prospects. 115 Carroll St., South Brooklyn, N. Y.

All kinds of Machine Work, Iron and Brass Castings, at lowest rates. 150 Van Brunt St., South BrooklynIron Works, South Brooklyn, N. Y.

For Sale.—One English made Lathe, 28 in, swing, 16 ft. bed, compound rest; price \$150. The Bullard Machine Co., limited, 14 Dey St., N. Y.

For Solid Wrought Iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for

For book on Lubricants, R. J.Chard, 134 M.Lane, N.Y. For Sale.-4 H. P. Baxter Engine, second-hand; 5 H. P. Yacht Engine and Boiler; Box 630, Hartford, Conn.

Supplies for Telephone and other Electrical Experiments at manufacturers' prices. Jerome Redding & Co. 30 Hanover St., Boston, Mass. For Sale.-Machinery and Compositions of all kinds

of Matches. Apply to J. H., P. O. Box 942, N. Y. city. Canadian Patent For Sale.—Mey's Dryer for Grain, Malt, etc., has been in practical use for several years in Buffalo, N. Y. Address F. H. C. Mey, Buffalo, N. Y.

For a 15 in. Swing Lathe having 1% in. hole through Head Spindle, something new, address Star Tool Company, Providence, R. I.

2d Hand Iron Planer built by Smith of Salem. Plane 13 ft. x 30 in.; price \$300. A.C. Stebbins, Worcester, Mass. Cornice Brakes. J. M. Robinson & Co., Cincinnati, O. Noise-Quieting Nozzles for Locomotives, Steamboats,

etc. T. Shaw, 915 Ridge Ave., Philadelphia, Pa. John T. Noye & Son, Buffalo, N. Y., are Manufactur

ers of Burr Mill Stones and Flour Mill Machinery of all kinds, and dealers in Dufour & Co.'s Bolting Cloth. Send for large illustrated catalogue.

Solid Emery Vulcanite Wheels-The Solid Original Emery Wheel - other kinds imitations and inferior.

valuable for strength and durability. Circulars free, Pittsburgh Steel Casting Co., Pittsburgh, Pa.

Best Turbine Water Wheel, Alcott's, Mt. Holly, N. J. Shaw's Mercury Gauges, U. S. Standard of Pressure, 915 Ridge Ave., Philadelphia, Pa.

Vertical Scientific Grain Mills. A.W. Straub & Co., Phila. Corliss Engine Builders, with Wetherill's improvements, Engineers, Machinists, Iron Founders, and Boiler Makers. Robt. Wetherill & Co., Chester, Pa.

The Niles Tool Works, Hamilton, O., have secondhand Machine Tools in first class order for sale

Friction Clutches warranted to drive Circular Log Saws direct on the arbor; can be stopped instantly; also Upright Mill Spindles, Safety Elevators, and Hoisting Machinery. D. Frisbie & Co., New Haven, Conn.

Wanted .- Second-hand Gun Stocking, and other Gun Machinery. Address V. A. King, Lock Box 81, New

Bound Volumes of the Scientific American.-I have on hand about 200 bound volumes of the Scientific American, which I will sell (singly or together) at \$1 each, to be sent by express. See advertisement on page 126. John Edwards, P. O. Box 773, N. Y.

Vertical & Yacht Engines. N.W.Twiss, New Haven, Ct. Having dissolved partnership July 1, 1877, we have still on hand and for sale a very large amount of new and 2d hand machines. See our notice on page 93. Steptoe, McFarlan & Co., Cincinnati, Ohio.

The Turbine Wheel made by Risdon & Co., Mt. Holly, N. J., gave the best results at Centennial test.

Hand Fire Engines, Lift and Force Pumps for fire and all other purposes. Address Rumsey & Co., Seneca Falls, N.Y., U.S.A.

Fine Taps and Dies for Jewelers', Dentists', and Machinists' use, in cases. Pratt & Whitney, Hartford, Ct. Weldless Cold-drawn Steel Boiler and Hydraulic Tubes. Leng & Ogden, 212 Pearl St., N. Y.

Silver Solder and small Tubing. John Holland, Cincinnati. Manufacturer of Gold Pens and Pencil Cases.

Electrical Goods of every description, Annunciators, Bells, Batteries, Wire, Electro-plating Apparatus, etc. Finger, Risteen & Co., Melrose, Mass.

Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y. Patent Scroll and Band Saws, Best and cheapest in use. Cordesman, Egan & Co., Cincinnati, O

Chester Steel Castings Co. make castings for heav gearing, and Hydraulic Cylinders where great strength is required. See their advertisement, page 126.

For Boult's Paneling, Moulding, and Dovetailing Ma chine, and other wood-working machinery, address B.C. Machinery Co., Battle Creek, Mich.

Blake's Belt Studs are stronger, cheaper, and more durable than any fastening for Rubber and Leather Belts. Baxter's Adjustable Wrenches fit peculiar cor-supporting road-bridges; No. 67, on the conditions regners. Manuf.by Greene, Tweed & Co., 18 Park Place, N.Y.

Wanted.—A situation as an apprentice in a Steam Engine Manufactory by a young man who wishes to become a steambos engineer. Good references. Address Mackay Munro, Wilmot, N. S.

Wanted immediately.--A man to manufacture and sell Norton's Complete Flexible and Detachable Harrow in the United States, also to take out foreign patents. Address Lyman Norton, Hartford, Washington Co., N.Y.

Wanted .- A strictly reliable Manufacturing Company to take charge of manufacture and sale of Lempert's Faucet—see Scientific American of Dec. 8, 1877—orpurchaser for Patent Bights. W. S. Lempert, Fort Davis, Texas.

Wanted.-Second-hand Ice Machine, system Carré, of about a thousand pounds capacity in 24 hours. Address, giving price, H. A. S., Box 6, San Antonio, Texas

ForPower&Economy, Alcott's Turbine, Mt. Holly, N.J.

NEW BOOKS AND PUBLICATIONS.

OUR MERCHANT MARINE. By Chas. S. Hill. Third Edition, revised. D. Appleton & Co., publishers, 549 and 551 Broadway, New York.

The writer of this little work aims to show the policy of our government as to internal improvements, compared with the neglect to ocean service; the policy of other nations as to their merchant marine; and lastly what we have lost to our commerce and how to repair our condition. A large amount of statistics and many forcible arguments are adduced in support of his

JOURNAL OF THE SOCIETY OF TELEGRAPH Engineers. Nos. 15 to 19, inclusive. E. & F. N. Spon, publishers, 446 Broome St., New York.

Theabove numbers of the journal contain the proceedings of the society named from April 26, 1876, to May 9, 1877, besides a large number of valuable original communications. The principal papers included are those by Mr. Latimer Clark on Clamond's Thermo-Electric Battery, Mr. Roberts on Batteries, Mr. Risch on Double Current Translation, Herr Treuenfeld on Fire Telegraph, and Mr. Preece on Shunts. These papers are well illustrated and are exhaustive as to their subjects, while embodying the latest results of investigation.

Grundlinien einer Philosophie Technik. Von Ernst Kapp. 1 schweig (Brunswick), 1877.

