Business and Personal.

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

For Sale,-Iron Planer, 50" x 54" x 16 ft.: engine lathes, $25'' \times 20$ ft., $21'' \times 8$ ft.; also six other lathes of various sizes, in A No. 1 condition. Apply to or address John Steptoe & Co., 214 W. Second St., Cincinnati, O.

Wanted.-Copper Ores Address Stillman & Koefoed 40 and 42 Broadway, New York city.

Knudson Electrical Company, Limited, No 39 Nassa St., New York, undertakes the patenting and sale in Europe of meritorious inventions on commission.

CHICAGO, October 25, 1882. H. W. Johns M'f's Co., 87 Maiden Lane, New York. DEAR SIRS: I have been using your Asbestos Packing, and can recommend it to engineers and the public ROCKS, MINERALS, AND STOCKS. By Fredegenerally as the best packing in use. W. CORLIS. Engineer, Sargent, Greenleaf & Brooks, 43 Franklin St., Chicago, Ill.

American Fruit Drier. Free Pamphlet. See ad., p. 301 ${\bf Jaws, Emery\ Wheels, Grinders, automatic\ Knife\ Grinders.}$ Fire Brick, Tile, and Clay Retorts, all shapes. Bornerg & O'Brien, M'f'rs, 23d St., above Race, Phila.. Pa.

Drop Forgings of Iron or Steel. See adv., page 302. For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y.

Brass & Copper in sheets, wire & blanks. See ad. p. 302. The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa.. can prove by 20,000 Crank Shafts and 15,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon. 24 Columbia St., New York. Diamond Drills, J. Dickinson, 64 Nassau St., N. Y.

Eagle Anvils, 10 cents per pound. Fully warranted. Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 302. Garmore's Artificial Ear Drums for relief of partial or entire deafness. Invented by one who has been deaf thirty years. Simple and scientific in construction; not observable in use. Send for circular. John Garmore, S. W. cor. 5th and Race Sts., Cincinnati, O.

Schools open.-Send for Catalogue of Drawing Materials. Keuffel & Esser, New York.

For Mill Macb'y & Mill Furnishing, see illus, adv. p.300. Red Jacket Adjustable Force Pump. See adv., p. 302.

Pays well on small investment. – Stereopticons, Magic Lanterns, and Views illustrating every subject for public exhibitions. Lanterns for colleges, Sunday-schools, and home amusement. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., N. Y.

Fine Taps and Dies in Cases for Jewelers, Dentists, Amateurs. The Pratt & Whitney Co., Hartford, Conn. Woodwork'g Mach'y. Rollstone Mach. Co. Adv., p. 302.

Trevor's Patent Key Seat Cutter. Trevor & Co., Lock port, N. Y. See page 302.

Wanted .- A situation by a practical "nickel plater' who understands polishing, grinding, dipping, and brass finishing. Address W. H. Wright, Indianapolis, Ind.

For Sale Cheap-One Boiler Plate Power Punch and Clipper. Inquire of Noble & Hall, Erie, Pa.

The Double Induction Motor and Automatic Battery Griscom's patents, are manufactured and for sale by the Electro Dynamic Co., Philadelphia. This little electric motor, illustrated and described in our editorial, June 24, 1882, is now on exhibition at the American Institute lb., according to battery. Weight 2½ lb. The only practical power for driving the family sewing machine. small lathes, dental and surgical instruments, etc. 1,000stitches per minute on the sewing machine. 7.000 revolutions per minuteon dental tools. Apparatus complete for sewing machines, lathes, \$35 and \$40. Dental appa ratus, nickel plated, complete, \$50.

Cope & Maxwell M'f'g Co.'s Pump adv., page 285, The Berryman Feed Water Heater and Purifier and Feed Pump. I. B. Davis' Patent. See illus. adv., p. 285. For Pât. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cat-off Coupling. see Frisbie's ad. p. 286. Mineral Lands Prospected, Artesian Wells Bored, by

Pa. Diamond Drill Co. Bex 423, Pettsville, Pa. See p, 286. C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 286.

4 to 40 H. P. Steam Engines. See adv. p. 286.

Sheet and cast brass goods, experimental tools, and fine machinery. Estimates given when models are furnished. H. C. Goodrich, 66 to 72 Ogden Place, Chicago. Drop Forgings. Billings & Spencer Co. See adv., p. 270

Improved Skinner Portable Engines. Erie, Pa.

Engines, 10 to 50 horse power, complete, with governor. \$250 to \$550. Satisfaction guaranteed. Nearly hundred in use. For circular address Heald & Morris (Drawer 127), Baldwinsville, N. Y.

25" Lathes of the best design. G. A. Ohl & Co. East Newark, N. J.

Collection of Ornaments.-A book containing over 1,000 different designs, such as Crests. Coats of Arms, Vignettes. Scrolls, Corners, etc., will be mailed free on receipt of \$1. Address Palm & Fechteler, 6 West 14th Street, New York.

Combination Roll and Rubber Co., 68 Warren street, N. Y. Wringer Rolls and Moulded Goods Specialties.

Pure Water furnished Cities, Paper Mills, Laundries Steam Boilers, etc., by the Multifold System of the Newark Filtering Co., 177 Commerce St., Newark, N. J. Latest Improved Diamond Drills. Send for circular

to M. C. Bullock Mfg. Co., 80 to 88 Market St., Chicago, Ill. First Class Engine Lathes, 20 inch swing, 8 foot bed,

now ready. F.C. & A.E. Rowland, New Haven, Conn. Ice Making Machines and Machines for Cooling

Breweries, etc. Pictet Artificial Ice Co. (Limited), 142 Greenwich Street. P. O. Box 3083, New York city.

Jas. F. Hotchkiss, 84 John St., N. Y.: Send me your free book entitled "How to Keep Boilers Clean," containing useful information for steam users & engineers. (Forward above by postal or letter; mention this paper.)

Presses, Dies, Tools for working Sheet Metals, etc. Fruitand other Can Yools. E. W. Bliss, Brooklyn, N. Y. Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N.J.

Split Polleys at low prices, and of same strength and arance as Whole Pulleys. Yocom & Son's Shafting Works. Drinker St., Philadelphia, Pa.

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

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

NEW BOOKS AND PUBLICATIONS,

rick H. Smith, Chicago. The Railway Review.

Mr. Smith discusses rocks and minerals from the standpoint of the mining engineer, assayer, and expert. Am. Twist Drill Co., Meredith, N. H., make Pat. Chuck His style is apt to be freer than comports with a sober scientific treatise, and his vocabulary is rather that of the "street" than of critical science or literature. Nevertheless, his book is well packed with practical information, and is likely to meet with favor among, and prove a real ntility to a class of men whose interest in mines and minerals is chiefly speculative. The chapters on stock companies, stock dealing, stock tricks, and so on, are calculated to increase the wariness of intending investors in mining stocks and properties,

> Magna Charta Stories. Edited by Arthur Gilman. Boston: D. Lothrop & Co. Adozen tales of heroism, told by various writers, with varying merit, intended to stimulate in young people alove of history. The idea is a good one, and the book seems well suited for its purpose.

