### Business and Personal.

The charge for Insertion under this head is One Dollar a line for each insertion about eight words to a line. Adverlisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

For Sale-One Payne engine and boiler. Automatic cut-off. In first class order. But little us Davis, Rochester, N. Y.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. 6 Spindle Turret Drill Presses. A.D. Quint, Hartford, Ct. 2d hand drills and shapers. Amer. Tool Co., Clev., O. Mixing machinery. J. H. Day & Co., Cincinnati, Ohio, For pile driving engines. J. S. Mundy, Newark, N. J. Portable and Stationary Cylinder Boring machines.

Pedrick & Ayer, Philadelphia, Pa. Wanted-Second-hand Woodward Pumps. P. O. Box

60, N. Y. City. Wanted-2d hand Nash gas engine, 1 H. P. 2d hand Gar

lathe, small size. W. K. R., Drawer 442, N. O., La, Steam Hammers, Improved Hydraulic Jacks, and Tube

Expanders. R. Dudgeon, 24 Columbia St., New York. Screw machines, milling machines, and drill presses The Garvin Mach. Co., Laight and Canal Sts., New York.

Centrifugal Pumps. Capacity, 100 to 40,000 gals. per minute. All sizes in stock. Irvin Van Wie, Syracuse, N.Y. Patent for sale or partner wanted. Leuzinger clothes line pulley, patent, May 12, 1891. For description, see

Wanted-2 steam jacket kettles, 35 to 70 gallons each, lower drain. G. W. Hoffman, 69 E. Wash. St., Indian-

Guild & Garrison, Brooklyn, N. Y., manufacture steam pumps, vacuum pumps, vacuum apparatus, air pumps acid blowers, filter press pumps, etc.

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

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 361 Broadway, N.Y. Competent persons who desire agencies for a new popular book, of ready sale, with handsome profit, may apply to Munn & Co., Scientific American office, 361 Broadway, New York.

Magic Lanterns and Stereopticons of all prices. Views illustrating every subject for public exhibitions, etc A profitable lusiness for a man with small capital Also lanterns for home amusement. 220 page catalogue free. McAllister, Optician, 49 Nassau St., N. Y.

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HINTS TO CORRESPONDENTS

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should

give date of paper and page or number of question.

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

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

expected without remuneration.

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

Books referred to promptly supplied on receipt of

Minerals sent for examination should be distinctly marked or labeled.

(4007) M. L. asks: 1. What is a good charge for tin assays? A. Tin ore 5 grammes, potassium cyanide in powder 25 grammes. Besides this the crucible is lined with a layer of the cyanide, and the charge is covered with the same. Fuse and keep fused poisons known, but this gives about the best results of any of the fire assays. A non-poisonous charge is: Tinore 5 grammes, charcoal 1 gramme (mixed with the ore), 12.5 to 15 grammes black flux, 1 to 1.25 grammes horax glass. Cover with salt and a small piece of coal. Fuse three-quarters to one hour. 2. Is it possible for mercury to soak through a copper plate in a mill so as to ooze out in drops underneath? A. Yes. 3. Why are old plates so valuable? A. On account of the precious metal they retain. 4. It is stated that horse power will be furnished (or can be) over the distance from the Niagara to Chicago for about half the cost of steam power. Is this true? A. The exact proportion cannot be given. The interest on the installation and cost of maintenance will probably make it impossible. 5. What size current is necessary and how is it used to remove superfluous hair by electrolysis? See our Sup-PLEMENT, Nos. 176, 353, 834.

