

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 This is for our information and not for publication.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 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 Alarm. See Fire alarm. 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 dynamo 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 a 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 o 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 o 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 mak ing 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 necessar, to give an electromotive force of 12 volts? A. Nine Le clanche 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 pe cell. 3. Can I magnetize a bar of steel 1/2 an inch b 11/2 and a foot long with an electric light dynamo? I so, how? A. Harden your bar at the ends and draw t 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 som 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 pu 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 alloyed 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, tha 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 b recommended. Dilute permanganate of potash solutio 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 a used in the manufacture of candy injurious to healt when eaten? If so, why? A. Probably not. 2. How is the commercial glucose of this country generall 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 p tents at home and abroad, enable us to understand th 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 a foreign countries may be had on application, and person contemplating the securing of patents, either at home of abroad, are invited to write to this office for price which are low, in accordance with the times and our ex tensive facilities for conducting the business. Address 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.

1	AIRIM. See File alaim.	
1	Ammeter or voltmeter, H. C. Shubert	449,766
ı	Animal trap, J. T. T. Kisinger	449,857
ı	Ash pan, S. B. Dexter	450.005
1	Axle cap, carriage, Wastell & Day	449,786
1	Ash pan, S. B. Dexter. Axle cap, carriage, Wastell & Day Axle, car, Lyon & Sproul. Axle skein for vehicles, L. L. Tapp.	449,684
J	Axie skein for venicles, L. L. Tapp	449.979
1	Bag fastening, E. Oldenbusch Bar. See Finger bar.	449,912
1	Dar. See Finger Dar.	450.024
1	Basin fixture, il. Pietsch	400,004
1	mann	449,880
1	Rocket W H Snow 450 119	450 119
4	Basket, W. H. Snow	450 114
1	Bearing, ball, G. F. Simonds	449 968
1	Red. folding, J. R. Anderson	449.892
1	Bee hive, W. D. Pennock	449.760
ı	Beer, device for drawing steam, C. Harth	449,853
ı	Bell. A. F. Stanley	449.832
١	Bell, A. F. Stanley	449.866
ı	Bell, ringer, machanical, G. J. Gollmar	449.904
1	Belt, tennis, E. W. Whittaker	450,050
1	Block. See Paving block.	
1	Blower, fan, F. F. Landis Board. See Switch board. Wash board. Boats, row lock for, J, Williams	449,743
1	Board. See Switch board. Wash board.	
1	Boats, row lock for, J. Williams	449,787
1	Boiler. See Steam boiler. Wash boiler.	440.001
ı	Boiler. See Steam boiler. Wash boiler. Boiler cleaner, R. P. Faries. Boiler for generating steam. B. Ford. Bolting screen, T. & G. M. Parkinson.	449,011
1	Politing serson T & C M . Parkingon	440 012
	Book case, revolving, H. C. Andross	449 657
	Books hinding H. I. Arnold	449 751
	Books, binding, H. L. Arnold Books, etc., storage case for, H. J. Hoffman	450.124
	Boots or shoes, outer soling welted, M. L. Keith	449.882
	Bottle stopper, W. Painter Box. See Letter box. Post office lock box.	449,822
	Box. See Letter box. Post office lock box.	
1	Box fastener, W. Beck	449,811
ı	Bracket. See Shade bracket.	
	Brake. See Vehicle brake.	4.0.054
	Brick for tile machines, die for, G. D. Herrold	449,854
	Broom holder, G. Townsend	449,982
	Brush, R. Schulz Brush and making the same, A. H. Wolcott	450,042
	Buckle, W. E. Smith	450 110
1	Ruckle suspender D Linny	444 688
S.	Buckle, suspender, D. Lippy Buckle, suspender, C. Schwartz	449,951
,	Building, portable, L. D. Jones	449,035
١	Rutton & M Hall	450 000
	Button clasp, C. La Dow	449,940
	Button cutting apparatus, pearl, J. Cleret	450,057
	Button clasp, C. La Dow.  Button cutting apparatus, pearl, J. Cleret.  Button piercing machine, pearl, J. Cleret	450,056
	I Buffons, machine for the manufacture of pearl.	