THOLOGY. By Thomas Bulfinch. Enlarged edition, edited by E. E. Hale. Boston: S. W. Tilton & Co. \$2.50.

popular and useful work, enlarged by many references to the principal literary writings of the thirty years since the work was originally prepared. Nearly twenty recent English writers have thus been drawn upon by the editor, who has also considerably extended the chapters relating to the religions and mythologies of the far East. The admirable plan of Mr. Bulfinch's work Perhas not been changed. The new edition is handsomely printed in large, clear type, the size of the page also having been materially increased.

PUBLICATIONS OF THE WASHBURN OBSERVA TORY OF THE UNIVERSITY OF WISCONSIN. Vol. I. Madison, Wis.: State Printer.

This, the first publication of the Washburn Observatory, contains a description of the buildings and instruments, with several illustrations, records of the first year's work of the Observatory, observations and drawings of the great comet of 1881, and other papers of value.

CHAUTAUQUA SCIENTIFIC DIAGRAMS. Series Lithograph Co.

This series embraces ten large and carefully drawn diagrams, designed to illustrate broadly the actions of water and heat in giving character to the earth's sur-Fair, Alcove 14. New York. Power from 1,000 to 6,000 ft. face, and the varying aspects of the American Continent, and the typical animal and vegetable forms during the great geological periods. The drawings are accompanied by an explanatory text-book, "Easy Lessons in Geology," noticed some weeks ago.

AROUND THE HOUSE. Rhymes by Edward Willett. Illustrations by Charles Kendrick. New York: R. Worthington.

By long odds the most commendable child's book yet made in this country. The verses are bright, rhythmical, and intelligible to American little folk, while the illustrations are artistic and charming. There is a refreshing element of naturalness and honesty about both pictures and verses, with an equally refreshing absence of cant and pretense that cannot fail to make the book as popular with parents as it is sure to be with children.



HINTS TO CORRESPONDENTS. No attention will be paid to communications unles

accompanied with the full name and address of the Names and addresses of correspondents will not be

name the date of the paper and the page, or the number of Paris mixed with a little oxide of zinc, will make a of the question.

reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

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

MENT referred to in these columns may be had at this office. Price 10 cents each.

Correspondents sending samples of minerals, etc., label their specimens so as to avoid error in their identification.

(1) J. K. H. writes: A friend of mine has a Steel Stamps and Pattern Letters. The best made. J. 61/26 horse power engine. Upon starting it the water rose in the boiler, and a friend advised him to put a hydraulic lime is preservative.

For Power & Economy, Alcott's Turbine, Mt.Holly, N. J. | quart of petroleum in the boiler. I desire to have your opinion as to whether it would be advisable to put petroleum in a boiler to settle the water? A. Would not advise you to put petroleum or anything into your boiler but the purest water. Dirty water will make a boiler foam. Probably you started the engine too suddenly, or opened the valve widely, this may have caused a temporary foaming. If the boiler with clean water will not drive the engine steadily at the speed you require without foaming so as throw water into the cylinder, it shows that the boiler is 100 small or you are trying to get too much work from it.

> (2) E. E. T. writes: Can you give me a receipt for making a silver dip? It is used in manufacturing companies where they have a large amount of small brass work to silver, such as eyelets, buttons, corset trimmings, etc., and do not use a battery. A. Dissolve two ounces of nitrate of silver in a quart of water, add a solution of common salt until no more precipitation takes place. Pour off the liquid, wash the precipitate thoroughly, and dissolve it in a solution of cvanide of potassium in five times its bulk of water. Filter the solution, make it up to a gallon by adding water, and it is ready for use. The brass must be quite bright, and allowed to remain in the bath until of sufficiently deep color. The articles are then removed and washed.

> (3) W. M. T. asks what to mix with lamp black to make a plumber's joint to keep the lead in proper place. A. The plumber's black is lamp black, glue, and water. Boil a small piece of glue in water; just enough to make the solution feel sticky between the fingers, then stir in lamp black enough to make it of the consistence of very thin paint when cold. If it should be too stiff when cold for the brush, add more

(4) E. P. B. W. asks for the best way to cut holes one thirty-second to three-eighths of an inch in glass shades or covers. A. If you have many to cut use a diamond drill. A hole can be drilled with a very THE AGE OF FABLE; OR, BEAUTIES OF MY- hard steel drill and turpentine. 2. How to give Bri-En tannia or white metal a brass coating? A. Coating lale. white metal with brass. This can be done by the electro process, using a solution of 21/2 parts sulphate This is a most acceptable edition of Mr. Bulfinch's of copper, 20 parts sulphate of zinc, and 45 parts cyanide of potassium, in 300 parts of water. The anode Battery should be strong. If the brass does not deposit follows: clear and even, start it in a solution of sulphate of copper and cvanide, as the various compositions of white metal do not have as good electric affinity as the cop- D' D.

> (5) A. J. asks: 1. What is parchment paper as used for battery purposes, as described in the Reynier battery in Scientific American of July 22, and where can it be obtained? A. Ordinary paper dipped in dilute sulphuric acid, and well rinsed off with water. May be bought at any chemical or electrical apparatus shop. 2. What principle of construction has been found the most economical for an electric motor, and at the same time the highest? A. See "The Double Induction Motor," No. 25, voi. xlvi., Scientwic American.

(6) C. R. asks if a rotary engine of 3 horse power will drive a hoat 25 feet long, 5 foot beam; and what would be the most economical style and size Then No. 1. Geology. By A. S. Packard, of boiler? What would the size of propeller be? A. It $\frac{E' F \times 2}{3'1416} = A E' = radius of required pulley, Fig. 2.$ hour. A vertical tubular boiler would suit vou best. The size of the screw depends somewhat on draught of water; about 18 inches to 22 inches diameter.

> (7) R. W. N. asks: Can you tell me of some effective substance to put within the double sides of a refrigerator? I would like something light. A. Powdered dry charcoal (not too fine) is best. Dry saw-Powdered dry charcoal (not too fine) is best. Dry sawdust is commonly employed, and answers the purpose $D F + D E \times 2$ $E \times$ very well.

