

#### HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our

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 This is for our information and not for publication.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

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

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of

Ninerals sent for examination should be distinctly marked or labeled.

(2959) A. G. B. asks: 1. Please give receipt for cleaning gilt picture frames. A. Wash with cold water and Castile soap or with beer. 2. A receipt to enamel a zinc bath tub. A. Use ordinary paint or one of the enamels advertised by manufacturers. 3. How to clean a galvanized boiler. A. Use sand and воар.

(2960) S. D. L. asks a receipt for making cotton orany kind of cloth waterproof. A. Apply par affin with a hot iron.

(2961) C. E. S. asks for receipts for making stencil inks in cakes-black, blue, green, and red. A. Mix the coloring matter, lampblack, Prussian blue, chrome green, or vermilion, with an equal part of gum arabic and enough glycerine to give the desired consistency. For black use 1 part lampblack and 2 parts Prussian blue.

(2962) B. O. G. asks how liquid glue is made. A. Dissolve 8 ounces best glue in 1/2 pint of Add slowly 2% ounces strong nitric acid (36° Baume), stirring all the while. After effervescence ceases, cool and bottle. Or simply dissolve glue in ace-

(2963) A. F. B. asks: 1. What is fluoride of ammonium, and what are its uses? A. A compound of ammonium and fluorine, NH4 Fl. It is used in analyzing siliceous minerals, and is also of use in etching glass. 2. How can calcium chloride that has been used for drying gases be put in condition for use again? A. By heating with occasional stirring until dry and pulverulent, or by pushing the heating to fusion, pouring into a shallow vessel, and breaking up into pieces 5. Does 2000 volts mean anything as a danger, unles mention is made of its associated amperage? Is it a proper use of electrical terms to say, "I have taken a charge of 100,000 volts, but the current amperage was so small that it didn't hurt me"? A. It means something, but the associated amperage cannot be stated, as it will vary with the resistance of the person and with the ma ture of the connection between his person, the wire, and the earth. We would amend the statement to read "I have taken a discharge of 100,000 volts difference of potential," etc.

(2964) B. B. asks how fresh butter can best be prepared to enable it to stand a twenty-four hours' journey in a hot climate and to preserve it sweet and fresh. A. Various methods are given. One method is to heat the butter to 180° Fah., and keep it melted, skimming it from time to time until perfectly clear. It is then poured off into another vessel and cooled as rapidly as possible by surrounding the vessel with ice or cold water. Another way is to cover the butter in its vessel with half an inch of salt packed down, and cover. A little water may be added.

(2965) W. B. G. asks: I have a letter written in camp in 1863 which I desire to keep, but which is badly faded; some parts of it are so dim it is hardly readable, and I write to ask if you can tell me what I can use to prevent further fading and also to 1e store what is now so dim. I am very anxious to preserve the letter and will be thankful if you can tell me how to do so. A. We would suggest dipping the letter in a solution of tannic acid. Instead of doing this you might photograph it. This might bring out the faded parts in the photographic print.

(2966) G. P. Y. says that listerine has proved in his case to be a remedy for dandruff. To be used on the head full strength daily for a week, and after that once a week

(2967) G. L. B. asks if there is any process that will deodorize castor oil, i. e., take away its disagreeable and nauseous taste. Is there any work on the subject of deodorizing oils? A. Castoroil can be taken in disguised form by mixture with effervescent There are no books devoted to the specific subject you mention. It is treated of in various works on oils, their chemistry, etc.

(2968) C. A. S. asks: Does gasoline gas when generated by heat or otherwise return back to gasolene when under pressure? And if so, what will prevent it? A. It is a question of proper heating. If heated to a high enough temperature, the gas formed will be reasonably permanent, and will only condense at low temperatures. The limitation to heating is the formation of lampblack.

(2969) L. S. W. asks for information concerning the manufacture of chewing gum. A. Take of balsam tolu 4 ounces, white resin 16 ounces, sheep suet 11/2 ounces more or less and melt together. Of above mixture take 2 ounces, white sugar 1 ounce, oatmeal 3 ounces. Soften and mix on a water bath. Roll the pieces in finely powdered sugar or flour to form sticks, etc., as desired. Paraffin with a little olive oil and glycerine may be melted together for a chewing gum. The exact mixture will vary with the season.