	J. Cleret. Cable crossing apparatus, E. Werner	450,095
l	Capie crossing apparatus, E. Werner	449,985
:	Can. See Milk can. Candy mould S. E. Ball	000 0447
	Canu) mound, o. B. Dan	F342,003

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ı. ]	Canvas stretcher frame, C. Vay. Car coupling, A. G. Canada. Car coupling, Genese & Schmidt. Car coupling, G. C. Harris. Car coupling, D. C. Harris. Car coupling, B. P. Kinney. Car coupling, H. E. Moomaw. Car coupling, H. H. Moomaw. Car coupling, J. H. Priestley Car coupling, F. W. Smith. Car coupling, M. L. Strother. Car coupling, M. L. Strother. Car coupling, M. L. Strother. Car door, R. W. Thickins. Car, electric motor, H. P. Brown. Car, passenger, G. T. Howard. Car stop ping device, electric, G. W. Bianchard. Car wheel, W. A. Pearson. Cars, propelling mechanism for electric motor, S. H. Short. Cars, stropelling mechanism for electric motor, S. Cars, stropelling mechanism for electric motor, S. Cars, safety attachment for railway, R. M. Smith.	449,875 449,928	Hot Hull
?	Car coupling, Genesa & Schmidt	449.876 450.015	Ice c Incai Incui
8	Car coupling, H. B. Moomaw Car coupling, J. H. Priestley	450,085 449,8 <b>6</b> 5	Inde
n ?	Car coupling, M. L. Strother. Car coupling, B. D. Tungate.	449.713 449.718	Inse
8.	Car, electric motor, H. P. Brown Car, passenger, G. T. Howard	449,752 450.073	Insul Iron. Ironi
h	Car wheel, W. A. Pearson Cars, propelling mechanism for electric motor, S.	449,813	Jack Jour Jour
<b>^</b>	Cons stall partition for stools P C Hicks	410 740	Jour Jour Keyl
t.	Care, trolley support for electric, Robinson & Lander Cars, vestibule hood for, T. A. Bissell Carriage, H. P. Wells Carrier, See Fence wire spool carrier. Cart, dumping, F. Weber Case. See Book case. Casting, J. A. Potter	449,886 449,896	Knit Knol Knol
of h	Carriage, H. P. Wells. Carrier. See Fence wire spool carrier. Cart, dum ping, F. Weber	449,841	Ladd Ladd
Г-	Case. See Book case. Casting, J. A. Potter. Centrifuxal cleaner. L. Wommer. Chain, driving, C. H. Brampton. Chair. See Railway Chair.	449.701 449.788	Lam Lam Lam
or			Lam Lam
٥.	Clasp. See Button clasp. Cleaner. See Boiler cleaner. Centrifugal cleaner.		Land Lant Last,
y 2-	Clip. See Tug clip.		Lath Leat Lens
n er	DrakeClothes wringer, M. N. Lovell	450,028 450,080 450,029	Lette Leve Life
f	Coffee, collecting the aromatic and volatile substances from, N. L. Le Turcq des Rosiers Coffee roaster, O. Hammarstrom	449.758 449.850	Ligh Ligh F
n-	Colter clearer, D. Demers	449.669 449,924	Lino Lino
il 7-	ing secret, M. A. Wier. Commutator for electric motors, H. Duenner Composition of matter, G. W. Abell	449.723 449,774 449,653	Liqu Load Lock N
18	Closet. See Cremating closet. Cloth shearing or cropping machine, Martin & Drake.  Drake. Clothes wringer, M. N. Lovell. Clothes wringer, W. P. Mason. Ceffee, collecting the aromatic and volatile substances from. N. L. Le Turcq des Rosiers. Coffee roaster, O. Hammarstrom. Coffee roaster, D. Demers. Combination lock, W. C. Young. Communications, device for forming a deciphering secret, M. A. Wier. Computator for electric motors, H. Duenner. Composition of matter, G. W. Abell. Confectioners' use, separating and filling machine for, N. A. Clacher. Cooler. See Milk cooler. Copy nolder, J. B. Hammond. Corn conveyer, W. Riedel.	449,668	Lock Lock Lock
ie ie	Copy nolder, J. B. Hammond.  Corn conveyer, W. Riedel.  Cosmetic, remedial, P. Rion.	449.934 449,703 450.038	Loon
ld ?	Counting register, C. J. Root	450,039	Loor Lubi Meas
r-	Culinary or other vessels, handle attachment for, M. Roberts	449,807 450,101	Mech
е	Cut-out, A. T. Tregurtha.  Decorative relief material, manufacture of, L. Enricht	449,874	Meta Meta Meta Milk
to	Cooler. See Milk cooler. Copy nolder, J. B. Hammond. Corn conveyer, W. Riedel. Cosmetic, remedial, P. Rion. Counting register (C. J. Root. Coupling. See Car coupling. Hose coupling. Cremating closet, I. D. Smead. M. Roberts. Cut-out, J. S. Gibbs. Cut-out, J. S. Gibbs. Cut-out, A. T. Tregurtha. Decorative relief material, manufacture of, L. Enricht. Decider of the coupling of the	449,848 449,847 450,032	Milk Mill. Mill
o- ne	Digger. See Potato digger. Dish washer, M. J. Parmley Door check, B. T. Raisor	449.746 449,916	Mini f Mite
78	Digger. See Potato digger. Dish washer, M. J. Parmley Door check, B. T. Raisor Door closer, check, and alarm, pneumatic, J. H. Abel. Door hanger, W. B. Corp. Draught regulator and spark arrester, C. A. Houston	449,891 450,003	Mou n Mon
	Draught regulator and spark arrester, C. A. Houston  Draw bars, device for relieving the tension of,	450,072	Mop Nail: Neck Nozz
of at	Draight regulator and spark arrester, C. A. Houston  Draw bars, device for relieving the tension of. Schroyer & Thompson  Dust collector, L. V. Rathbun.  Dye, black, H. Reisenegger.  Dyeing machine, J. Hussong  Egg crate. safety, C. C. Tilghman.  Electric block system, automatic, Carlton &	449,828 449,946 450,037	Orde