> (8) J. E. B. asks: 1. What will be the Fig. 3. diameter of the air pump (single acting)? A. Air pump 8 in. diameter, if 5 in. stroke. 2. Circulating pump (double acting); the stroke being 5 inches? A. $6\frac{1}{5}$ in. diameter, if 5 in. stroke, if these pumps are worked direct by steam engine. 3. How many square feet of cooling surface for an engine of the compound system (surface condenser), having two cylinders, one rect from the boiler, and expanding in another cylinder what wind-i. e., whether fair, beam, or otherwiseof 17 inches diameter by 10 inch stroke, and then to the condenser; the steam pressure being 100 lb. to the principle? A. If properly rigged, usually on the threesquare inch? A. Condenser 260 to 270 ft. surface.

(9) J. K. T. says, in answer to E. F. B.: have found it to be a curious fact that by putting into a pan of any size, water (cold) two or three inches deep, placing a cloth (any kind) also in bottom of pan or vessel, then placing a glass fruit jar, without any previous preparation, upon the cloth, surrounded slightly by the cold or cool water, he may with impunity fill the can with hot liquid.

hard, white filling, but it cannot be polished like the quality of marble, in the commercial value of Vermont vary. Italian marble ranks the highest in the market.

(11) T. C. H. asks: What will be the size of the smallest hoiler from which I can get six horse should have from 75 to 110 ft. fire or heating surfacethe greater proportion in tubular boilers vertical. 2. Has coal oil been successfully used to generate steam for examination, should be careful to distinctly mark or! for a locomotive? A. We believe coal oil is not yet used economically, but many boilers are run with it in the oil regions, where it has comparatively little value,

(12) B. W. S. asks: Is white lime mortar a preservative for wood and iron? A. No; but

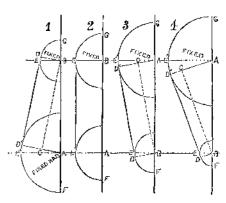
(13) O. B. asks for rules for the construction of symmetrical cone pulleys. A. The following formula, by Rankine & Cooper, for pairs of three pulley cones that are alike, gives good results:

where R' = diam. of large pulley R'' = " small "
$$R'' = 0$$
 in inches. R = " " middle " required C = dist. " centers " Then $\frac{R' + R''}{2} + \frac{(R' - R'')^2}{6.28 \times C} = R$, the diameter of the

middle pulley in inches. Or, in plainerwords, the middle pulley must be made a little larger than the mean of the diameters of the large and small pulleys. Where four or more Pulleys are required, or one cone smaller than the other, the computation becomes more complex, and can be done in the following manner:

First-Compute the speeds required approximately. and make the speed sizes a fixture for one complete cone, and the largest pulley upon the other cone

Then make a diagram as here shown, putting in place



of the word fixed, the semi-diameters in figures of the speed sizes assigned. Beginning with Fig. 1, compute the half belt length.

The dotted line, BC, being parallel with and of the same length as the straight part of the belt for all the pairs, and A B the distance of the centers, which may be marked upon the diagram, all the triangles will be should be two plates of zinc and copper of equal size. found proportional and their relative values found as

> No. 1. A D' - BD = A C. No. 2. $A B^2 - A C^2 = B C = \text{straight part of belt.}$

> No. 3. A B: A C:: A E': D' E' = the lap in excess No. 4. AB: AC: BD: DE = the lap less than

90°. Then

 $\frac{\mathbf{D} \cdot \mathbf{B}}{\mathbf{C} \cdot \mathbf{C}} \times 3.1416 - \mathbf{D} \cdot \mathbf{E} = \mathbf{D} \cdot \mathbf{G}$ $| \cdot | \cdot \mathbf{B} | \mathbf{C}$ above = half $\begin{bmatrix} \mathbf{A}^{\prime} \mathbf{D}^{\prime} \\ -\mathbf{S}^{\prime\prime\prime} \\ \times \mathbf{3}.1416 + \mathbf{D}^{\prime} \mathbf{E}^{\prime} = \mathbf{D}^{\prime} \mathbf{F} \end{bmatrix}$ belt length. For Fig. 2. $\mathbf{E} \ \mathbf{E}' = \mathbf{d}$ istance of centers or straight

part of belt. $\frac{\mathbf{B} \mathbf{E}}{\mathbf{a}} \times 3.1416 = \mathbf{G} \mathbf{E}.$

Half belt length \sim G E E' = E' F.

For Fig. 3. $\frac{A E'}{2} \times 3.1416 = G E'$ Find D' E,' as in Find D' D, as in No. 2, and D E, as in No. 4.

Half belt length $= \underbrace{G E' + D' E' + D' D}_{\text{F}} = D F$ Then

3.1416

For Fig. 4, the same formula as for Fig. 3. The small difference for the curve of the overlap, $\mathbf{D'}~\mathbf{E'}$ may be overlooked in practice.

(14) F. D A. asks: 1. Will you please tell me what part is iron of the iron ores found at Iron Mountain, Mo., and at the other iron mines in the : United States? A. From 32 to 48 per cent iron. Some 9 inch diameter by 10 inch stroke, using the steam di- of the clay ores run as low as 27 per cent. 2. With will a sail boat attain its greatest speed, and on what quarter beam. See "Velocity of Ice boats," in SUPPLE-MENT. No. 214. The same laws apply here.

(15) G. S. asks: 1. How many feet of wire are required for the primary and secondary coils of an induction coil, the current of which is supplied from a single Smee's cell, pint size, so as to give shocks as great as can possibly be borne, and of what size wire? A. Make the core of the coil half an inch in diameter and five inches long, wind it with four layers of No. 20 magnet wire; cover this with two thicknesses of shel-(10) S. C. T. asks: 1. How can I fill up a lacked writing paper, and wind around this about ten or oken place in a marble slab, it to remain perfectly twelve courses of No. 36 silk covered wire. 2. Would We renew our request that correspondents, in referring steady, so as to make the broken place perfectly hard cotton covered wire answer we'l? A. Cotton covered to former answers or articles, will be kind enough to and smooth? A. This, we think, is impossible. Plaster wire will answer, but not as well. 3. Is electro-magnetism affected by the size of a cell or by several? A It depends upon the winding. If wound with coarse wire Correspondents whose inquiries do not appear after marble. 2. Also, give your opinion in regard to the large cells are best adapted to it. 4. Is there any battery more powerful than Grove's, and how is it constructed? and Italian marble. This I wish to settle a question in 'A. No; but the bichromate batteries are more desirable regard to which is the finer, Vermont or Italian marble, on account of the absence of smell. 5. Would thin lead for general use? A. The qualities of these marbles foil answer for a Faure's secondary battery, and could it be charged from a plate ejectrical machine? A. Rather thick lead is to be preferred, say one-sixteenth of an inch thick. It may be charged very feebly by a plate machine. 6. What battery is most suitable for an power? A. Depending upon the kind of boiler, you induction coil? A. For continuous use employ the gravity battery; for occasional use the Grenet answers well. 7. In what proportion does Smee's, Bunsen's, and Leclanche's stand to Grove's battery? A. The electromotive force of the Grove battery is 1.956 volts; Bunsen's, 1'964; Smee's, 1'090 volts; Leclanche, 1'481 volts. (16) F. C. F. asks: 1. The best and easiest