(4008) A. E. G. writes: In the SCIEN TIFIC AMERICAN for August 1, Professor Henry Rowland is quoted as saying "the voltage of stroke of lightning is roughly estimated at about 6,000,000,000 What is the amperage of a stroke as nearly as may be judged by a similar estimate? A. Carl Hering, in his "Dynamo-Electric Machines," says that the E. M. F. of lightning is 3.560,000 volts, and the current is about 14,000,000 amperes. The energy is estimated to be equal to a 100 horse hower engine working 10 hours. 2. Where can I learn the rome sol-fa notation or system of writing music? I would like to buy a book to learn it from. A. In most schools where music is taught. 3. As the patent laws are now, can any one make a patented artic, 3 or machine, if they make it themselves and use it exclusively for their own benefit, without becountry hable for infringement? A. No. 4. How is the carbon deposited on carbon paper? A. It is applied with a brush or sponge, the carbon or other pigment being mixed with glycerin or vaselin, with a mixture of beeswax and oil or some similar medium, 5, when a metallic spring is compressed it contains latent energy, representing the power expended in compressmg it. If it is dissolved in acid while still in a compressed state, what becomes of the latent mechanical

energy it contained? A. The energy expended in compression is given out in heat, which is dissipated

(4009) L. M. C. asks (1) how to make a storage battery suitable to run a 1/2 or 1/4 candle power electric light in a necktie and small enough to carry in a coat pocket? If this subject has been discussed in any of your papers, will you please refer me to such? A. We expect to publish a description of a storage bat tery suited to your purpose at an early date. 2. What is the fluid used in those "electric inhaler" bottles! Consist of a small bottle with a screw top, and a piece of copper separated from a piece of zinc by a strip of flannel. The fluid completes it. When placed near the nostrils a strange sensation is felt, extending to the back of the head. A. Oil of mustard is the principal ingredient. 3. Is there any acidproof paste, that can be mixed like coment and will harden in a few minutes? A. For weak acids use oxide of zinc and a solution of chloride of zinc. Chloride of zinc is poisonous, but the cement is inert after hardening and washing. For strong acids melt together pitch 1 part, resiu 1 part, and plaster of Paris 1 part; all the ingredients must be drv. 4. Will you please tell me how to compute the quantity of wire required to get the greatest magnetism out of a bar of soft iron? A. For this information we refer you to Sloane's "Arithmetic of Electricity," \$1, and Thompson's " Electro-magnets," \$6, by mail.

(4010) Subscriber wishes to know the following: At his place of business there is a 20 horse electric motor, 500 volts. The writer while thoughtlessly adjusting brushes caught hold of all the lower brushes and pressed them upward, this having the desired effect. He also took hold of the upper set and was quickly thrown backward. Now what amount of current passed through me, the machine running a load of about 12 horse power? After catching hold of brushes I felt nothing except the after effect, which was a slight shaking of the hand and a slight soreness of finger ends. A. It is impossible to form any idea from the data sent as to the amount of current passing through your body, as it is wholly a question of resistance. The condition of your hands may have been such as to have prevented anything more than a small fraction of the current from passing through you. For instance your hands may have been very dry or very oily. On the other hand, your hands may have been moist and the contact with the brushes good, in which case you would have received the amount of current due to the normal resistance of your body, which would have been only a fraction of the output of the machine.

(4011) H. W. G. asks how to construct steel triangle to be used in lieu of a bell. I want it with sides from 3 to 4 ft. long. Please state what kind of steel to use? What shape, whether square or round? Proper form of construction, and should angles be bent sharp or rounding? How should it be hung, and with what should it be struck to obtain the best sound? I am informed that to strike a bell with wrought iron will ruin the bell. Is this true, and would the same effect be produced upon a triangle by use of a similar striker? A. For a steel triangle with sides as stated, use a square bar of tool steel one inch diameter and from 10 to 12 feet long. Balance the bar in two loops of strong twine about one-third of its length from each end. Strike the bar between the end and one of the strings. Move both strings toward the center a little at a time to get the tone that suits you, and when the proper bearings are found, mark them with chalk and bend to a triangle at the marked points with an easy bend. A wrought iron hammer would not injure a trian gle more than a hammer of any other metal.