(2970) C. C. asks: 1. Is nickel sufficiently magnetic to be attracted by an ordinary fixed magnet or an electromagnet? If so, how powerful must

the magnet be? A. Any magnet will attract nickel. 2. What metal is non-magnetic and sufficiently hard to resist abrasion like steel,? Is phosphor bronze suitable ? A. Phosphor bronze or bell metal. 3. Are dynamos with slow speed as efficient as rapid ones? A. Yes. 4. Is there any gearing suitable for reducing speed from dynamos besides cog wheels, friction gearing or belts ? A. It may be done by hydraulic or pneumatic devices. 5. Is ordinary friction gearing considered as efficient as cog wheels? A. This depends upon the use to which the gearing is applied. Cog gearing has the advantage of being positive. 6. Can you give the composition of the Le Page glue sold in every hardware store? A. Le Page's glue is a patented article. It is made by desalt. ing, cleaning, and bleaching fish stock in solutions of soda salts, then boiling in water impregnated with borax, then expressing and filtering the glue, and after ward evaporating it through a vacuum coil.

(2971) B. L. asks (1) directions for making and charging a Leyden jar. A. For directions for making a Leyden jar we refer you to SUPPLEMENT, No. 279. 2. What size of Leclanche cell would be necessary to give an electromotive force of 12 volts? A. Nine Leclanche cells will give an E. M.F. of a little more than 12 volts. This battery has an E.M.F. of 1'47 volts per cell. 3. Can I magnetize a bar of steel 1/2 an inch by 11/2 and a foot long with an electric light dynamo? If so, how? A. Harden your bar at the ends and draw to a dark straw color and place it in a suitable coil connected with the dynamo. The proportions of the coi will depend on the kind of current generated by the dy

(2972) J. L. M. asks: 1. Can the porous cup of Leclanche cell be cleaned after use for some time? Will boiling do any good? A. Soaking the porous cup in warm Water will clean it. 2. What would make a crucible for melting copper in small quantity A. You cannot readily make crucibles. Better pur chase them. They cost only a few cents each.

(2973) W. R. B. asks: Can you give me the ingredients of any composition used by fire eaters to wash their hands and mouths with? A. A very strong solution of alum is recommended, and also a dilute so lution of sulphuric acid. This is for the hands. The mouth is best untreated. By the use of fusible alloys the effect of taking melted lead into the mouth is pro duced.

(2974) H. L. F. asks: Can you tell me of any harmless preparation, and where procured, that can be used to stain the face and hands dark brown o as near the color of sunburn as possible? Something that will be lasting. A. Nothing that is lasting can be recommended. Dilute permanganate of potash solution or extract of green walnut hulls are the best. Ascer tain the strength by trial upon the arm.

(2975) E. W. G. asks: 1. Is glucose as used in the manufacture of candy injurious to health when eaten? If so, why? A. Probably not. 2. How is the commercial glucose of this country generally made, from what materials? A. By treating starch with dilute acid.

#### TO INVENTORS.

An experience of forty years, and the preparation of nore than one hundred thousand applications for pa tents at home and abroad, enable us to understand the laws and practice on both continents, and to possess un equaled facilities for procuring patents everywhere. synopsis of the patent laws of the United States and al foreign countries may be had on application, and person contemplating the securing of patents, either at home o abroad, are invited to write to this office for prices which are low, in accordance with the times and our ex tensive facilities for conducting the business. Addres MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broad

#### INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

April 7, 1891,

### AND EACH BEARING THAT DATE

(See note at end of list about copies of these patents.)

Alarm. See Fire alarm.