way to polish a violin? Have been using shellac dissolved in alcohol, butdon't like it. It is too much work to apply, and does not give satisfactory results. Is

there any kind of oil that can be added to give more body to the varnish, and at the same time have no in jurious effect on the tone? A. Use best French spiri copal or amber varnish. It is much cheaper and more satisfactory to buy than to attempt making either of these. 2. Also a good stain for staining them so they will look well? Have used extract of logwood, but the color is too red. A. Use a warm solution of one ounce bichromate of potash in a pint of water, and touch up with nitric acid diluted with an et nal volume of water if necessary. 3. Can you give me any information about the cutting of gear wheels for screw cutting lathes? I mean particularly the size of a train for cut ting any particular number of threads to the inch, say for example, twelve threads. What size should they be beginning with one on spindle? How many teeth to each wheel, and what size mesh? Can you refer me to any good work on the subject, one that is easy under stood? A. The makers of lathes arrange the sizes of gears to accommodate the distance between the center of the lathe head and the driving screw. The pitch of the thread on the driving screw must first be decided then the sizes of the train wheels are to be computed by the number of teeth; then the pitch multiplied by the number of teeth gives the diameters. Much judg ment and experience is needed in deciding the pitch or size of the teeth and arranging the best proportion. Would advise you to study the gears on the lathes in a machine shop. See "Notes and Queries," No. 31, page 322, May 20, 1882. Martin on Screw Cutting, and ${\bf Joynson\ on\ Gearing\ are\ good\ works.}$

(17) H. O. T. writes: I would be pleased to have you give the receipt for a paste which is used by binders in making tablets, so that there is no necessity of pasting a strip of paper over the part that is glued together. The paste is colored a high color to suit the taste of the patrons. The tablets are not glued first, only thick paste put on the whole lot to be made, and afterward, when dry, a knife is run through where the tablets are to be parted, making an easy and near looking job? A.. The composition is said to be prepared as follows: Glue, four pounds; glycerine, two pounds linseed oil, half pound; sugar, one-quarter pound; aniline dyes, q. s. to color. The glue is softened by so aking it in a little cold water, then dissolved together with the sugar in the glycerine, by aid of heat over a water bath. To this the dyes are added, after which the oil is well stirred in. It is used hot. Another composition of a somewhat similar nature is prepared as follows: Glue, one pound; glycerine, four ounces; glucose sirup, about two tablespoonfuls; tannin, one-tenth ounce. Give the compositions an hour or more in which to dry or set before cutting or handling the pads.

(18) H. H. H. writes: I am engaged in mak ing artificialice, and on account of alkali and other impurities in the water the ice is not clear. The water is frozen in cans one foot square and three feet long, making a block of ice the same size. The center of the block is not good, owing to the outside freezing first, and the impurities in the water going to the center and freezing last. Now I wish to know what to put in the water to precipitate it that will not make the water taste or be injurious, as the ice is used for a great many purposes. Or, how can I purify the water to make my ice clear? A. It is very difficult to purify water economically so that it may be artificially congealed in clear cakes. Perhaps the most effectually remedy is to boil the water and then filter it through charcoal. Ordinarily no simple addition to or doctoring of the water wil

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

A. G .- 1. Quartz with silver glance. 2. Obsidian .-D. J. C.-Both are fine grained sandstones, and No. 1 would make a fine building material, as it contains but little iron. No. 2 is inferior for this purpose .- J. S. R -No. 1. Quartz, holding a green mass of hornblende. No. 2. Crystals of calcite-carbonate of lime. No. 3 was not large enough to test. No. 4. Carbonate of cop per, malachite, and red oxide of copper, with a small proportion of silicate of copper, crysocolla. No. 5. Mis pickel, sulpho-arseniate of iron-sulphur, arsenic, and iron -C. E. P.-Sample A, Copper pyrites-zinc blende and iron pyrites in quartz, probably contains gold and silver, but not in quantity. An assay would be advisable B, Crystals of chondrodite in granular limestone, of no metallurgical value. C, Crystals of quartz in a quartz gangue, containing gold and possibly silver. An assay will be necessary to determine the amounts. D, Copper pyrites, with malachite in quartz, which holds silver Small unlabeled piece in package with D, chondrodite and rutile on granular limestone (of no value).

[OFFICIAL.]

INDEX OF INVENTIONS

Letters Patent of the United States were Granted in the Week Ending October 24, 1882.

AND EACH REARING THAT DATE.

[Those marked (r) are reissued patents.]

 Fence, composite, T. Rogers
 266,318

 Fence post, movable. S. Gibbs
 266,459

 Fence, wire, E. J. Smith
 266,545

 Fencing, metallic barbed, T. V. Allis
 266,386

 A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued 266,336

266,536

266,536

patent desired and remit to Munn & Co., 261 Broadway. corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866;

but at increased cost, as the specifications not belanging to the printed money. The second of the printed money is a specification of the printed money. The printed money is a specification of the printed money is a specification of the printed money. The printed money is a specification of the printed money is a specification of the printed money. The printed money is a specification of the printed money is a specification of the printed money. The printed money is a specification of the printed money is a specification of the printed money is a specific to the printed, must be copied by hand.

Abrading disk, E. B. Call..... 266,346 Fork. See hay fork. Air cooling and ice making machine, H. F. Star-Air cooling and ice making machine, H. F. Starbuck See Gas burner gauge. Ring gauge. Planter, hand corn, S. W. Hoag See, 326,547 Gas burner gauge, D. M. Small See, 561 Planter, hand corn, S. W. Hoag See, 326,547 Water cooler, I. M. Van Wagner See, 561 Air purifier, P. Breen See, 326,324 Gas engine, P. Munzinger See, 326,269 Plow, Denson & Bell See, 326,269 See, 326,2