g	Dyeing machine, J. Hussong. Egg crate, safety, C. C. Tilghman. Electric block system, automatic, Carlton &	450,020 449,981	Ore Ore
oe on	Electric conductors, supporting post for, W. A.	440,000	Orga Pack
г-	Electric light systems, circuit breaker for incan-	449,721 449,921 449,780	Pad. Pain Pain
s	descent, Muller & Greene. Electric motors, automatic switch for, W. Baxter. Jr. Riectrical lock, H. Grefen	449.662	Paln Paln
w	Electrode for electric batteries, carbon, E. A. Le Sueur	450,068 450,105	Pan. Pape
h	W. Zingsem. Electrolytic apparatus, E. A. Le Sueur. Electrolytic cell, E. A. Le Sueur. Electrolytic cell, E. A. Le Sueur. Elevator. See Water elevator.	449,890 450,103 450,104	Pape Pape Pape
•	Wiemston See Water elegator		Pape
of	Bevators with landing switches only, system of operating electric, W. Baxter, Jr.  Ambalming mixture, T. Holmes.  Engine. See Dental engine. Rotary steam engine.		Past Pavi Pavi
a- ie	Engines, dash pot for steam, H. Haberlin Engines, journal box for steam, W. O. Webber Engines off the dead center, device for throwing	449,878 449,840	Pea Pend
A.	Engines, Journal box for steam, W. O. Webber Engines of the dead center, device for throwing the cranks of, J. W. Freeman. Envelope making and printing machine, J. Ball. Exhibitor bedstead, Albin & Erdman. Explosives, process of and apparatus for making,	450.009 449,894 449,654	Peps Pho
all ns or	Evel eting machine, G. Giglio	449.795	Pian Pillo Plan
8, X-	Fans, clutch for rotary, S. D. Shepperd Fence, H. C. Chandler. Fence, J. Owens. Fence wire spool carrier and winder. H. Miller	449,667 449,745	Plan Plas I Plow
aa d-	l Fencing, die for use in making barbed. J. H.	450,049	Pocl Pocl Post
_	File cutting machine, A. Shardlow File, paper, A. Dom. Finger bar and guard finger, L. Miller	450 079	Post Pot. Pota
3	Fire alarm and excinguisher system, auxiliary, E.		Prin Prin Pror
	Fire escape, w. H. McBetti.  Fireplace heater, J. B. Oldershaw	449.692	Prot Prot
	Flour, preparing, E. H. Dunn. Flushing device for water closets, etc., P. F. Britt Forging car wheels, press for, W. A. Pearson. Frame. See Canvas stretcher frame. Quilting	449,794 449,728 449,824	Pull Pum Pun
			Puzz Quil Raci Radi
€.	Furnace. See Hot air furnace. Furnace. J. H. Frdman Furnace. J. Slimm Furnace fire grate, L. Hopcraft. Furnace fire grate, T. Hopcraft. Furnace fire grate, T. Hopcraft.	450,043 450,018	Rail Rail
.]	Gauge. See Saw gauge. Thermal gauge.	110,001	Rail Rail Rail
66	Game apparatus, nuzzle, G. R. Shenard	449 708	Rail Rail Rail
05 86 84	Garment supporter, G. C. Kibbe, Jr. Gas, apparatus for the manufacture of, C. Tellier, Gas burner attachmen. P. Stephansky. Gas engines, vaporizer for, L. G. Wolley. Gas or water fittings, tool for operating on, S. J. Rofe of water fittings, tool for operating on, S. J.	449,712 450,091	Rail Rail
79 912	Gas tar or other liquid fuel, apparatus for burn-	450.059	Regi
34 80	ing, W. Bliss et al.  Glass, apparatus for grinding, smoothing, and polishing, M. Malevez  Glass polishing machine, F. F. Fischer  Gold or silver from ores, apparatus for extract- ing. J. Crapg.	449,686 449,816	Rein Resi Ridi
13 114 168	Gold or silver from ores, apparatus for extract- ing, J. Cragg.	449,813 449,815	Rive Rive Rote
192 160 153	ing, J. Cragg. Gold or silver from ores, extracting. J. Cragg. Gold or silver, lixiviation processor and apparatus for the extraction of is. W. Cragg. Grate, L. L. Culver	449.814 450.058	Rota Roll
332 66 104	Grate, L. L. Culver Grate and flue, T. Rosser. Gravers while being ground, holder for, A. E. Francis	450,058 450,040 449.673	Roll Sad Sad
150 743	Gravers while being ground, holder for, A. E. Francis Grinding mill, L. D. Harding Grip device, intermittent, H. L. Chapman. Guard. See Key hole guard. Gun, breech-loading, H. W. Whitelaw. Hair and composition for use in the same, making ornaments, etc., from, M. I. Waldron. Hammer, H. B. Hackett Handle and brush, combined, T. Russell	450,014 449,752	Sade Safe Sand
87	Hair and composition for use in the same, mak- ing ornaments, etc., from, M. I. Wakiron	449,988	Sand Sash Sash
735 913 157	Handle and brush, combined, T. Russell	450,011	Sash
51 124 382	Harrow, A. G. Dewey Harrow, C. S. Ruef Harrow diek G. G. Crowley	450.060 450.088	Saw Saw Saw Saw
322 311	Hammer, H. B. Hackett. Handle and brush, combined, T. Russell Hanger. See Door hanger. Harmonica, M. Doertel. Harrow, A. G. Dewey. Harrow, C. S. Ruef Harrow or cultivator, side, Thompson & Parker. Harrow, rotary, L. E. Stump. Harvester, binder, Jones & Wedlake. Harvester, corn, B. Slusser. Harvesters, swathing attachment for, W. H. Sharpsteen.	449,835 449,833 450 024	Scal Scal Scre
354	Harvester, corn, B. Slusser	449,969	Scre
982 042 090	Hat trimming machine, S. T. Newman	. 449,911 . 450,109 . 449,948	Sear See Sew Sew
110 683 951	Heater. See Fireplace heater.	. 449,757 . 449,661	Sew Sew Sew