(4012) J. E. H. writes: I wish to make a storage hattery. Battery is to have 10 plates 6 inches long and 8 inches wide; plates are to be of lead onetwelfth inch thick marked in squares of one-eighth inch, with holes punched at each corner of squares and cov ered with a coating of red lead paste made by mixing red lead with diluted sulphuric acid. In what proportions with water will I dilute the sulphuric acid? A. Use 1 part of acid to 10 of water. 2. About how much current will such a battery yield for three hours working constantly, after being charged? A. About 20 for 10 minutes. The cyanide is one of the worst amperes. 3. How many gravity batteries should I use in forming the plates and afterward in charging the battery? I only wish to use storage battery once in two days. The zinc and copper of the primary battery each has an active surface of about 18 square inches Sulphate of copper and sulphate of zinc are used in charging the cells. A. The forming as well as the charging may be done with four cells. The forming however could be facilitated by the use of four times that number.

### Replies to Enquiries.

The following replies relate to enquiries recently published in Scientific American, and to the number therein given:

(3889) Referring to Notes and Queries No. 3889, C. E. H. has no cause for alarm, as the milky appearance in the water from his hot water boiler is caused by a foaming from the air it contains. This is readily shown by drawing a tumblerful and holding it up to the light, when it will be seen that the water clears from the bottom, and what appear to the eye to be white particles rises instead of falls.-W. G. BLISH,-[It is well known that the vesicles of air and steam rise in theclearing of water drawn from the hot water faucet. This does not account for the sediment that settles from hot water drawn from a galvanized iron boiler. This goes to the bottom every time.-ED.]

C. A. G. asks for a black ink. -J. H. G. asks for an acid-proof cement for nickel-plating tanks .-- L. B. asks for a receipt to give a steel-blue on brass.-A. O. asks for a receipt for fining wine .- T. M. asks how to make and ink typewriter ribbons.-A. C. G. asks for a cement or mucilage to stick labels to tin.-C. W. F. asks for a stain for Russian tan shoes .- G. E. P. asks for a good bay rum and sea foam.-G. F. L. asks for pastes for mounting photographs.-F. C. C. asks how to make a dipping solution for silvering.

Answers to all of the above queries will be found in the "Scientific American Cyclopedia of Receipts, Notes and Queries." to which our correspondents are referred. The advertisement of this book is printed in another column. A new circular is now ready