"That many subjects of an empirical nature have of late been treated in a philosophical manner is a pleasing proof," says the author, "that empiricism and speculation need to be supplemented one by the other." To supply just such a need existing in that branch of technology known as "mechanics" Dr. Kapp has written the present work. Believing that man, by the work Power & Foot Presses, Ferracute Co., Bridgeton, N. J. of his hands, has translated the unknown forms, the hidden functions, and the normal proportions of his bodily members, it has been the author's aim to show Caution.—Our name is stamped in full on all our best in these pages the state of mechanism arrived at by Standard Belting, Packing, and Hose. Buy that only. following organic models as well as an understanding The best is the cheapest. New York Belting and Pack- of the human organism by means of mechanical coning Company, 37 and 38 Park Row, N. Y. trivances, as the only way possible of obtaining a trivances, as the only way possible of obtaining a Steel Castings from one 1b. to five thousand lbs. In- knowledge of the "limits of human activity." would be impossible in a short notice like this to follow, step by step (or even outline), the arguments by which For Best Presses, Dies, and Fruit Can Tools, Bliss & the author reaches his conclusions, and we must there-Williams, cor. of Plymouth and Jay Sts., Brooklyn, N.Y. fore be content to simply call the attention of our read-Hydraulic Presses and Jacks, new and second hand. ers to this book as an important contribution to Ger-Lathes and Machinery for Polishing and Buffing metals. man scientific literature, which we hope some enter-E. Lyon & Co., 470 Grand St., N. Y. prising publisher will put forth in an English dress. so that every one interested in such subjects may enjoy it.

DIGEST OF THE LAW OF TRADEMARKS. By Chas. E. Coddington, Counselor-at-Law. Ward & Peloubet, publishers, New York City. A

This volume contains a digest of all the reported and a few of the unreported adjudications in the courts of the United States, Great Britain, Ireland, and Canada, and of the principal decisions in the courts of France; the treaties between the United States and Foreign Countries; the statutes of the United States concerning trademarks, and the rules and forms of the United States Patent Office for their registration. The volume supplies a long felt deficiency, and will prove of much value to the legal profession.

THE APPLICATION OF ELECTRICITY TO RAIL-WAY WORKING. By William Edward Langdon. Macmillan & Co., publishers, New York City. Price \$1.75.

The object of this work, says its author, is to set before each and all alike not merely the uses to which electricity may be applied in the advancement and for the protection of railway traffic, but also the rules and principles which should regulate its practice. The volume is divided into three divisions, namely, speaking telegraphs, block signaling, and miscellaneous appliances. Under the first heading are chapters on signaling instruments and regulations governing their use, single line working and supervision and circuit arrangement. The various systems of block signaling are taken upin turn, the information being carried down to the latest dates, and finally, under the last heading above noted, are considered signal repeaters, interlocking levers, bells, indicators, and train intercommunication. The author writes clearly, explaining with much care and perhaps with even more detail in elementary matters than might be looked for. There is a profusion of engravings and an appendix of forms, relating, how ever, to English practice.

Messrs. N. W. Aver & Son, advertising agents, of Philadelphia, Pa., issue a manual containing carefully prepared lists of leading daily, weekly, and monthly papers, and a large amount of information valuable to advertisers and business men.

Annales des Ponts et Chaussées, Paris. December, 1877.

The December number of this publication, just received, in no respect falls short of its predecessors in acid and oil of vitriol. the value of its contents to the engineering profession.

The Mémoires contained in the present number are: tin, or other metallic vessels? A. Hot soap and water; supporting road-bridges; No. 67, on the conditions regulating the establishment of railways for small traffic; No. 68, report of the committee appointed to pass opinion on a new process for purifying the sewage waters of Reims; No. 69, on canals. The latter half of the publication is devoted to new laws and legal decisions that are of interest mainly to French engineers.

ECONOMIC MONOGRAPHS. G. P. Putnam's Sons. 1878. No. II. The Silver Ques-tion, by David A. Wells. No. III. The Tariff Question, by Horace White.

The able views held by these two distinguished faucets there is. For general brasswork the thread authors, being well known to the public, need not be pitch is finer than foriron or steel work. repeated here. These little monographs are a model of typographical neatness, and are put forth in a very convenient form for reference.

Rivista Europea—Rivista Internazionale. Flor ence (Italy), January, 1878.

The present number of this able Italian review contains, as its initial article, one of especial interest to scientists, entitled the "Trial of Galileo Galilei." The remainder of the periodical is devoted to literature and European politics.

The Princeton Review. January, 1878.

The present number of this review makes its appearance with the following table of contents: Divine Retribution; The Church and Civil Law, in Scotland and America; the Eastern Problem; Catholic Elements in Presbyterianism; Christian Theology in its vital form and positive Attitude; Genuineness of the Pentateuch; Evolutionism respecting Man, and the Bible; Conditions of Successful Prayer; Contemporary Philosophy— Historical; Materialism and the Pulpit; Casuistry— Theological and Legal. In the article on "Evolutionism respecting Man, and the Bible," Dr. Duffield in a temperate manner discusses the question: "Is evolutionism, as it respects man, consistent with the Bible?" Taking issue with the eminent scientists, both Romanists and Protestants, who maintain that in evolutionism there is nothing hostile to the system of truth revealed in the Scriptures, he discusses the subject in all its bearings and deduces the conclusion that "it is not only inconsistent with the Scriptures as to man's origin, the nature of sin, and man's original and present spiritual condition; its teaching as to the future of the the Scriptures as to the way of man's salvation, its nature, and man's destiny." In concluding his remarks he makes the following disposition of those who differ brush or by dipping and rolling. Oil and colors may be in opinion with him on this subject: "If the development theory of the origin of man shall in a little while take its place—as doubtless it will-with other exploded scientific speculations, then they who accept it with its proper logical consequences will in the life to come, have their portion with those who, in this life, 'lmow not God and obey not the gospel of His Son.'"



(1) B. A. W. asks: 1. What thickness of The lead plate may be in inch or less in thickness; copper, 1 inch or less. Use three cells, exposing about 200 square inches surface of zinc; plates about six inches square will answer. 2. Will common bar lead, melted and moulded, and stove zinc answer? A. Yes.

(2) M. S. asks: How can I make glass and tin adhere firmly together, so as to hold oil without leaking after awhile? Oil will work through almost anything. I have tried plaster of Paris, a number of cements and other mixtures, but without success. A. Try the following: Soak isinglass in water till it is quite soft; then dissolve it in the smallest possible quantity of proof spirit over a hot water bath; in 2 ozs. of this dissolve 10 grains of gum ammoniacum, and while still liquid add half a drachm of mastic dissolved in 3 drachms of rectified spirit; stir well together and use warm. 2. Add softened gelatin to about one half its weight of hot glycerin, 3 Gum shellac dissolved in a concentrated hot aqueous solution of borax; concentrate by evaporation. 4. Slake caustic lime with a little boiling water, beat it Also, a wash or solution which is used before and after into a paste with white of egg or blood, and use immediately dyeing the hair, mustache, and beard, and directions diately. Paper pulp may be added to the first three ce-

(3) W. C. A. writes: 1. Can you give some simple process of preparing the inside of oak casks, so that they will not color white liquor-spirits or gin? A. Gelatin or fine glue solution has been used for the purpose. 2. Spirits spilled on oiled or varnished furniture leave a milk-like stain. What will take it out? A. Rub with a little moist tripoli on chamois skin, and n with a drop of oil

(4) F. W. S. asks: 1. What are rum, brandy, and whisky made from, and how? A. Rum is the spirit obtained by distillation from the fermented skimmings of the sugar boilers, molasses, the juice of the sugar cane, etc. Whisky is nominally the dilute spirits obtained from the distillation of fermented wort of malt or grains, potatoes, etc. Pure brandy is the spirit obtained from the distillation of wines. 2. How are herb extracts made? A. Extracts are usually obtained by heating or willing the substances repeatedly with water (in some cases with dilute spirit) and rapidly evaporating down the several liquors obtained (after allowing to stand a few hours and straining through flannel) over a water or steam bath. See p. 286, Cooley's Cyclopædia of Receipts and Processes."

How can blades cut out of iron be tempered to fine steel, so as to take and retain good cutting edge? A. If soft, by packing in a tight earthen box with fine charcoal, made into a thick paste with molasses, and exposing to a dull red heat for a week, re-heating, rolling, and quenching in cold water.

What chemical will rapidly destroy wood? A. A mix ture of potassium chlorate and nitric acid, or of chromic

What will eradicate the taint of coal oil from pewter,

naphtha; carbon disulphide.