035 069 940 057	Hoisting machines, differential mechanism for G. F. Clemons. Holder. See Broom holder. Copy holder. Paper holder. Pillow sham holder. Rein, holder.	449,900	Sha
056	Hook See Span book		Sign Sign Sign
095 985 <b>869</b>	Davies Davies	. 450,059 . 449,789	
~~	Lione coupling for street washers, G. W. Tinsley.	• 449,638	Smo

28 76 15	Hot air furnace, J. B. Oldershaw	449,693
15	Hot air Tufnace, J. B. Oldersnaw. Huller. See Pea huller. Ice cream freezer, D. C. Camp. Incandescent, O. B. Fahnehjelm. Incubator, N. L. Garrett. Index tab, J. Buscher. Instand, traveling, H. S. S. Fooks. Insects, composition for exterminating, A. O. Hagstedt.	449,665 450,123
98 85 85	Incubator, N. I., Garrett	450,010 450,055
74 13	Insects, composition for exterminating, A. O. Hagstedt	449,905
18 25 52	Hagstedt Insulator, L. McCarthy Insulator pin machine, A. D. Catlin Iron. See Sad fron.	449,948 449,773
52 73 43 23	Ironing machine, N. A. Ransom.  Jack, W. Jackson  Lowred bogsing, M. Dolog	449,702 449,937
09	Journal bearing, I. Hazelton. Journal bearing, H. H. Thorp	449,935 449,837
75 40	Journal bearing, anti-friction. M. A. Andrews Keyhole guard, H. G. H. Reed	449,893 449,917
86 96 41	Musgrove	449,910 449,908
20	Ladder, self-raising, B. H. Burling. Ladder, ste p, A. Dormitzer	449,999 449,846
01 88	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, 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. Sweeney Lamp, o. Sweeney Lamp for street lighting, electric, H. H. Carpenter.	449,978 449,715
97	ter. Lamp support, electric, J. W. Baston Lamp suspending device, F. H. Corthell. Land roller, Dodge & Starks, Lander, Signa H. G. Griffith.	450,000 449,902 450,098
	Land roller, Dodge & Starks.  Lantern, signal, H. G. Griffith	450,006 449,736
1	Lat hes, taper attachment for, Hazlet & Lord Leather dressing machine, T. Shaw	450,016 449,707
28 80	Last, W. Gordon.  Lathes, taper attachment for, Hazlet & Lord.  Leather dressing machine, T. Shaw.  Lens grinding machine, L. Reese  Letter box, G. D. Sidman.  Level, plumb, C. A. C. Lasar.  Lifer See Load lifer Transom lifter.	449,865 449,681
29 58 50	Lifer. See Load lifer. Transom lifter. Light. See Search light. Light by incandescence, producing, O. B.	
50 69 24	Fahnehjelm Lightning arrester, J. W. Easton Linotype machine, P. T. Dodge	450.099 449.903 449.872
2.3	Light. See Search light.  Light by incandescence, producing, O. B.  Fahnehjelm.  Lightning arrester, J. W. Easton  Linotype machine, P. T. Dodge.  Liquids, apparatus for delivering, S. Jenkins.  Load lifter, R. Sargent.  Lock. See Combination lock. Electrical lock.  Nut leave.	449.778 450.089
53	Lock, J. Higbee	449,677
68	Lock, W. C. Smith Locomotives, smoke consumer for, J. Player Loom shuttle, R. Fox. Loom shuttle box operating mechanism, F.	449,830 449,826 449,932
03 38 39	Lacey	449,742 449,790
71	Lacey Loom, swivel, H. Wyman Lubricant, A. Grund Measuring instrument for tunnels, H. R. M. Thom	449,849 449,920
07 01 67	Thom Mechanical movement, Winland & McSherry, Metai post, O. B. Hall Metallic composition, making, E. J. Rollings. Meter. See Water meter.	450,122 449,777 449,783
74	Meter. See Water meter.  Milk can. I., Koch  Milk cooler, J. F. Banks.	449,939
48 47 32	Mill appliance, H. Aiken	449,724
46	Mining machinery, conveyer and separatorapron for, W. A. Merralls.  Miter culting machine, W. J. Perkins.	449,942 449,696
91 003	Mould. See Basket mould. Candy mould. Type	
72	mould.  Monkey wrench, H. Haedicke.  Mop and brush, convertible, W. H. Bagby.  Nails, preparing wire, Pender & Purdy.  Necktie, C. Goldth wait.  Nozzle, exhaust, J. Player  Nut lock, A. C. Vaughan.  Ordnance, breech-luading, E. Von Skoda.  Ore concentrating machinery, C. M. Fitch.  Ore concentrating machinery, C. M. Fitch.  Ore songanetically, process of and apparatus for separating, Ball & Norton.  Organ, reed, C. W. Egan.  Packing for piston rods, metallic, W. Roadhouse.  Pad. See Riding pad.  Paintings and relief pictures. making combined	449,658 449,861
28 46	Nozzle, C. Goldin walt. Nozzle, exhaust, J. Player Nut lock, A. C. Vaughan	449.825 449,983
137 120 81	Ordnance, breech-loading, E. Von Skoda Ore concentrating machinery, C. M. Fitch Ore concentrator, Hammond & Gordon	449,711 450,063 450,013
731	Ores magnetically, process of and apparatus for separating, Ball & Norton	449,726 449,756
77 21 21	Packing for piston rods, metallic, W. Roadhouse. Pad. See Riding pad.	449,949
80	Painting, L. W. Ösborn. Paintings and relief pictures. making combined smooth surface, O. J. R. Berner. Palmetto fiber. extracting, C. B. Warrand Palmetto, manufacturing imitation horse hair from, C. B. Warrand Paner and producing the same illuminated are	449,727
62 068	Palmetto, manufacturing imitation horse hair from, C. B. Warrand	450,120
05	Pan. See Ash pan.  Paper and producing the same, illuminated embossed. P. Hake	449,675