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	Invalid and center table, combined, W. Kohl- stetde.  Iron ore, composition of matter and process of preparing comminuted, G. Conkling.  Ironing machine, H. E. Smith. 488 366.	468,112 468,219 468,267
	Invalid and center table, combined, W. Kohl- stetde.  Iron ore, composition of matter and process of preparing commitmed, G. Conking.  Ironing machine, H. E. Smith.  488,266.  Ironing table, B. F. Mellott.  Jigging machine, R. Kennedy.	468,112 468,219 468,267 467,944 468,111
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jigging machine, R. Kennedy. Joint. See Rail Joint.	468,219 468,267 467,944 468,111
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jigging machine, R. Kennedy. Joint. See Rail Joint.	468,219 468,267 467,944 468,111
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitch & Bigelow. Key seatcutting machine, M. Morton. Kiln. See Brick kiln. Drying kiln.	468,219 468,267 467,944 468,111 468,298 468,072 468,212 467,956
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling.  Ironing machine, H. E. Smith	468,219 468,267 467,944 468,111 468,298 468,072 468,212 467,956 468,137
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling.  Ironing machine, H. E. Smith	468,219 468,267 467,944 468,111 468,298 468,072 468,212 467,956 468,137 467,907 11,221
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling.  Ironing machine, H. E. Smith	468,219 468,267 467,944 468,111 468,298 468,072 468,212 467,956 468,137 467,907 11,221
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling.  Ironing machine, H. E. Smith	468,219 468,267 467,944 468,111 468,298 468,072 468,212 467,956 468,137 467,907 11,221
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith	468,219 468,267 467,944 468,111 468,298 468,072 467,956 468,137 467,907 11,221 467,983 467,958 467,958 467,958 467,958 467,958
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith	468, 219 468, 267 467, 944 468, 111 468, 298 468, 072 468, 212 467, 956 468, 137 11, 221 467, 982 467, 983 467, 975 468, 088 468, 089 468, 040 468, 183
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kkinn. See Brick kin. Drying kiln. Knitting and forming bose, F. W. Simons. Knitting machine, dr cular, Scott & Williams. Knitting machine, troular, Scott & Williams. Knitting machine, troular, Scott & Williams. Knitting machines, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r) Lamp, incandescent electric, D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latck, E. G. W. Shellenback. Lock. See Gun lock. Nut lock.	468,219 468,267 467,944 468,111 468,298 468,072 467,956 467,956 467,956 467,956 467,956 467,956 467,956 467,956 468,087 468,088 468,088 468,088 468,040 468,040 468,040
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kkinn. See Brick kin. Drying kiln. Knitting and forming bose, F. W. Simons. Knitting machine, dr cular, Scott & Williams. Knitting machine, troular, Scott & Williams. Knitting machine, troular, Scott & Williams. Knitting machines, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r) Lamp, incandescent electric, D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latck, E. G. W. Shellenback. Lock. See Gun lock. Nut lock.	468, 219 468, 267 467, 944 468, 111 468, 298 468, 107 467, 926 467, 956 467, 983 467, 983 467, 983 467, 983 467, 983 468, 188 468, 188 468 468, 188 468, 188 468, 188 468, 188 468, 188 468, 188 468, 188
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r). Lamp, incandescent, etc., D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp, swick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Cooper. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Lounge, folding or bed, T. Q. Hall. Lubricant, J. Ketchum	468,219 468,267 467,944 468,111 468,298 468,072 467,956 468,137 467,982 467,983 467,983 467,983 467,983 467,983 467,983 467,983 468,040 468,040 468,163 468,16
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r). Lamp, incandescent, etc., D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp, swick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Cooper. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Lounge, folding or bed, T. Q. Hall. Lubricant, J. Ketchum	468,219 468,267 467,944 468,111 468,298 468,072 467,956 468,137 467,982 467,983 467,983 467,983 467,983 467,983 467,983 467,983 468,040 468,040 468,163 468,16