- (5) E. E. M. asks how the musical tones are produced by common glass tumblers partly filled with water? A. By striking their rims with a little mallet or hammer, well padded with chamois leather; or by drawing a well resined how over their rims. A sufficient quantity of water is poured in each glass to give it the desired tone.
- (6) C. E. H. asks whether there is any accepted standard pitch of screw threads for general brass-fitting work, such as glass gauge fittings, marine cocks, etc.? A. For brass nozzles, pipe couplings, and
- (7) C. A. T. writes: 1. I have a helix 8 inches long, containing 200 feet of No. 18 wire. What size and length of wire shall I use for the secondary coil? A. Use 1 lb. of No. 40 copper wire—silk insulation. 2. Whose battery will give the greatest shock? A. Daniell's—use two cells. 3. Does a secondary coil weaken the power of the helix for making permanent magnets? A. Yes. 4. I made a porous cup of white pine wood, 32 inch thick. It was a failure. Why? A. It opposed too much resistance to the passage of the electric current through the solutions of the battery.
- (8) H. H. asks: Will paper macerated with nitric and sulphuric acids explode like gun cotton? A. Goodunglazed paper, exposed for a few minutes to the action of a mixture of about equal parts fuming nitric and sulphuric acids, thoroughly washed in water made slightly alkaline with soda, and dried, has the composition and properties of gun cotton.
- (9) J. O. K. P. asks: Can you give me recipes for colored fires, such as used for theatrical purposes, which will not emit noxious fumes? A. The powerful light from large oxyhydrogen lamps (calcium light), colored by the interposition of suitably stained glasses or gelatin films, is now generally substituted, and gives much better results.
- (10) J. W. asks for a recipe for a waterproof dressing for leather or dry hides? A. Add to a boiling solution of common yellow soap, in water, solution of alum or alum cake (sulphate of alumina) as long as a separation of white alumina soan takes place: allow the precipitate to subside, wash it with hot wahuman race is alike irreconcilable with the teaching of ter, heat moderately for some time to expel adhering water, and dissolve the semi-transparent mass in warm oil of turpentine. The solution may be applied by added to the bath and the substance dried in the air. or more rapidly in a drying room at 90° to 100° Fah., with care to prevent fire.
- (11) E. L. R. writes: I have constructed one of Hill's gravity batteries, and it is imperfect. I get about as strong a current from one cell as from twelve. The zinc is from the ends of matting, and the hangers of brass 1/2 inch wide, 1/2 inch thick, No. 16 gauge, insulated with a thin coat of gutta percha. The battery is charged with 1/2 lb. sulphate of zinc and 1/2 lb. sulphate of copper to half a gallon of water. With a soft iron magnet one cell produces a current strong enough to hold 31/2 lbs., and the twelve cells are only able to sustain about 4 lbs. Where is the trouble? A. lead and copper plate, and what sizes, will be required It is very likely that your zincs contain lead, and as in a small battery (for silver and nickel plating)? A. this will cause local action, and interfere with the current of electricity produced by the battery, it would be advisable to procure new zincs. It is also possible that the wire that is wound on your electro-magnet is too coarse, and therefore has too little resistance for an intense current, such as is produced by a number of cells.
 - (12) J. M. G. asks: Is there a chemical process known by which the spectrum of a burned flower may be "raised from its ashes?" A. Moisten the ashes with a little purehydrochloric acid and glycerin, gather a little on the loop of a thin platinum wire and expose it to the hottest part of the flame of an alcohol or Bunsen gas lamp, at the same instant viewing the flame through a good spectroscope.

Is there a cement by which a piece of ivory can be cemented to brass or steel? A. Melt together equal parts of good pitch and gutta percha; use hot.

- (13) H. S. writes: Can you give me a recipe for making hair dye such as is used in barber shops? how to use it? A. Cleanse the hair with dilute ammonia water. Then moisten it uniformly with dilute solution of gallic acid or ammonium sulphide, and go over it with a comb moistened with solution of one part nitrate of silver in nine parts of water, touching the scalp as little as possible. Stains may be removed by applying a little dilute solution of iodine in iodide of potassium dissolved in water, and then with solution of sodium hyposulphite.
- (14) H. E. E. says, in reply to W. B. H., who asks for the best process for tempering mainsprings for gun locks, and for best steel for that purpose: I have obtained best results with fine cast steel, being careful not to heat above a dull red in hammering as well as in hardening; quench in lukewarm water, then smoke the spring in the blaze of a lamp or resinous wood until it is very black, and heat gently until the soot burns off.
- (15) A. J. asks: How long does it take a signal to pass from America to Europe by marine telegraph? A. About 1/4 of a second.

Was the paper money issued by the Continental Congress ever redeemed? A. No. In 1781 the depreciation was in the ratio of 200 and 500 to 1, and in that vear all former tender acts were repealed.

- (16) J. D. R. writes: I have read that the Continental Telegraph Company were about to use a combination of the Morse instrument and the telephone. Is such a combination possible? A. The combination refers to the use of the two systems of communication, not to a combination of the two instruments
- (17) G. W. R. asks: 1. Is the Atlantic cable laid in pipe through the ocean? A. No. 2. If not, how is it laid? A. It is protected by an armor of heavy

iron wire wrapped around it, and resembles a solid rope of wire.

Is there any known thing that travels faster than light, and what is its rate? A. Lighttravels through space at the rate of 192,000 miles in a second of time. According to Wheatstone static electricity travels along a copper conductor at the rate of about 288,000 miles in a second; but Fizeau's experiments make it 112,680 miles per second, and Walker's only 18,000; while subsequent investigation points to still lower figures-perhaps even only 3,000 miles per second. The matter is still in dispute.

barrels? A. See Scientific American, vol. 36, p. 203,

How can a name be copied from type so as to make a hand stamp? A. By driving the type into wet blotting paper; when the paper is dry, it is removed from the type, and may be then used as a mould, from which a casting may be taken by pouring melted type metal over that surface of the blotting paper which was against the type.