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n- it	Annunciators of telephone exchanges, circuit for, C. E. Scribner	266,319	Stamm
·e	Bale tie, D. B. Eastburn		Gate. See Flood gate. Gate post, F. Fogus
of	Band cutter and feeder, G. W. Sharp	266.394	Generator. See Electric generator.
e y	Bath tub, W. W. Rosenfield		Glass for architectural purposes, ornamenting, E. Oudinot
e	Bed bottom, spring, U. Miller	266,497	Glass press, M. Ward 2
p er	Belt, coiled wire, H. C. Root		Gleaning and binding machine, J. F. Mahon 2 Glove, S. Montgomery 2
n	Blast furnaces, cinder car for, J. Kennedy	266,480	Glucose from cactus, manufacture of, W. B.
g t-	Blower for furnaces, vacuum, J. P. Mason	200,510	Brittingham
у,	Boiler. See Locomotive boiler. Boiler and feed steamer, J. H. McCandless	266 495	substances, separating, F. J. O'Farrell
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o o	Bottle stopper and draught nozzle, P. Henrichs Bottles, box for holding and transporting, J. Boe,		Grain drill, Morphew & Withrow
r-	Box. See Packing box. Paper box. Watch	.	Grain meter, G. W. Sharp 2
of er	movement box. Brick press, R. N. Ross		Grain separator for thrashing machines, C. W. Brackett
of	Bridle blinder stay, J. A. Bowdle		Grate. shaking and dumping, W. Swindell
l; d	Burial casket, H. H. Barry	266,578	Guard. See Saw guard.
у	Butter and making the same, artificial, W. H. Burnet		Hame fastener, J. J. Curry 2 Hand rest for penmen, J. Ridge 2
3- or	Butter, coloring compound for artificial, H. Berthold		Handle. See Detachable handle. Harrow, spring tooth, H. Cobb
n.	Butter, making artificial, G. H. Webster	266,568	Harvester and husker, combined corn, A. Mote 2
a	Button fastener, J. H. Robertson		Hay fork, L. Clairmont
ge d	Calk, driving, G. H. Hathorn	266,362	liay press, E. M. & T. S. Low
	Can labeling machine, J. C. Richardson Can opener, W. A. Stoddard		Hay rake, horse, W. H. Hall
o '	Cans, packing, P. Babcock Jr		Heating purposes, adjustable bracket for, J. H. Eager
d	Candle holder, C. Grahner	266,463	Hoe, rake, and other agricultural implements, J.
s- is	Care and opera glass. combined, S. Helfgott Car coupling, W. H. Heaverin		R. Hood 2 Holder. See Candle holder. Lamp globe holder.
	Car coupling, J. D. Perry	266.512	Paper bag holder Thill and tongue holder.
e.	Car coupling, L. Seitz		Watch balance spring holder. Whip holder. Hook. See Snap hook.
ú.	Car coupling, G. Wallenberg	266,563	Horse-hoof pad, W. E. Canedy 2 Horseshoe nail blanks, machine for separating
at∶ ed	Car, railway, C. S. Smith	266,322	and heading, W. F. Durfee
3;	Car, stock, S. W. Remer		Horseshoe nail blanks, machine for trimming and stamping, W. F. Durfee 2
l;	Morris	266,301	Horseshoe nail blanks, machine for beveling and
y∵ er∣	Card, playing, B. Dreyfuss Carding machine, W. E. Whitehead		trimming, W. F. Durfee
a h	Carding machines, rubbing mechanism for, J. Barker		tapering, Durfee & Fowler
11-	Carpenter's plow, F. A. Rappleye	266.519 €	Hub, wheel, G. W. Thomas
ıs	Carriage bow, W. F. Fleharty		Ice machine, T. L. Rankin
ı- h	Carrier. See Trace carrier.		cistern indicator.
n i		266,509	Inhaing and vaporizing apparatus, W. W. Rosenfield
s.	Chains, dog for log, P. Okell	266,505 266,278	Insulator for musical instruments, J. Synar 2 Iron. See Pole iron.
(- 1•	Chandelier, electric light, L. Stieringer	266,550	Jar, A. Luger
is	Checks, machine for making baggage, E. T. Jones,	266,370	Labeling machine. J. C. Richardson
g, of	Cheese knife, M. G. Pettey		Lamp, H. Peigniet
g	Churn, A. B. Ward	266,564	Lamp, electric, C. F. Heinrichs
er	Cigar and cigarette holders and pipes, celluloid,		Lamp, electric arc, J. D. F. Andrews
n er	mouth-piece or bit for, W. Demuth		Lamp, electric incandescent, T. A. Edison 2 Lamp, electric incandescent H. Goebel
y	Clip. See Tug ctip.	200,200	Lamp globe holder, argand, H. W. Hayden 2
у)-	Closet. See Water closet. Clothes wringer, D. B. Piper	266,514	Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller
ır	Clutch, friction, F. O. Deschamps		Last, J. F. McMullett
il y	Coal chutes, slate separater for, Fahringer &		Latch, locking, A. B. Prouty 2
11	Crippen		Life-raft, E. S. Copeman
	Cold by means of anhydrous sulphurous oxide,		Lock, A. B. Prouty
-			Loom, let-off mechanism, Crompton & Wyman
d	Cooler. See Corpse cooler. Water cooler.	966 450	Looms huttle motion, J. Greenway
_	Corpse cooler, Johnson & McMillan	266,294	Mat. See Oil press mat.
1	Corpse cooler, J. C. Sloan		Measure, C. Sangster
ıt	Cotton gin, F. H. Lummus	266,376	son 2
≀ . e.	Coupling. See Car coupling. Hose coupling. Thill coupling.		Meat tenderer, J. Zimmer
3	Crusher. See Quartz crusher.	266,355	Wright
)-]]	Cultivator, W. A. Knowlton		Microphone, C. D. Haskins 2
g-	Cuspidor and similar vessels, A. Stewart Cut-off valve gear, H. Broomell		Middlings purifying machine, H. J. Livergood 2 Mill. See Corn mill. Grinding mill. Roller mill.
d. le	Cutter. See Band cutter. Tobacco cutter.	:	Windmill. Mortising machines, rotary cutter for, W. A.
d	Detachable handle for utensils, F. A. Neider 266,381.	266,382	Decker 2
e. 10	Detector. See Time detector. Door and shutter bolt. R. B. Monroe	266,498	Motion, device for converting rotary into reciprocating, G. A. Fullerton
iO iZ .	Dredge for mining submerged rock, C. W. Town-		Mower, lawn. A. Walsh 2
y !	send		Musical instruments, attachment for mechanical, O. H. Arno
r.	Drill. See Grain drill. Dye baths with dyeing solutions, enriching, C. L.		Musical scale indicator, C. F. Vetter
e :	Klauder	266,481	Night soil from cesspools, pneumatic apparatus
_	Dyeing, bleaching, washing, and drying yarn, etc., apparatus for, W. Maybury		for removing, J. B. Berlier
	Electric cable, P. B. Delany Electric generator, dynamo, Hindley & Buffham,	266,353	Oil press and oil press box, W. Krutzsch
j	Electrical distribution, junction for conductors	1	Organ. reed. Courville & Davis
- 1	of systems of, J. Kruesi		Packing, adjustable piston, L. Herbert
į	Electrical machine, E. Guerin		Packing case, metallic, Blair & Horton
- !	Elevator. See Water elevator.	266,479	Packing, piston rod, C. C. Jerome

afety stop, J. Joi

End gate lock for wagons, J. C. Nelson...... 266,501 Engine. See Gas engine. Traction engine. Engine cross heads, guide for, F. W. Dean....... 266,273

Eyeglasses and spectacles, J. M. Crawford...... 266,436

Faucet, T. Lanston. 266.494
Fence and gate, flood. J. A. Clark. 266.430

Frame. See Quilting frame. Gag runner, M. E. Zeller........