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r). Lamp, incandescent, etc., D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp, swick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Cooper. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Lounge, folding or bed, T. Q. Hall. Lubricant, J. Ketchum	468,219 468,267 467,944 468,111 468,298 468,072 467,956 468,137 467,982 467,983 467,983 467,983 467,983 467,983 467,983 467,983 468,040 468,040 468,163 468,16
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r). Lamp, incandescent, etc., D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp, swick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Cooper. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Lounge, folding or bed, T. Q. Hall. Lubricant, J. Ketchum	468,219 468,267 467,944 468,111 468,298 468,072 467,956 468,137 467,982 467,983 467,983 467,983 467,983 467,983 467,983 467,983 468,040 468,040 468,163 468,16
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kkiln. See Brick kiln. Drying kiln. Knitting and forming bose, F. W. Simons. Knitting machine, dr cular, Scott & Williams. Knitting machine, dr cular, Scott & Williams. Knitting machine, dr cular, Scott & Williams. Knitting machine, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r). Lamp, incandescent electric, D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp, swick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Cooper. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locometive driver brake, J. E. Normand. Locometive driver brake, J. E. Normand. Locometives, spark arrester for, C. Cooper. Lounge, folding or bed, T. Q. Hall. Lubricator, F. Prinz. Mattress, spring, G. W. Murray. Measurer rotary, R. F. Gillin. Measurer and bagger, grain, G. Anderson. Meter. See Gas meter. Milk aerator and cooler, combined, R. Wherry.	488,219 488,287 488,211 488,218 488,219 488,287 488,111 488,238 488,072 487,344 488,137 487,344 488,137 487,345 487,345 487,347,345 487,345 487,345 487,345 487,345 487,345 487,345 487,345 48
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jigging machine, R. Kennedy. Joint. See Rail-Joint. Joint and metallic cylinder and producing the same, White & Bigelow. Ky seat cutting machine, M. Morton. Kill. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, drcular, Bcott & Williams. Knitting stockings, W. Esty (r) Lamp, incandescent electric, D. H. Piffard. Lamp, oll spray, A. Shedlock. Lamp, socket, incandescent, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, W. L. Silvey. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Latch, A. Didion. Latch, A. Didion. Latch, A. Didion. Latch, A. Didion. Latch, G. Balgher. Lock case, L. Luger. Locomotive driver brake, J. E. Normand. Lubricator, E. D. Bangs. Lubricator, F. Prinz. Matress, spring, G. W. Murray. Measurer and bagger, grain, G. Anderson. Measuring instrument and current direction indicator, clectrical J. J. Wood. Mechanical movement, S. B. Wortmann Meter. See Gas meter. Milk acrator and cooler, combined, R. Wherry.	488,219 488,287 448,311 468,288 468,072 468,212 467,394 468,111 1221 11,221 11,221 11,221 11,221 11,221 11,221 467,326 468,137 467,957 467,957 468,060 468,137 468,060 468,137 468,060 468,137 468,060 468,138 468,138
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail-Joint. Joint and metallic cylinder and producing the same, Whitc. & Bigelow. Kcy seatcutting machine, M. Morton. Kkiln. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dr. cular, Scott & Williams. Knitting machine web bolder, Paxton & O'Neill. Knitting machine, transfer device for, W. H. Knitting machines, transfer device for, W. H. Knitting stockings, W. Esty (r). Lamp, incandescent, electric, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, W. I. Silvey. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last. A. Didion. Last. A. Didion. Latch, A. Didion. Latch, A. Didion. Latch, Cock. See Gun lock. Nut lock. Lock. See Gun lock. Nut lock. Lock case, L. Luger. Loom, F. J. Gallagher. Loome, F. J. Gallagher. Lubricator, F. Prinz. Lubricator, F. Pinz. Mattress, spring, G. W. Murray. Measure, rotary, R. F. Gillin. Measurer and bagger, grain, G. Anderson. Measuring instrument annurrent direction indicators are seed of the committed of	488,219 488,287 488,219 488,287 488,111 488,288 488,072 487,344 488,137 487,344 488,137 487,345 487,345 487,347,345 487,345 487,345 487,345 487,345 487,345 487,345 487,345 48