- (19) R. B. R. writes: I have a varnish cask, copal or shellac, which I wish to use to make a filter for drinkingwater, but I cannot remove the smell and taste of varnish. How can the difficulty be overcome? A. Fire the inside, and choke the flame by inverting or covering it after a few minutes, or as soon as the wood
- (20) J. W. D. asks for a recipe for a cheap tion is cheapest, and for ordinary work gives the best satisfaction. You may try the following: Go over the work with hot argol water, then apply a strong hot solution of bichromate of potash in slight excess, and immediately afterward hot logwood solution. A trace of indigo extract may be added to the logwood to correct any reddish cast.
- (21) T. A. J. asks how to copperplate steel knives. A. Dissolve about 1 oz. of sulphate of copper in 1 quart of rain water, and to this add a solution of 3 ozs, of cyanide of potassium in 1 quart of rain water; stir the two solutions, and add 2 ozs. of ammonia water. This is called the "bath," and the articles to be plated are first thoroughly cleaned, then connected by a wire with the negative or zinc pole of the battery, and a sheet of copper is similarly connected with the positive pole of the battery, and both placed in the bath, facing but not touching each other.
- (22) S. W. T. asks: What paste is best for pasteboard? A. An excellent paste for this and similar purposes is made as follows: 4 parts, by weight, of glue softened in 15 parts of water, then heat with the water until a clear solution is obtained, and add 65 parts of water with stirring. Mix 30 parts of starch with water to a thin milk, and stir this into the glue solution, and keep the mixture at the boiling point for a time. Stir in a few drops of carbolic acid, and store in covered vessels to prevent loss of water. It will not sour.
- (23) J. R. E. asks: How can I find the north pole of a permanent bar magnet, without using another magnethaving its poles marked? A. By noticing the direction in which it settles when suspended by a silk thread about one yard long; one end of the thread being tied around the middle of the length of the magnet, and the other end held in the hand. The end of the magnet which points to the north pole of the earth is in this country called the north pole of the magnet; but in France it is called the south pole, reasoning from the fact that unlike poles attract.
- (24) C. R. asks: 1. What liquid is used in connection with silver solder for brazing band saws? longs to other persons, it is unlawful for you to do this. A. A saturated solution of bi-borate of soda in rain water. It is used simply as a flux to dissolve the oxide of the heated metal. 2. Can copper be used in place of silver solder with as much success? A. It is liable to make the joint brittle. The best of materials should be used in making this joint.
- wire, and a tintype plate for the diaphragm. The plate rotting it. is 1 inch thick, and has some kind of varnish on it. The apparatus will not work. Is the trouble in the wire, magnet, or plate? A. The principal difficulty is probably in the difference between the resistance of the wire on the magnet of your instrument and that on the magnet of the instrument at the other end of the line. The resistance of the wire on the magnet of each instrument-that is, in one circuit-should be equal. 2. The magnet will hold 1/2 oz. Is that strong enough?
- (26) R. F. S. writes: A friend of mine savs that Damascus gun barrels are not made out of Damascus, and I claim that they are. Who is right? A. Whatareknown as Damascus gun barrels are made in England, Belgium, and other countries. The Damascus system is that of twisting square bars, forging them square again, re-twisting and re-forging, and so on; continuing the process as often as required to produce a given quality. This process refines the metal all the steel that has at any part of the process formed the corners of the bar being refined by forging.
- (27) D. H. asks for a recipe for a cement, to be used cold, for leather; with the requisites of strength, elasticity, and resistance to moisture. Dissolve good glue, previously softened in cold water, instrong acetic acid, over a hot water bath to a thin aste. Strong, but requires several hours to harden. 2. Melt together equal parts of good coal-tar pitch (not tar) and gutta percha; mix well and use hot. Very strong, elastic, quick setting and waterproof. It may be softened with naphtha and used cold.
- (28) I. H. B. asks: What is the philosophy of the air chamber on the suction pipe of a steam the lumber and flanges be too great? A. The idea does pump? A. It acts very much on the same principle as the chamber on the delivery pipe, diminishing shocks that would otherwise be produced by suddenly stopping the column of water, and tending to cause a uniform

225 revolutions, to make 3 horse power? A. It is rather small. It would be better to use a 34 inch pipe.

- (30) D. E. J. writes: I have an engine with cvlinder 3 inches diameter and 6 inches stroke, which I intend putting in a boat 15 feet long and 5 feet beam, I shall use paddle wheels, and gear the engine 3 to 1. I intend making a tubular boiler 14 inches diameter and 3 feet long, with 40 tubes 1 inch in diameter, having the draught running the whole length of the boiler, and returning to the smokestack at the forward end of the boiler. With this arrangement, will the boiler be large enough to keep up steam to run the boat 4 miles (18) P. S. S. asks: How can I bronze gun an hour? A. By using a forced draught, such as can be produced by exhaust steam, probably the boiler
 - (31) G. M. H. asks: 1. What sort of steel should I use to make dies for cutting stencil plates? A. Weld Jessup's steel to a wrought iron backing. 2. How should the dies be tempered? A. To a deep yellow.
 - (32) Z. F. asks how to face grindstones af ter they are hung. A. Run them dry at a slow speed. and turn them with a piece of 11/2 inch gas pipe.
 - (33) W. F. C. S. writes: I have a fan, the speed of which I wish to double. Will it require twice or four times as much power to run it at the double speed? A. It will take about eight times as much
- (34) G. A. E. asks: 1. How can the tone of a tuning fork be altered? A. By changing the jet black for leather. A. The iron-logwood preparalength, thickness, or width of the prongs. 2. Will the tone of a tuning fork remain the same after years of use? A. When used with care a tuning fork does not change materially.
 - (35) F. M. suggests that A. H. J. (p. 75, current volume), whose stove pipe acts as a pyroligneous distilling apparatus, should fit the joints upside down, so that the drops will fall within the pipe in stead of outside, and that the standing part should slant a little.
 - (36) W. F. L. writes: I wish to cement an iron to the under side of the bed-plate of a sewing machine to strengthen it. How can it be done? A. One of the best cements for this purpose is composed of melted rosin and plaster of Paris, thinned with boiled oil, and applied warm. The surfaces should be cleaned before application. A few screws or rivets would, how ever, be preferable to any cement.
 - (37) A. H. L. asks: What is the method of calculating the chronological cycles, as given in the almanacs? A. The rule for finding what position any given year occupies in the solar cycle is as follows: Add is the year of the cycle, and the quotient is the number and remit to Munn & Co.. 37 Park Row, New York city. of cycles that have elapsed. If there is no remainder the given year is the 28th of the cycle.
 - (38) H. W. asks whether a square foot of surface near the axle of a windmill exerts more or less power than a square foot at the rim? A. The portion near the periphery is most effective, in windmills, water-wheels and fans.
 - (39) C. J. M. writes: I have a Bell wire assing over my house, in which the current is reversed at each stroke of the bell. How can I complete a local circuit, without cutting the Bell wire at each stroke of the bell? A. By tapping the main line as follows: Make a metallic connection between one end of a wire and the main line of the Bell circuit, and connect the other end of the wire with one of the two main line binding posts of a relay, and connect the other main line binding post with the earth. If the Bell circuit be-
- (40) I. H. asks: 1. Can ice be made thick by pumping water upon it after the pond has frozen over? A. Yes, in some cases; but ice obtained in this way is not very homogeneous. 2. What will be the best method of flooding, so that the ice will not be cut through where it falls from the spout? A. The water (25) D. C. W. writes: 1. I made a telephone may be supplied by a number of pipes, wide planking having a bar magnet wound with 1/4 lb. cotton-covered being laid on the ice in the immediate vicinity to avoid
 - (41) F. A. P. writes: I am casting plates of bent form, which are required to be hard. I have been unsuccessful in chilling them; have greased the mould and heated it before pouring in the metal; imperfect castings always result, the plates being thinnerat some places than in others, and cracking in cooling. What is the trouble A. Probably you do not use a proper mixture of iron. Try pouring the metal through severalgates, placing them where the castings are apt to crackor cast too thin.
 - (42) R. L. E. asks how to temper gun springs. A. Heat them evenly to a low red heat in a charcoal fire, and quench them in water with the cold chill off, keeping them immersed until reduced to the temperature of the water. Place an iron pan containing lard oil and tallow, in about equal quantities, over a fire, and place the springs therein, and heat the pan until its contents take fire; then hold the springs in the flames, turning them over and over and dipping them occasionally in the oil to keep them blazing; when the oil adhering to them blazes freely when they are removed from the flames, place them aside to cool off.
 - (43) J. M. K. asks: 1. Is there a cheap gum which would mix with castor oil to put on belts to prevent slipping? A. The best remedy for a slipping belt is to increase its width, run it over larger pulleys, or cover the pulleys with leather or rubber. There is no preparation to prevent slipping which is cheap in the end. 2. Would itbe advisable to run a circular saw, 36 inches in diameter and scant 1/6 inch thick, with flanges 14 or 16 inches diameter, 34 inchthick at center, and tapering to Kinch at rim; would the friction between not appear practicable.
- (44) S. W. M. writes: I send herewith a root used as a catarrh remedy. What is it? A. The root is galangal. It comes from the East Indies. It contains a volatile oil, an acrid resin, gum bassorin, (29) A. F. asks: Can a 1 inch pipe (80 lbs. lignin, and extractive starch and fixed oil, and a cryspressure) furnishsteam enough for a cylinder 31/2 x 41/2, tallizable body called kampferid. The active principles

are the volatile oil and resin. It acts as a stimulant Furnace for iron and steel, C. H. Morgan... aromatic. It is of small value and seldom employed. Garters, Vinton & Fitzpatrick. 199,240
It can be bought in the market for 15 or 20 cents a Gas burners, C. G. Spengler 199,328

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

H. D. C.-It contains, besides calcium sulphate (plaster of Paris), glue or size, alum, lime, and whiting or chalk. -8. B .- Chlorite-hvdrous silicate of magnesia and alumina, colored with oxides of chromium and Not metalliferous,-E. G.-Rich lead sulphide ore (galena).-W. P.-The rock contains traces of lead. zinc, and iron sulphide.—A. H.—Argillaceous red sandstone.—P. S.—It is zircon-syenite. The red crystals are zircon, a silicate of zirconium.-L. W. J.-The gravel does not contain appreciable quantities of precious metals. The red pieces are jasper.