90 03 04	Paper building material, S. H. Hamilton49,737. Paper holder and cutter, roll, L. Ehrlich Paper holder and cutter, roll, C. K. Pickles	449,738 450,061 450,033
662	Pan. See Ash pan. Paper and producing the same, illuminated embossed. P. Hake. Paper building material, S. H. Hamilton	450,036
17	good	449,784 449,670
78 340	Paving block, J. P. Hazelton Pea huller, H. B. Babbitt	449,739 450,051
09 394	ravement, concrete, r. m. Bruner. Paving block, J. P. Hazelton. Pea huller, H. B. Babbitt. Pencil sharpener, W. S. Boyd. Pepsin, preparing, J. L. Webber. Photographic shufters, instantaneous, Dalimeyer	449,839
554 587	& Beauchamp. Piano, A. Graff. Pillow sham holder. W. Johnston.	449,733 449,933 456,075
795 388 367	& Begudian Piano, A. Graff. Pillow sham holder, W. Johnston. Planter, corn, Hughes & Conner. Planter, corn, J. Kleihauer, Jr. Plaster or composition casts, mould for making, L. Naplon.	450,019 450,026
745 03 <b>0</b>	L. Naplon Plow, J. G. Hunt	
149		449.945 449,978
- 1	Pocketbook, F. Lieker. Post. See Metal post.	449,945 449,978 449,791 449,799
079 165 197	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.	449,791 449,799 449,936
79 65 197 302	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.	449,791 449,799 449,936
79 65 197 302 329 359 3112	Pocketbook, F. Lieker. Post. See Metal post. Pot. See Paste pot. Pot. See Paste pot. Potato digger, J. F. Fowler. 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 nuller.	449,791 449,799 449,936
079 165 197 302 329 359 3192 359 4728	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, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Puller W. I. Hall	449,791 449,799 449,936 450,008 449,851 449,909 449,862 449,956 449,782
079 165 197 302 329 359 3192 359 4728	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, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy Puller. See Stump puller. Pulley, W. J. Hall Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson.	449,791 449,799 449,936 450,008 449,851 449,909 449,862 449,782 449,678 449,678 449,678 449,678 449,8831
079 665 1997 3822 3829 359 359 4728 324	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, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy Puller. See Stump puller. Pulley, W. J. Hall Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson.	449,791 449,799 449,936 450,008 449,851 449,909 449,862 449,782 449,678 449,678 449,678 449,678 449,8831
079 165 097 362 329 359 312 559 794 728 324	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, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy Puller. See Stump puller. Pulley, W. J. Hall Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson.	449,791 449,799 449,936 450,008 449,851 449,909 449,862 449,782 449,678 449,678 449,678 449,678 449,8831
079 165 197 1862 329 359 319 359 319 728 324 031 043 018 804	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, vessel, O. J. B. Boeselager. Protractor, C. S. Reamy Puller. See Stump puller. Pulley, W. J. Hall Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson.	449,791 449,799 449,936 450,008 449,851 449,909 449,862 449,782 449,678 449,678 449,678 449,678 449,8831
079 165 197 1802 1802 1812 1859 1812 1859 1812 1813 1814 1814 1814 1816 1816 1816 1816 1816	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager Potractor, C. S. Reamy Puller, See Stump puller Puller, See Stump puller Puller, W. I. Hall Pump, Sand. J. Braden Punch, cheke, G. L. Banks Punch, C. B. Jacks Martin Radia or scheet metal, H. A. Crossley Railway chair, G. W. Wells Railway crossing, cable, C. Vogel Railway crossing, cable, C. Vogel Railway, clectric, R. M. Hunter Railway, switch, S. B. Sabens Railway swinal, automatic, C. W. Wilhelm	449,759 449,759 449,936 450,008 449,851 449,959 449,862 449,782 449,676 449,678 449,831 449,801 449,801 449,801 449,903 449,792 450,117 450,117 450,117 450,117 450,117 450,117 450,117 450,117 450,117 450,117 450,117 450,117
079 165 197 180 180 180 180 180 191 191 191 191 191 191 191 19	Potato digger, J. F. Fowler. Printner's chase, W. P. Harding. Printner's chase, W. P. Harding. Printner's chase, W. P. Harding. Propeller, series, M. G. Pool. Propeller, vessel. B. Boeselager. Protractor, C. S. Reamy. Puller, See Stump puller. Puller, See Stump puller. Puller, See Stump puller. Puller, S. J. Harden. Pundh, A. J. Harden. Pundh, A. J. Harden. Pundh, See Hay rack. Radiagor frame. K. Martin. Rack. See Hay rack. Radiagor sheet metal, H. A. Crossley. Railway chair, G. W. Wells. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, R. M. Hunter. Railway, electric, C. M. Bentley. Railway swinal, automatic, C. W. Wilelm. Railway swinal, automatic, C. W. Wilelm. Railway swinal, automatic, C. W. Wilelm. Railway swirals, pneumatic signal for, G. A. Boyden. Railways, pole for overhead systems of electric, J. N. Brownlee.	449,799 449,836 449,851 449,851 449,852 449,852 449,782 449,782 449,782 449,663 449,801 449,801 449,801 449,907 450,117 450,117 450,117 450,117 450,117 450,117 450,117 450,013 450,053