J	AIRIM. See File alaim.	
ı	Ammeter or voltmeter, H. C. Shubert	449,766
1	Animai trap, J. T. T. Kisinger	449,857
ı	Ash pan, S. B. Dexter. Axle cap, carriage, Wastell & Day Axle, car, Lyon & Sproul. Axle skein for vehicles, L. L. Tapp.	450.005
١	Axie cap, carriage, wastell & Day	449,180
1	Avia skain for vahicles I. I. Tann	449 979
ł	Rug fastening E Oldenbusch	440 012
ı	Bag fastening, E. Oldenbusch Bar. See Finger bar.	770,012
1	Basin fixture, il. Pietsch	450.034
1	Basins or baths, supply connection for, E. Ham-	200,002
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ł	Basket, W. H. Snow	450.113
1	Basket mould, W. H. Snow	450,114
١	Bearing, ball, G. F. Simonds	449,968
ı	Bed, folding, J. B. Anderson.	449,892
ı	Bee hive, W. D. Pennock Beer, device for drawing steam, C. Harth	449,760
ı	Beer, device for drawing steam, C. Harth	449,800
ı	Bell, A. F. Stanley	440,002
ı	Bell, ringer, machanical, G. J. Gollmar	440,000
ı	Belt, tennis, E. W. Whittaker	450.050
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1	Blower, fan, F. F. Landis Board. See Switch board. Wash board. Boats, row lock for, J, Williams	449.743
١	Board. See Switch board. Wash board.	,
ı	Boats, row lock for, J, Williams	449,787
ı	Boiler. See Steam boiler. Wash boiler.	•
ı	Boiler cleaner, R. P. Faries	449,671
1	Boiler for generating steam, B. Ford	449,735
١	Boiler. See Steam boiler. Wash boiler. Boiler cleaner, R. P. Faries. Boiler for generating steam. B. Ford. Bolting screen, T. & G. M. Parkinson.	449,913
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	Books, binding, H. L. Arnold	450 194
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ı	Bracket. See Shade bracket.	
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	Building, portable, L. D. Jones	449 035
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	Button piercing machine, pearl. J. Cleret	450.056
	Buttons, machine for the manufacture of pearl.	
	J. Cleret. Cable crossing apparatus, E. Werner	450,095
	Cable crossing apparatus, E. Werner	449,985
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13	Ironing machine, N. A. Ransom.  Jack, W. Jackson	449,702 449,937
19	Journal bearing, I. Hazelton. Journal bearing, H. H. Thorp	419,935 449,837
10	Iron. See Sad Iron. Ironing machine, N. A. Ransom. Jack, W. Jackson Journal bearing, M. Daley Journal bearing, H. Hazelton. Journal bearing, H. H. Thorp Journal bearing, anti-friction. M. A. Andrews Keyhole guard, H. G. H. Reed. Knitting machine stripping mechanism, C. M. Musgrove. Knob. H. A. Matthews Knob. door, W. H. Taylor. Ladder, self-raising, B. H. Burling. Ladder, step A. Dormitzer Lamp, O. 8 weeney. Lamp, o. 8 weeney. Lamp for street lighting, electric, H. H. Carpenter.	449,893 449,917
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07 01	Thom Mechanical movement, Winland & McSherry, Metai post, O. B. Hall Metallic composition, making, E. J. Rollings. Meter. See Water meter.	450,122 449,777
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17 78 40 09 54 54 87 88 87	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton Pea huller, H. B. Babbitt Pencil sharpener, W. S. Boyd. Pepsin, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster or composition casts, mould for making, L. Nanion.	449.670 450,054 449,739 450,051 449,839 449,839 449,933 450,075 450,019 450,026
17 78 40 94 54 87 95 88	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post. See Metal post.	449.670 450.054 449.739 450.061 449.839 449.839 449.933 450.075 450.026 449.945 449.978 449.791 449.791
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17 78 40 95 95 95 95 95 95 95 95 95 95 95 95 95	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post See Metal post. Post office lock box, M. Jackson. Pott. See Metal post. Post office lock box, M. Jackson. Pott. See Paste pot. Pottato digger, J. F. Fowler Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. L. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, K. Martin. Rack. See Huy rack. Radiator sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway syinal, automatic, C. W. Wilhelm. Railway, pole for overhead systems of electric, J.	449,870 449,870 449,734 449,734 449,733 449,832 449,832 449,832 449,832 449,832 449,832 449,834 449,844 449,844 449,844 449,844 449,844 449,844 449,844 449,844 449,84