HINTS TO CORRESPONDENTS.

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 fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending January 15, 1878,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, 9 to the date, and divide the sum by 28; the remainder please state the number and date of the patent desired,

Advertising case, R. C. Millings...... 199,306

Aerial vessel, F. A. L. Von Ehren	100,000
Aerial vessel, F. A. L. von Enren	0.040
Aging whisky and spirits, Peiffer & Richards (r)	8,042
Antiseptic composition, F. Jourdes	199,209
Awning, E. De Courcy	199,193
A- C T Voung	199 349
Ax, C. L. Young	100.020
Bed bottoms, N. Dutton	199,147
Bedsteads, folding, W. Seng	199,320
Beehive, R. Strawser	199.328
Deentre, it buttinger	100 991
Billiard cue, C. Seymer	109,021
Billiard cue, C. Seymer	199,241
Blind stop, H. Fellows Boiler, steam, J. Baird Boilers, preventing incrustation, J. North	199,278
Boiler, steam, J. Baird	199,139
Poilors proventing inemetation I North	100 200
Doners, preventing incrustation, J. North	100.000
Bolt holder and clamp, Norris & Sweet	199,220
Book binding, I. Reynolds (r)	8,039
Boot and shoe jack, G. McKay	199,304
Bottle stonner fastener F W Perry	199,165
Bottle stopper fastener, F. W. Perry Bottle stopper fastener, E. D. Weyburn	100,200
Bottle stopper Tastener, E. D. Weyburn	199,001
Box fastener, B. S. Atwood	199,188
Box manufacture, H. C. Stone	199,327
Bracket, F. H. Robinson	199,167
Braha and Cara & Field	100 986
Brake, car, Gue & Field	100,000
Brake for ship's windlass, L. Garison	199,283
Brake shoe, car, W. McConway	199,161
Brake shoe, car, W. McConway	199,176
Brush, painter's, J. W. Howard	199.205
Duelle for about A Mahielengh	199 216
Buckle for shoes, A. Makiolczyk	100,210
Buckle for shoes, A. Makiolczyk	199,279
Calcimining Size for, W. S. Welch	199.242
Calculator W Hart	199,289
Can jacket, oil, L. Peter	100 999
Can jacket, on, it leter	100,000
Can, oil, Baron & Tallman199,251,	199,252
Car coupling, J. J. Anthony	199,173
Car, refrigerator, A. W. Zimmerman	199,343
Car starter, W. Jasper	
Car starter, W. Jasper	100,100
- D.	100 950
Car wheels, making moulds for, B. Burgess	199,259
Car wheels, making moulds for, B. Burgess	199,259 199,246
Car wheels, making moulds for, B. Burgess	199,259 199,246 199,310
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds	199,246 199,310
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey	199,246 199,310 199,313
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr.	199,246 199,310 199,313 199,179
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom H. S. Hale (r)	199,246 199,310 199,313 199,179 8,041
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r)	199,246 199,310 199,313 199,179 8,041 199,189
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r)	199,246 199,310 199,313 199,179 8,041 199,189
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r)	199,246 199,310 199,313 199,179 8,041 199,189
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. J. Goodrich	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187 199,319 199,198
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter. Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, K. B. Boeklen.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187 199,319 199,188
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r).	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187 199,187 199,181 199,181 8,068
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r).	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187 199,187 199,181 199,181 8,068
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp. D. H. Fanning	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187 199,181 8,068 199,284 199,277
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp. D. H. Fanning	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,187 199,181 8,068 199,284 199,277
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter. Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Coiter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren.	199,246 199,310 199,313 199,315 8,041 199,189 199,212 199,183 199,169 199,187 199,319 199,181 8,063 199,277 199,333
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks	199,246 199,310 199,313 199,315 8,041 199,189 199,212 199,183 199,169 199,187 199,181 8,038 199,284 199,287 199,283 199,333 199,301
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,187 199,181 199,181 8,068 199,277 199,277 199,231 199,236
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter. Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss	199,246 199,310 199,313 199,179 8,041 199,212 199,189 199,189 199,187 199,199 199,191 8,068 199,277 199,333 199,201 199,277
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chair, rocking, J. Krapp Chandelier, extension J. W. Carter. Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, B. Boeklen. Coiter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,181 8,068 199,284 199,287 199,333 199,301 199,333
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chair, rocking, J. Krapp Chandelier, extension J. W. Carter. Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, B. Boeklen. Coiter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,181 8,068 199,284 199,287 199,333 199,301 199,333
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bralley	199,246 199,310 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,319 199,181 8,068 199,284 199,277 199,301 199,236 199,234 199,234 199,234 199,244 199,244
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Dersk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,181 8,068 199,287 199,287 199,333 199,301 199,241 199,244 199,244 199,244 199,244 199,244 199,244
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge.	199,246 199,310 199,310 199,313 199,179 8,041 199,189 199,212 199,183 199,169 199,181 199,181 199,181 199,181 199,284 199,277 199,303 199,301 199,301 199,301 199,301 199,301 199,301
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,277 199,331 199,281 199,291 199,291 199,291 199,214 199,142 199,305 199,170
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,277 199,331 199,281 199,291 199,291 199,291 199,214 199,142 199,305 199,170
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Erg carrier, R. R. Wilkinson.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,181 199,181 8,068 199,277 199,333 199,301 199,274 199,280 199,244 199,244 199,244 199,240 199,214 199,210 199,210
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter. Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,181 199,181 8,068 199,284 199,284 199,271 199,333 199,301 199,334 199,214 199,170 199,270 199,200 199,320
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension J. W. Carter. Chandelier, extension J. W. Carter. Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, B. Boeklen. Coiter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feether machine, C. Ballinger.	199,246 199,310 199,310 199,310 199,179 8,041 199,189 199,212 199,189 199,199 199,198 199,198 199,277 199,330 199,236 199,236 199,241 199,142 199,214 199,142 199,214 199,142 199,210 199,200 199,339 199,200 199,339 199,200 199,339