779 665 802 802 8329 8329 8329 8329 8324 8324 8317 8317 8317 8317 8317 8317 8317 8317	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, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy. Puller. See Stump puller. Pulley, W. I. Hall. Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin. Rack. See Huy rack. Radiator, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, E. M. Bentley. Railway, electric, E. M. Bentley. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway trains, pneumatic signal for, G. A. Boyden. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Railways, three-rail track for cable, C. Vogel. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator.	449,799 449,836 449,851 449,863 449,863 449,863 449,863 449,863 449,863 449,861 449,678 449,990 449,990 449,91 449,91 449,91 449,91 449,91 449,91 450,117 450,118 449,90 450,053 449,753 450,116
079 165 1997 1802 3329 3559 312 3559 312 359 312 3143 3118 804 108 809 7112 991 863 052	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Puller. Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Puller, W. L. Hall Pulley, W. L. Hall Pump, Sand, J. Braden Punch, check, G. L. Banks Puzzle, J. E. Jackson Quilting frame, E. Martin Back. See Hay Tack Railway reame, E. Martin Railway chart, G. W. Wells Railway course cable, C. Vogel Railway curve, cable, C. Vogel Railway curve, cable, C. Ocgel Railway, electric, E. M. Bentley Railway switch, S. B. Sabens Railway switch, S. B. Sabens Railway trains, pneumatic signal for, G. A. Boy- Railways, pole for overhead systems of electric, J. N. Brownlee Railways, three-rail track for cable, C. Vogel Register. See Counting register Register. See Counting register Resulator. See Draught regulator. Speed regu- Resawing maching, A. D. Catlin Retitur ord W. C. MNNeeler	449,799 449,858 449,863 449,863 449,863 449,863 449,863 449,863 449,861 449,961 449,961 449,961 449,961 449,763 449,763 449,763 450,118 449,704 450,117 450,118 449,704 450,117 450,118 449,763 449,763 449,763 449,763 449,763
079 665 1997 862 329 359 359 359 359 359 369 728 324 331 34.3 318 804 108 809 712 991 863 052 863 313	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, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy. Proller, See Stump puller. Puller, See Stump puller, Puller, See Stump puller, Puller, See Stump puller, Punnp, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin. Rack. See Hay rack, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway ctric, E. M. Wells. Railway ctric, E. M. Hentley. Railway, electric, E. M. Bentley. Railway sixnal, automatic, C. W. Wilhelm. Railway switch, S. B. Sabens. Railway trains, pneumatic signal for, G. A. Boyden. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator. Rein holder, W. Rene. Resawing maching, A. D. Catlin. Riding pad, W. C. McNeeley. Riivet, I. G. Platt. Rivets, forming, I. G. Platt. Rotary meters "full dressure device for I. H. H.	449,799 449,891 449,891 449,891 449,892 449,892 449,893 449,893 449,891 449,691 449,691 449,691 449,792 449,792 449,793 449,793 449,794 449,784 449,78
079 665 997 862 329 359 359 359 359 359 362 31 343 3018 804 108 804 108 804 108 863 316 316 316 316 316 316 316 316 316 3	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, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy. Proller, see Stump puller. Puller, See Stump puller. Puller, See Stump puller. Pulley, W. L. Hall. Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin. Rack. See Huy rack, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, E. M. Bentley. Railway, electric, E. M. Bentley. Railway sixnal, automatic, C. W. Wilhelm. Railway switch, S. B. Sabens. Railway rains, pneumatic signal for, G. A. Boyden. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator. Rein holder, W. Rene. Resawing maching, A. D. Catlin. Riding pad, W. C. McNeeley. Riivet, I. G. Platt. Rotary meters, "fluid pressure device for, L. H. Nash. Rotary steam engine, J. E. Sackett.	449,799 449,891 449,891 449,892 449,892 449,893 449,893 449,893 449,893 449,893 449,893 449,893 449,893 449,893 449,893 449,893 449,794 449,794 449,794 449,794 449,794 449,794 449,794 449,795 449,794 449,794 449,794 449,794 449,794 449,794 449,794 449,795 449,795 449,795 449,795 449,795 449,795 449,795 449,795 449,89
079 1665 1997 1692 1592 1599 1599 1599 1599 1599 1599 15	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, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Puller. See Stump puller. Pulley, W. I. Hall. Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin Rack. See Hay rack. Radiator, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, E. M. Bentley. Railway spitch, S. B. Sabens. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway spitch, S. B. Sabens. Railway spitch, S. B. Sabens. Railway spitch, S. B. Sabens. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Railways, three-rail track for cable, C. Vogel. Recister. See Counting register. Reyulator. See Draught regulator. Speed regulator. Reen holder, W. Rene. Resawing maching, A. D. Catlin Riding pad, W. C. McNeeley. Rivets, forming, I. G. Platt. Rotary steam engine, J. E. Sackett. Rotler. See Land roller.	449,799 449,891 449,803 449,803 449,803 449,803 449,803 449,803 449,803 449,801 449,603 449,704 449,704 449,704 449,704 449,704 449,704 449,704 449,704 449,704 449,808