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17 78 440 0944 554 875 545 687	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post office lock box, M. Jackson. Pot. See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, serse, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. L. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, E. Martin. Rack. See Husy rack. Radiator, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway swinal, automatic, C. W. Wilhelm. Railway swinal, automatic, C. W. Wilhelm. Railway syiranis, spoeumatic signal for, G. A. Boyden. Railway strains, spoeumatic signal for, G. A. Boyden. Regulator. See Draught regulator. Speed regulator. Recuster. See Counting register. Regulator. See Draught regulator. Speed regulator. Resister. See Counting register. Revisiter, Groming, I. G. Platt. Rivets, forming, I. G. Platt. Rivets, forming, I. G. Platt. Rotary steam engine, J. E. Sackett. Rotler. See Land roller.	49,570 49,570 49,570 49,781 49,783
17 78 40 0 93 44 5 4 5 8 7 5 8 9 5 9 7 9 2 9 9 9 2 8 8 9 7 9 5 6 9 7 9 2 9 9 9 2 8 8 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post office lock box, M. Jackson. Pot. See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, serse, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. L. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, E. Martin. Rack. See Husy rack. Radiator, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway swinal, automatic, C. W. Wilhelm. Railway swinal, automatic, C. W. Wilhelm. Railway syiranis, spoeumatic signal for, G. A. Boyden. Railway strains, spoeumatic signal for, G. A. Boyden. Regulator. See Draught regulator. Speed regulator. Recuster. See Counting register. Regulator. See Draught regulator. Speed regulator. Resister. See Counting register. Revisiter, Groming, I. G. Platt. Rivets, forming, I. G. Platt. Rivets, forming, I. G. Platt. Rotary steam engine, J. E. Sackett. Rotler. See Land roller.	49,570 49,570 49,570 49,781 49,783
17	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post office lock box, M. Jackson. Pot. See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, serse, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. L. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, E. Martin. Rack. See Husy rack. Radiator, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway swinal, automatic, C. W. Wilhelm. Railway swinal, automatic, C. W. Wilhelm. Railway syiranis, spoeumatic signal for, G. A. Boyden. Railway strains, spoeumatic signal for, G. A. Boyden. Regulator. See Draught regulator. Speed regulator. Recuster. See Counting register. Regulator. See Draught regulator. Speed regulator. Resister. See Counting register. Revisiter, Groming, I. G. Platt. Rivets, forming, I. G. Platt. Rivets, forming, I. G. Platt. Rotary steam engine, J. E. Sackett. Rotler. See Land roller.	49,570 49,570 49,570 49,781 49,783
17 8440 0944 49 97656 5982 294 99 97656 5982 294	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, serse, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. J. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, K. Martin. Rack. See Hay rack. Radiator sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway syinal, automatic, C. W. Wilhelm. Railway spinal, automatic, C. W. Wilhelm. Rai	449,670 449,733 449,734 449,738
17 8440 0944 49 97656 5982 294 99 97656 5982 294	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, serse, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. J. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, K. Martin. Rack. See Hay rack. Radiator sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway syinal, automatic, C. W. Wilhelm. Railway spinal, automatic, C. W. Wilhelm. Rai	449,670 449,733 449,734 449,738