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Bgg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,214 199,277 199,383 199,214 199,305 199,214 199,305 199,319 199,319 199,319
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier, extension. J. W. Carter Chandelier for ofl burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Cotter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Bgg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,214 199,277 199,383 199,214 199,305 199,214 199,305 199,319 199,319 199,319
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Dersk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Byeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger. Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,181 8,068 199,284 199,284 199,284 199,214 199,170 199,200 199,200 199,200 199,210 199,210
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Coiter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John.	199,246 199,310 199,310 199,311 199,179 8,041 199,189 199,212 199,188 199,169 199,198 199,198 199,284 199,284 199,286 199,286 199,281 199,286 199,281 199,142 199,142 199,142 199,178 199,270 199,270 199,270
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier, extension. J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger Fence, portable, A. G. Kirk Fence wire, barb for, S. H. St. John. Fences, metal barb for, J. McNeill.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,214 199,277 199,383 199,214 199,305 199,214 199,305 199,214 199,305 199,214 199,305 199,214 199,305 199,214 199,305 199,162 199,305
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension. J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, iA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fences, metal barb for, J. McNeill. Fire escape, W. A. Greene.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,281 199,281 199,291 199,210 199,200 199,200 199,200 199,210 199,200 199,210
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feether machine, C. Ballinger. Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fences, metal barb for, J. McNeill. Fire escape, W. A. Greene. Fire extinguisher, Abbott & Birdsell	199,246 199,310 199,311 199,313 199,179 8,041 199,189 199,189 199,189 199,189 199,189 199,284 199,284 199,284 199,270 199,300 199,300 199,301 199,214 199,170 199,200 199,301 199,217 199,300 199,301 199,218 199,170 199,200 199,301 199,219 199,319 199,179 199,219 199,179 199,219 199,179
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension J. W. Carter Chandelier for oil burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feether machine, C. Ballinger. Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fences, metal barb for, J. McNeill. Fire escape, W. A. Greene. Fire extinguisher, Abbott & Birdsell	199,246 199,310 199,311 199,313 199,179 8,041 199,189 199,189 199,189 199,189 199,189 199,284 199,284 199,284 199,270 199,300 199,300 199,301 199,214 199,170 199,200 199,301 199,217 199,300 199,301 199,218 199,170 199,200 199,301 199,219 199,319 199,179 199,219 199,179 199,219 199,179
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension J. W. Carter. Chandelier, extension J. W. Carter. Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, iA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas. Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Byeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger. Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk Fence wire, barb for, S. H. St. John. Fences, metal barb for, J. McNeill Fire excinguisher, Abbott & Birdsell Fire kindler, H. H. Case.	199,246 199,310 199,313 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,063 199,181 8,063 199,277 199,330 199,214 199,236 199,300 199,214 199,214 199,205 199,309 199,214 199,199 199,214 199,199 199,214 199,199 199,216 199,210 199,210 199,211 199,200 199,319 199,211 199,319
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Begg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fire escape, W. A. Greene. Fire kindling, Williamson & Vogts.	199,246 199,310 199,313 199,179 8,041 199,181 199,182 199,183 199,181 199,181 8,068 199,281 199,281 199,214 199,230 199,214 199,200 199,210 199,210 199,210 199,210 199,211 199,330 199,212 199,331 199,311
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Begg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fire escape, W. A. Greene. Fire kindling, Williamson & Vogts.	199,246 199,310 199,313 199,179 8,041 199,181 199,182 199,183 199,181 199,181 8,068 199,281 199,281 199,214 199,230 199,214 199,200 199,210 199,210 199,210 199,210 199,211 199,330 199,212 199,331 199,311
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey. Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, rocking, J. Krapp Chandelier, extension J. W. Carter. Chandelier, extension J. W. Carter. Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, A. I. Goodrich Clock, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Egg carrier, R. R. Wilkinson. Byeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger. Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fences, metal barb for, J. McNeill Fire escape, W. A. Greene. Fire kindling, Williamson & Vogts. Fruit dryer, J. C. Slaughter Fruit gatherer, G. W. Baker.	199,246 199,310 199,311 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,181 8,068 199,277 199,330 199,214 199,236 199,300 199,214 199,214 199,214 199,216 199,216 199,199 199,211 199,200 199,319 199,211 199,200 199,319 199,211 199,319 199,211 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319
Car wheels, making moulds for, B. Burgess Carbureting air, Wolle & Munyon Carriage seat, J. D. Olds Caster, furniture, J. B. Ritchey Casting, collapsible core for, G. Bisset, Jr. Chair bottom, H. S. Hale (r) Chair, oscillating, G. W. Cummings, Jr. Chair, rocking, J. Krapp Chandelier, extension, J. W. Carter Chandelier for oll burners, M. Schmickl. Churn motor, T. J. Crump Clinometer, L. C. Schnell Clock, A. I. Goodrich Clock, tell-tale, R. Boeklen. Colter, S. T. Ferguson (r). Commode covers, H. Gerould Corset clasp, D. H. Fanning Cuspadore, S. J. Van Stavoren. Derrick for hay stackers, A. J. Marks Desk, J. D. Tatum. Die for plastic materials, Winn & Bliss Dish, butter, IA. C. Lippitt Draft equalizer, B. C. Bradley Dredging machine, J. Menge. Dress train supporter, A. W. Thomas Drill and planter, G. W. Grimes Begg carrier, R. R. Wilkinson. Eyeglass for watchmakers, J. H. Mather Feather machine, C. Ballinger Felt fabrics, P. A. Dailey. Fence, portable, A. G. Kirk. Fence wire, barb for, S. H. St. John. Fire escape, W. A. Greene. Fire kindling, Williamson & Vogts.	199,246 199,310 199,311 199,179 8,041 199,189 199,212 199,189 199,187 199,319 199,181 8,068 199,181 8,068 199,277 199,330 199,214 199,236 199,300 199,214 199,214 199,214 199,216 199,216 199,199 199,211 199,200 199,319 199,211 199,200 199,319 199,211 199,319 199,211 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319 199,111 199,319