079 165 197 180 197 180 197 198 199 199 199 199 199 199 199	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, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Puller. See Stump puller. Pulley, W. I. Hall. Pump, sand, J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin Rack. See Hay rack. Radiator, sheet metal, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway crossing, cable, C. Vogel. Railway, electric, E. M. Bentley. Railway spitch, S. B. Sabens. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway spitch, S. B. Sabens. Railway spitch, S. B. Sabens. Railway spitch, S. B. Sabens. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Railways, three-rail track for cable, C. Vogel. Recister. See Counting register. Reyulator. See Draught regulator. Speed regulator. Reen holder, W. Rene. Resawing maching, A. D. Catlin Riding pad, W. C. McNeeley. Rivets, forming, I. G. Platt. Rotary steam engine, J. E. Sackett. Rotler. See Land roller.	449,799 449,891 449,803 449,803 449,803 449,803 449,803 449,803 449,803 449,801 449,603 449,704 449,704 449,704 449,704 449,704 449,704 449,704 449,704 449,704 449,808
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079 165 197 197 197 197 197 197 197 197	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Puller. Puller, See Stump puller, Puller, See Stump puller, Puller, See Stump puller, Puller, B. Jacks Puzzle, J. E. Jacks Puzzle Puzzle, J. E. Jacks Puzzle, J. E. Jacks Puzzle, J. E. Jacks Puzzle	449,752 449,762 449,893 449,893 449,893 449,893 449,893 449,863 449,861 449,611 449,611 449,611 449,611 449,611 449,611 449,613 449,762 449,762 449,762 449,762 449,762 449,772 449,898 449,699 449,898 449,89
079 165 187 187 187 187 187 187 187 187	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Puller. Puller, See Stump puller, Puller, See Stump puller, Puller, See Stump puller, Puller, B. Jacks Puzzle, J. E. Jacks Puzzle Puzzle, J. E. Jacks Puzzle, J. E. Jacks Puzzle, J. E. Jacks Puzzle	449,752 449,762 449,893 449,893 449,893 449,893 449,893 449,863 449,861 449,611 449,611 449,611 449,611 449,611 449,611 449,613 449,762 449,762 449,762 449,762 449,762 449,772 449,898 449,699 449,898 449,89
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079 1655 1862 1872 1872 1872 1872 1872 1872 1873 1	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Puller. Puller. See Stump puller. Pulley. W. I. Hall Pump, sand. J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin Rack. See Hay rack, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway chair, G. W. Wells Railway crossing, cable, C. Vogel. Railway curve, cable, C. Vogel. Railway, electric, E. M. Hunter. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway systems, B. Sabens. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator. Rein holder, W. Rene. Reswing maching, A. D. Catlin Riding pad, W. C. McNeeley. Rivet, I. G. Platt. Rotary meters, fluid pressure device for, L. H. Nash Rotary steam engine, J. E. Sackett. Roller. See Land roller. Rotary meters, fluid pressure device for, L. H. Rotary meters, fluid pressure device for, L. H. Rotary steam engine, J. E. Sackett. Roller. See Land roller. Roller and seed sower, combined, T. A. Butler. Sad fron, E. G. Asmus. Sad ron, W. C. Dimmock. Saddie, gig, F. M. Friegel. Sash balance, A. Ingalls. Sash fastener, E. D. Bangs. Sash midow, A. Rudolph. Saw gauge, R. P. M. Vary. Saw guard, gang, K. Dolen. Saw guide, W. A. Campbell. Saw guide, W. A.	449,791 449,860 449,861
079 1657 1	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Puller. Puller. See Stump puller. Pulley. W. I. Hall Pump, sand. J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin Rack. See Hay rack, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway chair, G. W. Wells Railway crossing, cable, C. Vogel. Railway curve, cable, C. Vogel. Railway, electric, E. M. Hunter. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway systems, B. Sabens. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator. Rein holder, W. Rene. Reswing maching, A. D. Catlin Riding pad, W. C. McNeeley. Rivet, I. G. Platt. Rotary meters, fluid pressure device for, L. H. Nash Rotary steam engine, J. E. Sackett. Roller. See Land roller. Rotary meters, fluid pressure device for, L. H. Rotary meters, fluid pressure device for, L. H. Rotary steam engine, J. E. Sackett. Roller. See Land roller. Roller and seed sower, combined, T. A. Butler. Sad fron, E. G. Asmus. Sad ron, W. C. Dimmock. Saddie, gig, F. M. Friegel. Sash balance, A. Ingalls. Sash fastener, E. D. Bangs. Sash midow, A. Rudolph. Saw gauge, R. P. M. Vary. Saw guard, gang, K. Dolen. Saw guide, W. A. Campbell. Saw guide, W. A.	449,791 449,860 449,861