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17 8440 0944 49 97656 5982 294 99 97656 5982 294	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, serse, M. G. Pool. Propeller, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. J. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Quilting frame, K. Martin. Rack. See Hay rack. Radiator sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway syinal, automatic, C. W. Wilhelm. Railway spinal, automatic, C. W. Wilhelm. Rai	449,670 449,733 449,734 449,738
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17 78 40 094 54 87 68 78 78 78 78 78 78 78 78 78 78 78 78 78	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepslin, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, sessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Puller, W. L. Hall. Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, K. Martin. Rack. See Hay rack. Radiagor sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway spiral, antomatic, C. W. Wilhelm Railway spirals, pneumatic signal for, G. A. Boy- Railway spirals, pneumatic signal for, G. A. Boy- Railways, three-rail track for cable, C. Vogel. Railway strains, pneumatic signal for, G. A. Boy- Railways, three-rail track for cable, C. Vogel. Railway, three-rail track	49,570 49,770 49
17 2840 05454 28758875445 4 295825224 28858224 313438 0 6661768219 63 52 8666 1335 5488 4 29582524 28858240 481194 66681768219 63 52 8666 1335 5488 4 295825 8 501114: 55008178533240 481194 57	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepslin, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, sessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Puller, W. L. Hall. Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, K. Martin. Rack. See Hay rack. Radiagor sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway spiral, antomatic, C. W. Wilhelm Railway spirals, pneumatic signal for, G. A. Boy- Railway spirals, pneumatic signal for, G. A. Boy- Railways, three-rail track for cable, C. Vogel. Railway strains, pneumatic signal for, G. A. Boy- Railways, three-rail track for cable, C. Vogel. Railway, three-rail track	49,570 49,770 49
17 78 40 094 54 87 68 87 68 78 29 99 99 99 99 99 99 99 99 99 99 99 99	Paste pot, H. Denney, Pavement, concrete, P. M. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsln, preparing, J. L. Webber. Photographic shutters, instantaneous, Dalimeyer & Beauchamp. Piano, A. Graff. Pillow sham holder. W. Johnston. Planter, corn, J. Kleihauer, Jr. Plaster orcomposition casts, mould for making, L. Naplon. Plow, J. G. Hunt. Pocketbook, A. Y. Andrews. Pocketbook, F. Lieker. Post office lock box, M. Jackson. Pot. See Metal post. Post office lock box, M. Jackson. Pot. See Paste pot. Potato digger, J. F. Fowler. Printer's chase, W. P. Harding. Printing presses, feed gauge for, E. L. Megill. Propeller, screw, M. G. Pool. Propeller, screw, M. G. Pool. Propeller, screw, M. G. Pool. Propeller, sesel. O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. L. Hall. Pump, sand, J. Braden. Puzzle, J. E. Jackson. Ouliting frame. E. Martin. Rack. See Husy rack. Radiagor, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, E. M. Hunter. Railway, electric, E. M. Hunter. Railway, siznal, automatic, C. W. Wilhelm. Railway syiranls, apneumatic signal for, G. A. Boyden. Railway syiranls, antomatic, C. W. Wilhelm. Railway syiranls, apneumatic signal for, G. A. Boyden. Railway syiranls, apneumatic signal for, G. A. Boyden. Railway syiranls, apneumatic signal for, G. A. Boyden. Regulator. See Draught regulator. Speed regulator. Regulator. See Draught regulator. Regulator. See Counting register. Roller and seed sower, combined, T. A. Butler. Sad fron. E. G. Asmus. Sad iron, W. C. Dibmock. Sasah balance, A. Tingalls. Sash pastener, E. D. Bangs. Sash victerer, E. D. Bangs. Sash window, A. Rudolph. Saw gauge, R. P. K. Vary. Saw guard, gang, K. Dolen. Saw guide, W. A. Campbell. Saw guide, W. A. Campbell. Saw guide,	49,570 49,570 49,781 49,872 49,782 49,783 49,882 49,882 49,883 49