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jirging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machines, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r) Lamp, incandescent, et al. Lamp, incandescent, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, W. L. Silvey. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Luger. Locomotive driver brake, J. E. Normand. Locomotives, spark arrester for, C. Cooper. Loome, T. J. Gellagher. Lounge, folding or bed, T. Q. Hall. Lubricator, F. Prinz. Mattress, spring, G. W. Murray Measure, rotary, R. F. Gillin. Measuring instrument and current direction indicator, electrical, J. J. Wood. Mechanical movement, S. B. Wortmann. Meter. See Gas meter. Mulli See Saw mill. Mills aerstor and cooler, combined, R. Wherry. Mills aerstor and cooler. Raiway motor. Spring motor. Waver lawn, T. T. Wood.	488,219 488,287 488,211 488,288 468,072 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,213 488,071
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jirging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machines, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r) Lamp, incandescent, et al. Lamp, incandescent, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, W. L. Silvey. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Luger. Locomotive driver brake, J. E. Normand. Locomotives, spark arrester for, C. Cooper. Loome, T. J. Gellagher. Lounge, folding or bed, T. Q. Hall. Lubricator, F. Prinz. Mattress, spring, G. W. Murray Measure, rotary, R. F. Gillin. Measuring instrument and current direction indicator, electrical, J. J. Wood. Mechanical movement, S. B. Wortmann. Meter. See Gas meter. Mulli See Saw mill. Mills aerstor and cooler, combined, R. Wherry. Mills aerstor and cooler. Raiway motor. Spring motor. Waver lawn, T. T. Wood.	488,219 488,284 488,101 488,219 488,285 488,201 488,219 488,287 488,111 488,288 488,072 488,212 467,564 488,171 488,288 488,107 488,123 488,12
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail-Joint. Joint and metallic cylinder and producing the same. White & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose. F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machines, transfer device for, W. H. Alimy. Lamp, oil spray, A. Shedlock. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, W. H. Silvey. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, See Gun lock. Nut lock. Lock case, L. Luger. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotives, spark arrester for, C. Cooper. Loom, F. J. Gellagher. Lounge, folding or bed, T. Q. Hall. Lubricator, E. D. Bangs. Mattress, spring, G. W. Murray. Measurer and bagger, grain, G. Anderson. Measuring instrument and current direction indicator, electrical, J. J. Wood. Mechanical movement, S. B. Wortmann. Meter. See Gas meter. Mill. See Saw mill. Mine shafts, electric signal for, F. W. Bacorn. Moulding artides in sand, machine for, J. For bes. Motor. See Electric motor. Railway motor. Spring motor. Water motor. Mowing machine, R. Goodrich.	488,219 488,287 488,211 488,288 468,072 488,212 488,212 488,212 488,213 477,971 477,971 477,977 477 477 477 477 477 477 477 477 477
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail Joint. Joint and metallic cylinder and producing the same, White & Bigelow. Key seatcutting machine, M. Morton. Kiln. See Brick kiln. Drying kiln. Knitting and forming bose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, dircular, Scott & Williams. Knitting machine, transfer device for, W. H. Almy Knitting stockings, W. Esty (r). Lamp, incandescent, electric, D. H. Piffard. Lamp, oil spray, A. Shedlock. Lamp, oil spray, A. Shedlock. Lamp socket, incandescent, D. H. Piffard. Lamp, swick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last, E. S. Morton. Last, A. Didlon. Lathe, engine, P. & W. Shellenback. Lock Case, L. Luger. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locometive driver brake, J. E. Normand. Locometive, Spark arrester for, C. Cooper. Lounge, folding or bed, T. Q. Hall. Lubricator, F. Prinz. Mattress, spring, G. W. Murray. Messure, rotary, R. F. Gillin. Messurer and bagger, grain, G. Anderson. Messurer and bagger is sand, machine of, J. Forbes. Mouling articles in sand, machine of, J. Forbes. Mouling articles in sand, machine of, J. Forbes. Mover, lawn, T. T. Wood. Mowing machine, L. Q. J. Mundelin. Nut lock, B. Edgar. Nut shearing and nunching machine. J. Altmann. Nut shearing and nunching machine. J. Altmann.	488,219 488,287 4467,944 468,111 468,288 468,072 468,121 467,944 468,173 468,121 467,944 468,173 467,945 468,173 467,945 468,173 467,945 468,173 468,1