Gas, process of and apparatus for making coal, A. Stamm	
Gas test and pressure gauge, D. M. Small	
Gate post, F. Fogus	266,458
Glass for architectural purposes, ornamenting, E. Oudinot	266,508
Glass press. M. Ward	266,565
Glove, S. Montgomery	266. 299
Brittingham	
substances, separating, F. J. O'Farrell Grain binder, R. Brown	266.504
Grain binder, A. Goodyear Grain drill, Morphew & Withrow	266,284
Grain drill attachment, P. H. Smith Grain meter, G. W. Sharp	266,325
Grain separator for thrashing machines, C. W. Brackett	
Grate. shaking and dumping, W. Swindell Grinding mill, T. W. Beal	400,040
Guard. See Saw guard. Hame fastener, J. J. Curry	
Hand rest for penmen, J. Ridge	266,316
Harrow, spring tooth, H. Cobb	266.302
Hay fork, L. Clairmont	266,429
liay press, E. M. & T. S. Low	266,486 266,288
Heating apparatus, steam. E. F. Osborne Heating purposes, adjustable bracket for, J. H.	266,506
Eager	
R. Holder. See Candle holder. Lamp globe holder.	266,368
Holder. See Candle holder. Lamp globe holder. Paper bag holder. Thill and tongue holder. Watch balance spring holder. Whip holder.	
Hook. See Snap hook. Horse-hoof pad, W. E. Canedy	266,347
Horseshoe nail blanks, machine for separating and heading, W. F. Durfee	
Horseshoe nail blanks, machine for trimming and stamping, W. F. Durfee	266,58
Horseshoe nail blanks, machine for beveling and trimming, W. F. Durfee	266,585
Horseshoe nail blanks, machine for reducing and tapering, Durfee & Fowler	266,586
Hose coupling, T. Götzel	266,400
lce machine, T. L. Rankin	266,312
cistern indicator. Inhaling and vaporizing apparatus, W. W. Rosen-	
field	266,550 266,555
Iron. See Pole iron. Jar, A. Luger	266,37
Knife. See Cheese knife. Pocket knife. Labeling machine. J. C. Richardson	
Lamp, H. Peigniet	266,457
Lamp, electric, C. F. Heinrichs	266,337
Lamp, electric arc, w. P. Freeman	200,400
Lamp, electric incandescent, T. A. Edison	266,447
Lamp, electric incandescent H. Goebel Lamp globe holder, argand, H. W. Hayden	266,447 266,470
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller	266,447 266,358 266,470 266,308
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty	266,447 266,358 266,470 266,308 266,298 266,388
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett	266,447 266,358 266,470 266,308 266,298 266,388 266,388
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller. Last. J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty. Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty. Lock, A. B. Prouty. Lock Companies of the property	266,447 266,356 266,470 266,303 266,296 266,385 266,385 266,345 266,390 266,551
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock, See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Loom shuttle motion, J. Greenway.	266,447 266,356 266,470 266,306 266,296 266,386 266,386 266,386 266,390 266,551 266,361
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism, Crompton & Wyman Loom shuttle motion, J. Greenway Looms, adjustable jack strap for, D. D. Mason Mat. See Oil press mat.	266,447 266,352 266,470 266,803 266,292 266,383 266,343 266,343 266,351 266,361 266,491
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Ander-	266,447 266,353 266,470 266,303 266,296 266,383 266,343 266,351 266,351 266,361 266,491 266,553
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism, Crompton & Wyman Loom shuttle motion, J. Greenway Looms, adjustable jack strap for, D. D. Mason Mat. See Oil press mat. Measure, C. Sangster Meat and vegetable slicing machine, J. W. Anderson Meat tenderer, J. Zimmer	266,447 266,363 266,47(266,303 266,298 266,384 266,384 266,381 266,361 266,361 266,491 266,533
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Life-raft, E. S. Copeman Lock. See End gate lock. Nut lock. Lock, A. B. Prouty. Locomotive boiler, G. S. Strong Loom, let-off mechanism. Crompton & Wyman Looms shuttle motion, J. Greenway. Looms, adjustable jack strap for, D. D. Mason Mat. See Oil press mat. Measure, C. Sangster Meat and vegetable slicing machine, J. W. Anderson Meat tenderer, J. Zimmer Medical compound for rheumatism, etc., E. B. C. Wright.	266,447 266,363 266,47 266,303 266,293 266,383 266,384 266,391 266,351 266,361 266,361 266,537 266,537
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins.	266,447 266,351 266,47(266,301 266,298 266,381 266,341 266,351 266,351 266,351 266,451 266,571 266,571 266,571
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Life-raft, E. S. Copeman Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism. Crompton & Wyman Looms shuttle motion, J. Greenway Looms, adjustable jack strap for, D. D. Mason Mat. See Oil press mat. Measure, C. Sangster Meat and vegetable slicing machine, J. W. Anderson Meat tenderer, J. Zimmer Medical compound for rheumatism, etc., E. B. C. Wright Meter. See Grain meter. Water meter. Microphone, C. D. Haskins Middlings purifying machine, H. J. Livergood Mill. See Corn mill. Grinding mill. Roller mill	266,447 266,351 266,47(266,301 266,298 266,381 266,341 266,351 266,351 266,351 266,451 266,571 266,571 266,571
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A.	266.44°2 266.35'2 266.47°C 266.30'2 266.28'2 266.38'2 266.38'2 266.36'2 266.55'2 266.56'3 266.56'2 266.57'2 266.28'2 266.28'2 266.28'2
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock, See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism, Crompton & Wyman. Looms adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer Medical compound for rheumatism, etc., E. B. C. Wright Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into recip-	266,441 266,351 266,361 266,261 266,261 266,381 266,381 266,36
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last. J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion, J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh.	266,441 266,351 266,371 266,301 266,381 266,381 266,381 266,351 266,351 266,351 266,351 266,351 266,351 266,531 266,531 266,531 266,261 266,261 266,261 266,261 266,261 266,261
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno.	266,44' 266,35' 266,30' 266,30' 266,30' 266,30' 266,38' 266,35' 266,41'
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty. Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Loom shuttle motion, J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical iscale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Sboenail.	266,441 266,351 266,301 266,301 266,302 266,381 266,381 266,382 266,384 266,381 266,381 266,381 266,381 266,381 266,381 266,381 266,481 266,583 266,481 266,583 266,481 266,583 266,481 266,583
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoenail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier.	266,44' 266,35' 266,47' 266,30' 266,30' 266,38' 266,38' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,35' 266,41'
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Looms huttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press and oil press box, W. Krutzsch.	266,412 266,352 266,362 266,381 266,363
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last. J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion, J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Sboe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press and oil press box, W. Krutzsch. Organ. reed. Courville & Dayis.	266.41 266,351 266,351 266,301
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Looms huttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press mat, W. Krutzsch. Organ reed. Courville & Davis. Packing, adjustable piston, L. Herbert.	266,412 266,352 266,362 266,363
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism, Crompton & Wyman. Looms huttle motion, J. Greenway Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier Nut lock, A. D. Holland Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing box, jointed, L. N. Headington. Packing case, metallic, Blair & Horton	266,412 266,352 266,362 266,363
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Müller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoen ail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing box, jointed, L. N. Headington. Packing case, metallic, Blair & Horton Packing, piston rod, C. C. Jerome. Pad. See Ilorse-hoof pad.	266.41 266.39