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Smoke consumer, J. Player Spap hook, Buckingham & Yeates	449,827 449.870	
Smoke consumer, J. Player Snap hook, Buckingham & Yeates Soldering 1001, H. Beutelspacher Spark arrester, E. J. Hadlock Speculum, J. E. Lee	450,094 450,012 449 941	Ī
Speed regulator, A. B. Morse	449,688	В
Spine, C. E. Seymour Spindle bands, take-up device for, T. Walker Spool for textile machinery, J. E. Phillips	449,705 449,810 449,914	a ti
Spike, C. E. Seymour. Spindle bands, take-up device for, T. Walker Spool for textile machinery, J. E. Phillips Spring. See Vehicle spring. Stairs, metallic corner for, L. A. Howell Stamp actuated by electro-magnets, time, W. B.	450,102	re
Martindale Stamp, hand printing, R. H. Smith. Stanchion for ships, J. H. Bell Staple fastening machine, R. H. Little.	449,759 449,831	=
Staple fastening machine, R. H. Little Steam boiler, Vogt & Burns	449,779 449,922	Į
Steam boiler, Vogt & Burns Steel, crucible for the manufacture of, G. Nimmo Steel, process of and apparatus for hardening hollowarticles of, H. A. Brustlein	449,598	,
hollow articles of, H. A. Brustlein	449, <b>5</b> 25 449, <b>6</b> 89	1
Stools of chairs, vertically-adjustable seat to, A. Nauts. Stopper. See Bottle stopper. Stove, E. B. Colby. Stove, air heating, J. B. Oldershaw. Stove, gas, P. J. Grin berg. Stove leg attachment, J. B. Morse. Stove or range, C. V. Roberts. Stump puller, W. B. Morris. Sugar, apparatus for lixiviating, C. Steffen.	449,929 449,691	-
Stove, gas, P. J. Grin berg Stove leg attachment, J. B. Morse Stove or range, C. V. Roberts	449,776 449,819 449,918	-
Sugar from succharing materials unnurating for		Ī
extracting. G. E. Patrick	449,747	e
Switch board electrical, J. B. Lyon.  Syringes, piston for, A. Molinari.  Tack driving machine, M. G. Mains  Taning, process of and composition for, C. B.	449,685 449,883	<b>a</b> :
Tack driving machine, M. G. Mains. Tanning, process of and composition for, C. B. Warrand	450,027	
Telegraphy, F. Anderson Telegraphy, R. G. Brown	449,899 449,655 449,897	
Warrand Tea kettle, J. L. Clark Telegraphy, F. Anderson Telegraphy, R. G. Brown Telephony, multiple, W. W. Jacques Thermal gauge, tracklayer's, P. H. Fontaine. Thrashing machine cutter and feeder, J. Eagleston	449,679 4 <b>50</b> ,06 <b>5</b>	
ton Thrashing machine feeding device, J. P. Monnett Tidy holder W G. Browne	450,098 450,084 449,898	
ton.  Thrashing machine feeding device, J. P. Monnett Tidy holder, W. G. Browne Tire for vehicle wheels, A. W. Thomas (r)  Tool holder, L. B. Nielsen  Tool holder, L. B. Nielsen	11,155 450,031	
Toy, E. P. Roberts Toy bank, registering. Headley & Horton	449,748 450,071	1
Tool holder, L. B. Nielsen Tower and mast, F. L. Butler Toy, E. P. Roberts Toy bank, registering, Headley & Horton Toy detonator, A. L. Seymour Toy pistol, T. C. Murray Toy swing, D. L. Keeler Track clearer and lubricator, T. J. King Track clearing and lubricating device, T. J. King, Train signal, Finn & Garner Transom lifter, O. Jund. Trap. See Animal trap.	449,781 449,938	
Track clearer and lubricator, T. J. King. Track clearing and lubricating device, T. J. King. Train signal, Finn & Garner	449,855 449,672	F
Musicipals I Contain	450 001	I a
Truss, J. A. Rector. Truss, J. A. Rector. Tubs, mould for cement wash, J. Moore Tug clip, hame, G. D. Stulken Tug, thill, J. S. Hurley. Twines, etc., machine for the manufacture of, W. H. Avis. Type mould. Mitchell & Milne	449,866 449,884 449,714	le 1
Twines, etc., machine for the manufacture of, W. H. Avis	449,906	-