779 1657 1697 1	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Puller. Puller. See Stump puller. Pulley. W. I. Hall Pump, sand. J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin Rack. See Hay rack, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway chair, G. W. Wells Railway crossing, cable, C. Vogel. Railway curve, cable, C. Vogel. Railway, electric, E. M. Hunter. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway systems, B. Sabens. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator. Rein holder, W. Rene. Reswing maching, A. D. Catlin Riding pad, W. C. McNeeley. Rivet, I. G. Platt. Rotary meters, fluid pressure device for, L. H. Nash Rotary steam engine, J. E. Sackett. Roller. See Land roller. Rotary meters, fluid pressure device for, L. H. Rotary meters, fluid pressure device for, L. H. Rotary steam engine, J. E. Sackett. Roller. See Land roller. Roller and seed sower, combined, T. A. Butler. Sad fron, E. G. Asmus. Sad ron, W. C. Dimmock. Saddie, gig, F. M. Friegel. Sash balance, A. Ingalls. Sash fastener, E. D. Bangs. Sash midow, A. Rudolph. Saw gauge, R. P. M. Vary. Saw guard, gang, K. Dolen. Saw guide, W. A. Campbell. Saw guide, W. A.	449,791 449,860 449,861
779 569 77 57 57 57 57 57 57 57 57 57 57 57 57	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager Protractor, C. S. Reamy Puller. Puller, See Stump puller. Puller, See Stump puller. Puller, W. L. Hall Pump, Sand, J. Braden Punch, check, G. L. Banks. Puzzle, J. E. Jackson Quilting frame, E. Martin Rack. See Hay rack Radiator, sheet metal, H. A. Crossley Railway chair, G. W. Wells Railway crossing, cable, C. Vogel Railway, chectric, E. M. Bentley Railway, electric, R. M. Bentley Railway, electric, R. M. Bentley Railway, electric, R. M. Hunter Railway switch, S. B. Sabens Railway trains, pneumatic signal for, G. A. Boyden Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Railways, three-rail track for cable, C. Vogel. Register. See Counting register Regulator. See Draught regulator. Speed regulator. Register, See Counting register Regulator. See Draught regulator. Speed regulator Roiler, W. Rene. Resawing maching, A. D. Catlin Riding pad, C. MeNeeley. Rivet, I. G. Platt. Rotary meters, fluid pressure device for, L. H. Asah Rotary steam engine, J. E. Sackett Roller. See Land roller. Roller. See Land roller. Roller. See Land roller. Sad fron, E. G. Asmus. Sad iron, W. C. Dimmock Saddle, gig, F. M. Friegel. Sank balance, A. Ingals. Sash balance, A. Ingals. Sash sastener, E. D. Bangs Sash, window, A. Rudolph. Saw gauge, R. P. K. Saw gauge, R. P. R. Saw gauge, R. P. Saw gauge, R. P. Saw gauge, R. P. Saw gauge,	449,759 449,930 449,931 449,936 449,851 449,851 449,852 449,853 449,853 449,853 449,853 449,853 449,853 449,752 449,763 449,763 449,763 449,763 449,763 449,763 449,763 449,763 449,858
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779 682 784 22 4 6 6 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6	Potato digger, J. F. Fowler Printner's chase, W. P. Harding Printner's chase, W. P. Harding Printner's chase, W. P. Harding Propeller, crew, M. G. Pool. Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Propeller, vessel. O. J. B. Boeselager. Protractor, C. S. Reamy Puller. Puller. See Stump puller. Pulley. W. I. Hall Pump, sand. J. Braden. Punch, check, G. L. Banks. Puzzle, J. E. Jackson. Quilting frame, E. Martin Rack. See Hay rack, H. A. Crossley. Railway crossing, cable, C. Vogel. Railway chair, G. W. Wells Railway crossing, cable, C. Vogel. Railway curve, cable, C. Vogel. Railway, electric, E. M. Hunter. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway switch, S. B. Sabens. Railway systems, B. Sabens. Railways, pole for overhead systems of electric, J. N. Brownlee. Railways, three-rail track for cable, C. Vogel. Register. See Counting register. Regulator. See Draught regulator. Speed regulator. Rein holder, W. Rene. Reswing maching, A. D. Catlin Riding pad, W. C. McNeeley. Rivet, I. G. Platt. Rotary meters, fluid pressure device for, L. H. Nash Rotary steam engine, J. E. Sackett. Roller. See Land roller. Rotary meters, fluid pressure device for, L. H. Rotary meters, fluid pressure device for, L. H. Rotary steam engine, J. E. Sackett. Roller. See Land roller. Roller and seed sower, combined, T. A. Butler. Sad fron, E. G. Asmus. Sad ron, W. C. Dimmock. Saddie, gig, F. M. Friegel. Sash balance, A. Ingalls. Sash fastener, E. D. Bangs. Sash midow, A. Rudolph. Saw gauge, R. P. M. Vary. Saw guard, gang, K. Dolen. Saw guide, W. A. Campbell. Saw guide, W. A.	449,752 449,803 449,803 449,803 449,803 449,803 449,803 449,803 449,803 449,762 449,763