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last., J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Mett enderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Sboenail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press and oil press box, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington. Packing piston rod, C. C. Jerome. Pad. See Sugar pan. Paper box, F. R. Duck. Paper box, F. R. Duck.	266.41(266,35) 266,35)
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Looms huttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Mill. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing ox, jointed, L. N. Headington. Packing pas, jointed, L. N. Headington. Packing pox, jointed, L. N. Headington. Packing pox, F. R. Duck. Paper boxes, die for cuttingblanksfornecked, M. F. Wilson. Paper bages, sizing for. R. A. Fisner	266.41 266,35 266,39 266,39 266,39 266,36 266,39 266,36 26
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Müller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock. Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoen all. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press mad, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington. Packing case, metallic, Blair & Horton Packing. piston rod, C. C. Jerome Pad. See Ilorse-hoof pad. Pan. See Sugar pan. Paper box, F. R. Duck. Paper boxes, die for cuttingblanksfor necked, M. F. Wilson Paper-makers, sizing for, R. A. Fisher. Paper-makers, sizing for, R. A. Fisher.	266,414 266,352 266,393 266,393 266,36
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington. Packing case, metallic, Blair & Horton Packing case, metallic, Blair & Horton Packing oase, metallic, Blair & Horton Packing plox, F. R. Duck. Paper box, F. R. Duck. Paper boxes, die for cuttingblanksfor necked, M. F. Wilson Paper-maker's use, sizing for, R. A. Fisher.	266.41 266,32 266,38 26
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism, Crompton & Wyman Looms huttle motion, J. Greenway Looms, adjustable jack strap for, D. D. Mason Mat. See Oil press mat. Measure, C. Sangster Meat and vegetable slicing machine, J. W. Anderson Meat tenderer, J. Zimmer Medical compound for rheumatism, etc., E. B. C. Wright Meter. See Grain meter. Water meter. Microphone, C. D. Haskins Middlings purifying machine, H. J. Livergood Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier Nut lock, A. D. Holland Oil press mat, W. Krutzsch Oil press mat, W. Krutzsch Organ. reed. Courville & Davis Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington Packing, piston rod, C. C. Jerome Pad. See Horse-hoof pad. Pan. See Sugar pan Paper bag holder, F. A. Masters Paper bag holder, F. A. Masters Paper bag holder, F. A. Masters Paper barens, sizing for, R. A. Fisner Paper-makers, sizing for, R. A. Fisner Paper-makers use, sizing for, R. A. Fisner Paper-maker	266,441 266,532 266,491 266,577 266,577 266,572 266,573 266,574
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Mett enderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Sboenail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press and oil press box, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington. Packing, niston rod, C. C. Jerome. Packing, siston rod, C. C. Jerome. Packing, siston rod, C. C. Jerome. Packing, siston rod, C. C. Jerome. Packing, piston rod, C. C. Jerome. Packing box, f. R. Duck. Paper boxes, die for cuttingblanksfor necked, M. F. Wilson Paper-maker's use, sizing for, R. A. Fisher. Paper pup from worn-out corsets, etc., manufacturing, A. Patterson. Pen holders or pencils, anti-nervous attachment for, G. A. Duedel. Picture hanging device, D. O. Eshbaugh.	266,441 266,352 266,393 266,364 266,367 266,367 266,573 266,412 266,412 266,414 266,574 266,414
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno. Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing saes, metallic, Blair & Horton. Packing case, metallic, Blair & Horton. Paper box, F. R. Duck. Paper box, F. R. Duck. Paper box, F. R. Duck. Paper pulp from worn-out corsets, etc., manufacturing, A. Patterson. Pen, fountain, S. W. Higgins Paper-maker's use, sizing for, R. A. Fisher. Paper-maker's use, sizing for, R. A. Fi	266.41 266.35 266.39 266.36 26
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism. Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoenail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland Oil press and oil press box, W. Krutzsch. Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington. Packing case, metallic, Blair & Horton Packing case, metallic, Blair & Horton Packing case, metallic, Blair & Horton Packing, piston rod, C. C. Jerome Pad. See Horse-hoof pad. Pan. See Sugar pan. Paper box, F. R. Duck. Paper boxes, die for cuttingblanksfor necked, M. F. Wilson Paper-maker's use, sizing for, R. A. Fisher. Paper-makers in scizing for, R. A. Fisher. Paper-makers machine, C. Parent Paper pup from worn-out corsets, etc., manufacturing, A. Patterson. Pen fountain, S. W. Higgins Pen holders or pencils, anti-nervous attachment for, G. A. Duedel. Pipe. See Ventilating pipe. Planter check row attachment, corn, Benner &	266,441 266,572 266,491 266,491 266,572 266,573 266,573 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,574 266,575 266,574 266,574 266,575 266,574 266,574 266,575 266,57
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Latch, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong. Loom, let-off mechanism, Crompton & Wyman. Loom shuttle motion J. Greenway. Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meat tenderer, J. Zimmer. Medical compound for rheumatism, etc., E. B. C. Wright. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Mover, lawn A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland Oil press and oil press box, W. Krutzsch. Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing box, jointed, L. N. Headington. Packing case, metallic, Blair & Horton Packing case, metallic, Blair & Horton Packing pox, Jointed, L. N. Headington. Packing case, metallic, Blair & Horton Paper-makers, sizing for, R. A. Fisner Paper box, F. R. Duck. Paper boxes, die for cuttingblanksfor necked, M. F. Wilson Paper-makers, sizing for, R. A. Fisner Paper-makers use, sizing for, R. A. Fisner Paper-makers use, sizing for, R. A. Fisner Paper-makers ose, die for cuttingblanksfor necked, M. F. Wilson Paper-makers ose, sizing for, R. A. Fisner Paper-makers use, sizing for, R. A. Fisne	266,412 266,322 266,429 266,577 266,572 266,426 266,572 266,426 266,573 266,426 266,574
Lamp, electric incandescent. H. Goebel Lamp globe holder, argand, H. W. Hayden Lamp globes, apparatus for creating vacuums in incandescent electric, H. J. Miller Last, J. F. McMullett Last, A. B. Prouty Latch, locking, A. B. Prouty Life-raft, E. S. Copeman. Lock. See End gate lock. Nut lock Lock, A. B. Prouty Locomotive boiler, G. S. Strong Loom, let-off mechanism, Crompton & Wyman. Loom shuttle motion J. Greenway Looms, adjustable jack strap for, D. D. Mason. Mat. See Oil press mat. Measure, C. Sangster. Meat and vegetable slicing machine, J. W. Anderson. Meter. See Grain meter. Water meter. Microphone, C. D. Haskins. Middlings purifying machine, H. J. Livergood. Mill. See Corn mill. Grinding mill. Roller mill. Windmill. Mortising machines, rotary cutter for, W. A. Decker. Motion, device for converting rotary into reciprocating, G. A. Fullerton. Mower, lawn. A. Walsh. Musical instruments, attachment for mechanical, O. H. Arno Musical scale indicator, C. F. Vetter. Nail. See Screw nail. Sheet metal nail. Shoe nail. Night soil from cesspools, pneumatic apparatus for removing, J. B. Berlier. Nut lock, A. D. Holland. Oil press mat, W. Krutzsch. Organ. reed. Courville & Davis. Packing, adjustable piston, L. Herbert. Packing oase, metallic, Blair & Horton Packing case, metallic, Blair & Horton Packing oase, metallic, Blair & Horton Packing case, metallic, Blair & Ho	266.412 266.352 266.492 266.492 266.493 266.573 266.573 266.573 266.494 266.594 266.494 266.594 266.494 266.595 266.494 266.595 266.494 266.596 266.494 266.596 266.494 266.596 266.494 266.596 266.494 266.596 266.494 266.596 266.494 266.596 266.494 266.596 266.494 266.596 266.496