ı	Gas burners, C. G. Spengler	199.323
	Gas retort charger, A. Q. Ross	199,316
	Gate, S. Rogers	
-	Gate, R. Yale	
L	Gearing, J. T. Hawkins	
	Governor, H. T'. Farnsworth	199,149
•	Grain binder, F'. E. McNall	199,219 199,159
	Grain separator, B. A. Grant	199,151
l	Grain separator, T. C. Histed Grain separator, J. L. Lowe	
,	Grain separator, H. B. Stevens	199,233
	Hair curling device, Burnham & Chase Harness, girth for, C. M. Sanford	
,	Harness pad, H. R. Ridgley	199,225
	Harness straps, F. Conway Harrow, L. F. Haas	
	Harvester, cotton. S. & M. Ruthenburg	199,168
	Hat holder, O. Jenness	
	Hay rack, N. B. Cooper	199,186
,	Heels, cutting wooden, W. W. Abbott	
ľ	Horse collar fastening, J. H. Emerson	199,276
1	Horse detacher, F. J. Leidorf	
,	Horseshoes, J. Russell	199,228
,	Hub, vehicle wheel, C. K. Wilcox Inhaler, O. P. Barber	
,	Insoles, manufacturing, C. Riewe	199,226
l	Lamp, E. J. Blackham Lamp burner, S. C. Catlin	
	Lamp extinguisher, W. S. Asbury Lamp filler, H. & A. T. Hatch	
	Lamp shade cover, F. L. Cutter	199,290 199,269
3	Lamps, oil chamber for, H. T. Hanks	199,201
	Last, L. Darozier	
	Lifting jack, S. D. J. & L. S. Barrow	199,177
	Liquids, vessel for holding, W. F. Sherman Lock, electric, P. Bowe	
	Locomotive, exhaust nozzle, R. N. Allen	199,137
	Lubricator, J. W. Reed	
	Meats, etc., preserving, T. G. Ames	199,248
•	Mouldings, polishing, C. G. Purdy	199,166
	Mower knife sharpener, Caden & McCray	199,261
	Muzzle, calf, R. S. Hazen, Sr	199.156
	Neck wear, holder for, E. D. Dougherty	
	Nut lock, E. McConnell	199,303
	Ore separators, dust, J. P. Conkling Ore washing apparatus, J. M. Allenwood (r)	8,037
	Panelingmachine, H. J. Cordesman, Jr	
	Pantaloons, J. W. Davis	
	Paper shutter for windows, W. Hipkins	199,291
	Piano action, upright, A. H. Hastings Piano action, upright, C. E. & A. F. Rogers	100,104
	Pile, D. B. Oliver	199,311
	Pile driver, Libby & Hatch	199,346
	Pipe coupling, C. H. Perkins	199,312
,	Pipes, joining of lead, A. L. Bricknell	199,180
	Pivot turning attachment, W. N. Manning	199,217
,	Planter, corn, R. H. Avery Plow, J. W. Mahoney	
	Plow, sulky, C. A. Hague	199,153
•	Pole crab for vehicles, R. S. Grummon	
	Press, hydraulic, A. B. Lawther	
,	Pressure gauge, J. Helwig.	199,257
	Radiator, steam, W. H. Brown Rails, chair for switch, S. H. Havens	199,155
	Railway signal, M. A. Stevens	199.234
	Rake, horse hay, A. Tschop	100 1/12
	Rectifying apparatus, A. J. & A. B. Gallagher Rectifying apparatus, A. J. & A. B. Gallagher	199,239
	Refrigerator shipping box, C. H. & M. C. Turner.	199,239 199,281
		199,239 199,281 199,282 199,332
	Refrigerator shipping box, J. Sproat	199,239 199,281 199,282 199,332 199,324
1	Refrigérator shipping box, J. Sproat	199,239 199,281 199,282 199,332 199,324 199,210 199,253
1	Refrigérator shipping box, J. Sproat	199,239 199,281 199,282 199,332 199,324 199,210 199,253 199,325
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus	199,239 199,281 199,282 199,332 199,324 199,210 199,253 199,325 199,265 199,194
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer.	199,239 199,281 199,282 199,332 199,324 199,210 199,253 199,325 199,265 199,194 199,229
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler	199,239 199,281 199,282 199,332 199,210 199,253 199,265 199,194 199,229 198,213 199,338
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour	199,239 199,281 199,282 199,332 199,210 199,253 199,265 199,194 199,229 198,213 199,338
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach. Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer tran. Forney & Tillotson.	199,239 199,281 199,282 199,332 199,324 199,210 199,210 199,253 199,265 199,194 199,229 198,213 199,338 198,308 199,385 199,385
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus. Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt.	199,239 199,281 199,282 199,332 199,324 199,210 199,253 199,265 199,194 199,229 198,213 199,338 198,308 199,385 199,385
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine, button hole, T. S. L. Howard. Sewing machine darning attachment, R. M. Rose	199,239 199,281 199,282 199,382 199,324 199,210 199,253 199,265 199,265 199,265 199,385 199,388 199,385 199,385 199,387 199,387 199,387
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine, button hole, T. S. L. Howard	199,239 199,281 199,282 199,332 199,324 199,210 199,255 199,265 199,194 199,229 198,213 199,338 199,388 199,385 199,387 199,307 199,218
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine, button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman	199,239 199,281 199,282 199,332 199,324 199,250 199,255 199,265 199,194 199,229 198,213 199,338 198,308 199,336 199,336 199,315 199,218 199,315 199,315
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc. I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine, button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark.	199,289 199,281 199,282 199,332 199,324 199,210 199,253 199,265 199,194 199,283 199,338 199,338 199,338 199,307 199,29 198,213 199,315 199,315 199,315 199,315
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r).	199,289 199,281 199,282 199,332 199,324 199,325 199,265 199,265 199,269 198,218 199,388 199,388 199,388 199,381 199,381 199,381 199,393 199,393 199,393 199,315 199,214 199,243 199,262 199,243
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r)	199,289 199,281 199,281 199,382 199,382 199,325 199,325 199,265 199,194 199,229 198,213 199,383 199,383 199,383 199,397 199,206 199,314 199,213 199,214
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc. I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp. Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace. Spring, platform, M. C. West.	199,289 199,281 199,282 199,332 199,324 199,325 199,325 199,265 199,269 198,213 199,385 199,386 199,386 199,381 199,381 199,283 199,315 199,293 199,243 199,243 199,243 199,243 199,245 199,245 199,245 199,245 199,256 199,356
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws mill dog, C. J. Leach Saws, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, yehicle, G. Stricker. Spring, vehicle, G. Stricker. Springler, garden, Hodel & Stauber	199,289 199,281 199,281 199,282 199,332 199,325 199,325 199,325 199,325 199,326 199,269 198,213 199,229 198,213 199,338 199,338 199,338 199,307 199,206 199,318 199,218
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day	199,289 199,281 199,282 199,332 199,324 199,325 199,265 199,265 199,265 199,283 198,308 199,336 199,336 199,336 199,238 199,248 199,248 199,248 199,248 199,248 199,248 199,248 199,256 199,366 199,376 199,285 199,386 199,386 199,386 199,386 199,386 199,383 199,283 199,283 199,283 199,283 199,283 199,283 199,283 199,386
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, vehicle, G. Stricker Spring, vehicle, G. Stricker Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler	199,289 199,281 199,281 199,382 199,325 199,325 199,325 199,325 199,194 199,229 198,213 199,383 199,383 199,307 199,206 199,315 199,148 199,223 199,145 8,040 199,255 199,256 199,256 199,258 199,258 199,258 199,258 199,258
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson	199,289 199,281 199,282 199,382 199,324 199,253 199,325 199,194 199,229 198,213 199,385 199,385 199,386 199,381 199,386 199,385 199,206 199,315 199,218 199,228 199,285 199,283 199,283 199,283 199,192 199,185 199,195
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Rouler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws mill dog, C. J. Leach Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine, button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring, vehicle, G. Stricker Spring, platform, M. C. West. Spring, vehicle, G. Stricker Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff.	199,289 199,281 199,281 199,382 199,382 199,325 199,325 199,194 199,229 198,213 199,383 199,383 199,383 199,385 199,385 199,295 199,148 199,293 199,293 199,293 199,293 199,293 199,293 199,293 199,293 199,293 199,293 199,293 199,192 199,295 199,295 199,295 199,295 199,295
	Refrigérator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, vehicle, G. Stricker. Sprinker, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stove, coal oil, J. A. Frey Stove grate, J. A. Lawson	199,289 199,281 199,282 199,382 199,382 199,325 199,325 199,325 199,194 199,229 198,213 199,383 199,383 199,383 199,383 199,384 199,385 199,385 199,385 199,206 199,315 199,145 8,040 199,243 199,243 199,243 199,243 199,243 199,243 199,243 199,243 199,256 199,315 199,199,199,199,199,199,199,199,199,199
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stuppository, F. D. Owen	199,289 199,281 199,282 199,382 199,382 199,325 199,325 199,194 199,229 198,213 199,385 199,385 199,385 199,385 199,385 199,385 199,318 199,206 199,148 199,223 199,148 199,243 199,243 199,243 199,256 199,385 199,295 199,192 199,295 199,295 199,295 199,295 199,295 199,295 199,295 199,295 199,295 199,295 199,295
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws et, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stove, coal oil, J. A. Frey Stove grate, J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf support, Flather & Houghtaling.	199,289 199,281 199,282 199,382 199,382 199,325 199,325 199,325 199,194 199,229 198,213 199,385 199,385 199,386 199,386 199,385 199,385 199,385 199,206 199,218 199,218 199,219