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith	488,219 488,287 488,211 488,288 468,072 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,213 488,071 488,071 488,081
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail joint. Joint and metallic cylinder and producing the same, Whitc & Bigelow. Kcy seatcutting machine, M. Morton. Kilin. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, dircular, Scott & Williams. Knitting machines, transfer device for, W. H. Almy. Knitting stockings, W. Esty (r) Lamp, incandescent, etc., D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, D. H. Piffard. Lamp socket, incandescent, W. L. Silvey. Lamps, wick raising mechanism for, W. A. Hull. Last, E. S. Morton. Last block fastener, E. S. Morton. Latch, A. Didlon. Latch, A. Didlon. Latch, A. Didlon. Latch, C. Didlon. Latch, S. Williams. Locomotive driver brake, J. E. Normand. Locomotive driver brake, J. E. Normand. Locomotives, spark arrester for, C. Cooper. Loome, F. J. Gallagher. Lounge, folding or bed, T. Q. Hall. Lubricator, F. Prinz. Mattress, spring, G. W. Murray. Measure, rotary, R. F. Gillin. Measuring instrument and current direction indicator, electrical, J. J. Wood. Mechanical movement, S. B. Wortmann. Meter. See Gas meter. Mills aerstor and cooler, combined, R. Wherry. Mills aerstor and punching. L. J. Mundelin. Nose ringer, F. C. Goodrich. Nut lock, B. Edgar. Nut shearing and punching machine, J. Altmann. Oil can spoult and stopper, J. C. & A. S. Ley. Oils, decolorizing vegetable, Hartley & Blenkin-	488,219 488,287 488,211 488,288 468,072 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,212 488,213 488,071 488,071 488,081
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail-Joint. Joint and metallic cylinder and producing the same, White & Bigelow. Key seatcutting machine, M. Morton. Killn. See Brick kiln. Drying kiln. Kiltn. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, di crular, Scott & Williams. Knitting machine, see bolder, Paxton & O'Neill. Knitting stockings, W. Esty (r) Lamp, incandescent, electric, D. H. Piffard. Lamp, incandescent, electric, D. H. Piffard. Lamp, oll apray, A. Shedlock. Lamp socket, incandescent, W. I. Silvey. Lamp wek raising mechanism for, W. A. Hull. Last, E. S. Metton. Latch A. Didlock Assteer, E. S. Morton. Latch A. Didlock of the Company of the	488,219 488,287 4467,944 468,111 468,288 468,072 468,121 467,944 468,173 468,121 467,944 468,173 467,945 468,173 467,945 468,173 467,945 468,173 468,1
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith. Ironing table, B. F. Mellott. Jicging machine, R. Kennedy. Joint. See Rail-Joint. Joint and metallic cylinder and producing the same, White & Bigelow. Key seatcutting machine, M. Morton. Killn. See Brick kiln. Drying kiln. Kiltn. See Brick kiln. Drying kiln. Knitting and forming hose, F. W. Simons. Knitting machine, di crular, Scott & Williams. Knitting machine, see bolder, Paxton & O'Neill. Knitting stockings, W. Esty (r) Lamp, incandescent, electric, D. H. Piffard. Lamp, incandescent, electric, D. H. Piffard. Lamp, oll apray, A. Shedlock. Lamp socket, incandescent, W. I. Silvey. Lamp wek raising mechanism for, W. A. Hull. Last, E. S. Metton. Latch A. Didlock Assteer, E. S. Morton. Latch A. Didlock of the Company of the	488,219 488,21
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith	488,219 488,227 488,211 488,288 468,072 488,212 488,213 478,977 477 477 477 477 477 477 477 477 477
	Iron ore, composition of matter and process of preparing comminuted, G. Conkling. Ironing machine, H. E. Smith	488,219 488,227 488,211 488,288 468,072 488,212 488,213 478,977 477 477 477 477 477 477 477 477 477
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Valve, G. F. Pottle	468,305 468,143
Valve device and vessel support, combined, J. A. Henry	468,041
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Hultgren	468,044
Vehicle spring, E. H. Booth  Vehicle two-wheeled delivery, M. B. Boone.	468,234
Veneer cutting machine, W. Schrader Ventilating curtain fixture, J. Q. A. Sand	468,307 468,286
Vessels, draught indicator for, R. C. Pringle Vise, hand, F. J. Tomek	467,996 468,000
Wagon, dumping, A. E. Lawrence	467,939 467,959
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Moreland	. 468,204 . 467,976
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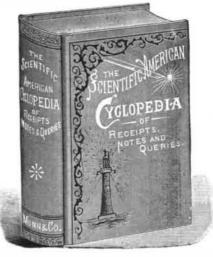
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