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Pocket knife, J. D. Frary	
Pole iron, vehicle, O. Vanorman	
Oil press.	
Propeller for vessels, reciprocating. R. Smith (r). Pump, T. H. Ward	266,566
Pump, force. Simons & Gebott	266.377
Quartz crusher and pulverizer, J. A. Sperry Quilting frame, H. T. Davis	266,581
Quilting frame, T. Goode	266,461 266,536
Railway signal apparatus, J. P. Livermore Railway spike, H. Greer	
Railways. grip for cable, C. W. Rasmusen Reading and writing table, Walter & Dyas	
Refrigerating apparatus, T. L. Rankin	266,391
Roaster. See Coffee roaster. Rocket, P. Cunningham	
Roller mill, W. A. Mahaffy	266,488
Rolling harrow teeth, machine for, J. S. Griffin Rosin percolator, C. C. Tyler	266,465
Sad irons, polishing and waxing board for, Muller & Miller	
Saddle girth, C. Williams	266,571
Saw, drag, C. Sawyer Saw guard, J. G. Groff	266,534
Saw set and clamp, J. W. & J. K. Petty Screw and pipe wrench, W. J. Owen	266,385
Screw cutting machine, J. Barrow	266,339
Semaphore signal, H. F. Cox	
Separator. See Grain separator. Sewing machine. J. B. Price	
Sewing machine, E. T. Thomas 266,553, Sewing machine ruffling attachment, A. L. Smith,	266,544
Sewing machine table, G. A. Rider	
HainSheet metal nail, G. H. Perkins	266,511
Shoe nail, E. L. Wires	
Signal. See Semaphore signal. Singletree. M. D. L. & J. M. Hartley	
Snap hook, G. W. Blake	266,327
Sole leveling machine, O. Gilmore	
Spark arrester, J. W. Budd	
Spirits of great purity directly from the mash, production of, W. H. A. Deininger	
Splint making machine, C. E. Ramus Spooling machine, yarn, L. C. Billings	266,517
Square, try, J. A. Traut	266,556
Stamp stems, etc., fastening for tappets of, P. H. Baker	
Steel, apparatus for handling and heating cast, W. Hainsworth	
Stock detaching device, A. B. Hollingsworth Stone breakers and crushers, screening and as-	266,291
sorting machine for, P. W. Gates	266,282
Stone for veneers. etc., artificial, W. Matt Stove, heating, E. Schöneberg Stove, lime heating foot. P. O. Jenkins	266,393
Stoves and furnaces, device for burning crude oil in, J. F. Irons	
Stoves, gasburnerfor, L. F. Betts	266,413
Morrell	266,300
Swing and chair, convertible. G. W. Mason	
Switch. See Telephone switch. Table. See Reading and writing table. Sewing	
machine table. Tank. See Water closet supply tank.	
Telegraphs, perforator for automatic printing, A. F. & F. B. Johnson	
Telephone, battery, L. Jacobson Telephone central office system and apparatus,	
Breckenridge & Duxbury Telephone exchange system, C. E. Scribner	266,321
Telephone exchanges, multiple switch board for, Haskins & Wilson	266, 287
Telephone, magneto, T. A. Watson	266.374
Telephone switch board and pneumatic signal therefor, C. E. Scribner	266,320
Telephonic receiver and automatic circuit, breaker, combined, W. C. Eckert et al	266,277
Thill and tongue holder, W. B. McFail	
Thill coupling, P. Schneider Thill support, W. C. Wood	266,410
Thrashing and separating machine, P. Kaufmann, Thrashing machine, G. Stringer	
Tie. See Bale tie. Tiles, manufacture of, L. J. Walker	266,562
Timber with antiseptics, apparatus for treating, J. W. Putnam	266,516
Time detector, watchman's, G. F. Ransom Tire upsetting machine, S. H. Raymond	266,518 266,313
Tobacco cutter, R. A. Burnett	266,345
Tongue support wagon, M. Conrad	266,431
for the manufacture of, A. G. Hurlbutt Trace carrier, D. B. Cooley	266,477
Trace carrier, M. E. Zeller	266,574
Traction engine, A. O. Frick	266,456
Trap. See Waste or sewer trap.	200,02 0
Tree. See Singletree. Trunk catch, C. P. Gould	266,285
	266.357
Umbrellas, etc., rib-tip retainer for, R. A. Fisher, Yacuum apparatus, T. A. Edison	266,588
Valve. vent, Gordon & Hobbs	266,462 266.527
Ventilating pipe and cowl. J. Cooper	266.546
Vise, M. T. Henson	266,474 266,523
Wagon wrench S. O'Connell	266,503
Warping and beaming machine, J. Walmsley, 266.330.	

Watch movement box, I. W. Arnold...... 266.265

Water closet and urinal, G. E. Waring, Jr $\, \dots \,$, $\,$ 266,405