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Rouler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Nacher. Sewing machine, button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring, vehicle, G. Stricker Spring, platform, M. C. West. Spring, vehicle, G. Stricker Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery. J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf suppurt, Flather & Houghtaling. Telephone, E. Berliner Thrashing machines, H. K. Andrews.	199,289 199,281 199,281 199,282 199,382 199,325 199,325 199,325 199,194 199,229 199,381 199,388 199,388 199,388 199,387 199,206 199,148 199,223 199,148 199,223 199,148 199,223 199,148 199,223 199,149 199,256 199,256 199,256 199,256 199,256 199,256 199,257 199,160 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,280 199,281 199,150 199,281
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws et, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff. Stove, coal oil, J. A. Frey. Stove grate, J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Thrashing machines, H. K. Andrews. Thrashing machines, W. E. Harwell.	199,289 199,281 199,281 199,282 199,382 199,382 199,325 199,325 199,325 199,194 199,229 198,213 199,383 199,383 199,383 199,383 199,385 199,385 199,385 199,206 199,218 199,21
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc. I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp. Skirt, hoop, F. A. Brewster (r). Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stone sawing machinery, J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf suppurt, Flather & Houghtaling. Telephone, E. Berliner Thrashing machines, W. E. Harwell. Tug holder, elastic, W. S. Mead. Type writing machines, W. E. Harwell. Tug holder, elastic, W. S. Mead. Type writing machines, Clough & Jenne.	199,289 199,281 199,282 199,382 199,382 199,325 199,325 199,325 199,194 199,229 199,385 199,385 199,385 199,385 199,385 199,385 199,281 199,281 199,281 199,281 199,282 199,185 199,285 199,185 199,285 199,285 199,285 199,285 199,285 199,285 199,285 199,285 199,286
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, V. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws at, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf support, Flather & Houghtaling. Telephone, E. Berliner Thrashing machines, W. E. Harwell. Tug holder, elastic, W. S. Mead Type writing machine, Clough & Jenne Umbrella tip cup, H. S. Frost	199,289 199,281 199,281 199,282 199,382 199,382 199,325 199,325 199,194 199,229 198,213 199,385 199,385 199,385 199,385 199,385 199,385 199,385 199,385 199,385 199,385 199,385 199,148 199,283 199,148 199,283 199,149 199,285 199,192 199,192 199,192 199,193 199,192 199,192 199,193 199,192 199,193 199,192 199,193 199,192 199,193 199,192 199,193 199,192 199,193 199,192 199,193 199,193 199,193 199,194 199,195 199,197 199,197 199,197 199,198 199,198 199,199 199,199 199,199 199,191 199,191 199,192 199,193 199,193 199,194 199,195 199,196 199,196 199,197 199,197 199,198
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc. I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff. Stove, coal ofl, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf support, Flather & Houghtaling. Telephone, E. Berliner Thrashing machines, W. E. Harwell. Tug holder, elastic, W. S. Mead Type writing machines, W. E. Harwell. Tug holder, elastic, W. S. Mead Type writing machines, W. E. Benat Wagofis, lap seat for, G. W. Damon.	199,289 199,281 199,281 199,282 199,382 199,325 199,325 199,325 199,194 199,229 199,385 199,385 199,387 199,387 199,281 199,281 199,281 199,283 199,283 199,385 199,283 199,283 199,283 199,283 199,283 199,285 199,286 199,287
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Ruler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, V. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws mill dog, C. J. Leach Saws, Manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Nacher. Sewing machine button hole, T. S. L. Howard. Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T. J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf support, Flather & Houghtaling. Telephone, E. Berliner Thrashing machines, H. K. Andrews. Thrashing machines, W. E. Harwell. Tug holder, elastic, W. S. Mead Type writing machine, Clough & Jenne Umbrella tip cup, H. S. Frost Vessels, centerboard for, P. L. Senat. Wagonis, lap seat for, G. W. Damon.	199,289 199,281 199,281 199,282 199,382 199,382 199,325 199,325 199,194 199,229 198,213 199,385 199,385 199,385 199,385 199,385 199,385 199,385 199,206 199,145 199,148 199,223 199,145 8,040 199,285 199,285 199,296 199,296 199,297 199,296 199,297 199,190 199,296 199,297 199,190 199,296 199,297 199,190 199,296
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Rouler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws mill dog, C. J. Leach Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Nacher. Sewing machine, button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery. J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf suppurt, Flather & Houghtaling Telephone, E. Berliner Thrashing machines, H. K. Andrews. Thrashing machines, W. S. Mead Type writing machines, H. S. Andrews. Thrashing machines, H. S. Frost Vessels, centerboard for, P. L. Senat Wagon's, lap seat for, G. W. Damon. Water wheels, flume for, J. P. Drouillard.	199,289 199,281 199,281 199,282 199,382 199,325 199,325 199,325 199,194 199,229 199,385 199,385 199,386 199,387 199,206 199,216 199,221 199,148 199,228 199,148 199,286 199,287 199,266 199,287 199,267 199,267 199,267 199,267 199,267 199,271 199,180 199,281 199,185 199,285 199,285 199,285 199,285 199,285 199,285 199,285 199,285 199,285 199,286 199,286 199,286 199,286 199,286 199,286 199,286 199,286 199,286 199,286 199,287 199,160 199,286 199,281 199,185 199,286 199,281 199,185 199,282 199,186 199,286 199,281 199,186 199,286 199,286 199,287 199,186 199,280 199,281
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Rouler, Barrows & Kennish. Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, V. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saw set, W. C. Wheeler Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Naeher. Sewing machine button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark. Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r). Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker. Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery, J. Langstaff. Stove, coal ofl, J. A. Frey Stove grate, J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf support, Flather & Houghtaling. Telephone, E. Berliner Thrashing machines, H. K. Andrews. Thrashing machines, H. S. Frost Vessels, centerboard for, P. L. Senat Wagoris, lap seat for, G. W. Damon Water closet, J. H. Stevens Water wheels, flume for, J. P. Drouillard. Windmill, G. Hodges	199,289 199,281 199,281 199,282 199,324 199,325 199,325 199,325 199,194 199,229 198,213 199,388 199,388 199,388 199,388 199,388 199,388 199,386 199,296 199,296 199,296 199,296 199,296 199,297 199,160 199,298 199,199 199,191 199,192 199,193 199,192 199,193 199,192 199,193 199,193 199,193 199,193 199,193 199,193 199,193 199,196 199,280 199,296
	Refrigerator shipping box, J. Sproat Roof and floor, fireproof, F. L. Kane. Rouler, Barrows & Kennish Sad iron, J. B. Stamour. Sash fastener, I. Cogswell. Sash fastener, W. T. Doremus Satchel, traveling bag, etc., I. Scheuer. Saw mill dog, C. J. Leach Saws mill dog, C. J. Leach Saws, manufacturing circular, W. E. Nickerson. Screen, window, Walker & Hunt. Sewer trap, Forney & Tillotson. Sewers, check valve for, C. Nacher. Sewing machine, button hole, T. S. L. Howard Sewing machine darning attachment, R. M. Rose Shaft support for carriage harness, G. C. Eastman Shedding mechanism, O. Piper. Sheep shears, power, J. C. Wightman Shutter fastening, J. H. Clark Sink trap, H. W. Clapp Skirt, hoop, F. A. Brewster (r) Snatch block, M. H. Tarbox Spring for vehicles, W. H. Brace Spring, platform, M. C. West. Spring, vehicle, G. Stricker Sprinkler, garden, Hodel & Stauber Squares, spacing T, J. D. Day Stamp, canceling, H. A. Coats Stamp, hand, W. H. Keeler Stencil plate, D. G. Garretson Stone sawing machinery. J. Langstaff. Stove, coal oil, J. A. Frey Stove grate. J. A. Lawson Stoves and ranges, Dutot & Thrift. Suppository, F. D. Owen Table leaf suppurt, Flather & Houghtaling Telephone, E. Berliner Thrashing machines, H. K. Andrews. Thrashing machines, W. S. Mead Type writing machines, H. S. Andrews. Thrashing machines, H. S. Frost Vessels, centerboard for, P. L. Senat Wagon's, lap seat for, G. W. Damon. Water wheels, flume for, J. P. Drouillard.	199,289 199,281 199,281 199,282 199,324 199,325 199,325 199,325 199,194 199,229 198,213 199,388 199,388 199,388 199,388 199,388 199,388 199,386 199,296 199,296 199,296 199,296 199,296 199,297 199,160 199,298 199,199 199,191 199,192 199,193 199,192 199,193 199,192 199,193 199,193 199,193 199,193 199,193 199,193 199,193 199,196 199,280 199,296

[A copy of any of the above patents may be had by remitting one dollar to MUNN & Co., 37 Park Row, New York city.]