Type mould, witchell & Milne.  Typewriting machine, T. Oliver.  Typewriting machines, electrical, E. F. Youngs	450,08:3 450,107 449,923	P
H. Avis Type mould, Mitchell & Milne Typewriting machine, T. Oliver Typewriting machines, electrical, E. F. Youngs Typewriting machines, type cleaning brush for, Y. Van Fleet Umbrella, T. J. Thorp	450,126 449.716	ii
waste and water pipe J. R. Whiting Valve controller, electric, G. E. Turner	449,989 449,889	
Valve mechanism for carbonic acid gas generators, F. J. Johnston Valve, steam actuated, J. H. Baker Vebicle brake, automatic, A. F. Geerge Vehicle, spring, H. W. Pell Vehicle, spring, H. Timken Vebicles, metallic end for, E. K. Bumpass Vending machine, A. W. Roovers Veterinary surgical instrument, J. W. Mullen Vise, C. Wies Wagon dump and elevator, J. S. Kidd. Wagon trains, connectien for, W. H. Thurman Waistband, F. Spitz	450,076 449,868	
Vehicle brake, automatic, A. F. George Vehicle, spring, H. W. Pell Vehicle spring, H. Timken	449,695 449,717	
Vebicles, metallic end for, E. K. Bumpass	419,664 449,749 450.086	-
Vise, C. Wies. Wagon dump and elevator, J. S. Kidd. Wagon trains, connection for, W. H. Thurman	419,987 449,680 449,980	ı
Waistband, F. Spitz Wall paper, sales rack for, W. H. Eastman Walls or ceilings, device for securing fixtures to,	449,710 449,734	1
Wagon trains, connection for, W. II. Thurman Waistband, F. Spitz Wall paper, sales rack for, W. H. Eastman Walls or ceilings, device for securing fixtures to, T. Wrigley. Washboard, C. II. Smith. Wash boiler, C. H. Fitzgerald. Washer. See Dish washer. Washing machine, W. J. Bennington. Washing machine, W. H. Parker. Washing machine, K. F. Polk Washing machine, E. F. Polk Washing preparation, E. F. Halleck. Watch bow fastener, C. F. Morrill. Watch, stop, L. E. Piguet. Ward Ward Ward Ward Ward Ward closet tanks, operating valve in, W. H. Ward	450,127 449,972 450,0 <b>64</b>	
Washer. See Dish washer. Washing machine, W. J. Bennington Washing machine, W. H. Parker	449,995	
Washing machine, K. F. Polk Washing machine, Tacket & Raddas Washing preparation, R. F. Halleck	449,834 449,879	
Watch bow fastener, C. F. Morrill.  Watch, stop, L. E. Piguet.  Water closet tanks operating valve in W. H.	449,885 449,915	ľ
Ward Water closet tanks, water supply apparatus for,	449,770	
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Well, tubular, Cameron & Chapman  Wheel. See Car wheel.  Wiek raison R. P. Luce	449,771	ı
Wick raiser, B. P. Luce. Windmill, H. Noone. Window frame, Mesker & Arbegust	449,744 450,082	
Wire stretcher, Springer & Jackson Wood polishing machine, J. E. Carpenter Wood polishing machine, J. L. Perry.	. 450,022 . 449,803	. t
Wood polishing machine, J. E. Carpenter Wrench. See Monkey wrench.	449,697	
Wrench. See Monkey wrench. Wrench, C. H. Driver. Wrench, A. C. Whittier. Wringer. See Clothes wringer.	. 449,722	
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DESIGNS.  Advertising card, W. H. Spahr	20,663	ļ
Advertising card, W. H. Spahr. Carpet button or fastener, stair, D. Walker. Cracker, etc., E. C. Pearson. Handle for spoons, etc., G. & B. W. Gooding. Spoon, E. C. Baumgras. Spoon, A. J. Dempsey. Spoot, etc. J. H. Johnston.	20,662 20,664	
Spoon, A. J. Dempsey	20,665 20,668	

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Spoon, A. J. Dempsey	20.66
Sugar bowl, etc., G. L. Crowell, Jr	20,667
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Weighing machine case, H. E. Patterson	20,600

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Georgia	10 207
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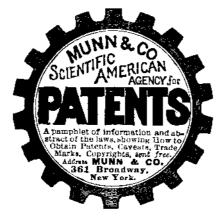
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