vanometers? A. There is nothing absolute about a gal. rubber hand stamp manufacturers use to take their imvanometer, except those of special construction. Generally they have to be calibrated before their readings can be interpreted directly. Galvanometers can be and frequently are (as in ammeters and voltmeters) constructed for uniform readings for given currents. 4. About how many heat units are there in a cubic centimeter of zinc ! A. In conversion into oxide it will liberate 12.1 knogramme calories. 5. I have made the motor described in SUPPLEMENT, No. 783, and it works to perfection, going so fast it hums. Now, as I understand it, the centers of greatest attraction on the field magnets are right next to the coils; therefore, the armature revolves, being at. cow's milk?-P. C. asks for a reliable washing comtracted on one side and repelled on the other. Am I pound.—G. W. S. asks for a formula for a benzine-reright? A. Yes. 6. On the motor referred to, one side of the armature is positively and the other side negatively magnetized, is it not? A. Yes.

(4111) W. H. W. asks: 1. Will you please inform me through your paper what is the difference between nitrate of silver and oxide of silver, and how each are formed and what are their characteristics? A. Silver nitrate is a compound of the nitric acid radical and silver, and is made by treating silver with nitric acid. It is a white solid, fusible, and known often as lunar caustic. Silver monoxide is a brown powder formed by precipitating the above in solution with canstic alkali. 2. What is the substance called salicylic acid and how formed, and in what way is salacine con-(OH)CO2H. It is made by heating sodium phenate in laws and practice on both continents, and to possess un a stream of carbon dioxide. It occurs free in the of wintergreen. Salicin is a glucoside, C₁₃H₁₈O₇, not foreign countries may be had on application, and person directly related to salicylic acid. It is contained in the leaves and young bark of the willow, poplar, and other trees. Your other questions we cannot undertake to answer.

(4112) A. C. writes: 1. Last year bought Hopkins' "Experimental Science." Constructed motor as therein described, page 497, etc., using cast iron magnet; did not double number of coils and convolutions; used field magnet just as it came to me from foundry. Should four volts make such motor move sufficiently to test accuracy of winding and connections? A. The voltage should be sufficient to overcome the resistance of the machine. The amperage must be great enough to produce the power. With an E. M. F. of 4 volts and 4 or 5 amperes the motor should work very well. 2. With what degree of accuracy should halves of magnet be fitted together, and if inaccurately fitted, can failure to respond to four volts be attributed to that cause? A. The joints of the magnet should be as perfect as possible. Your trouble was probably due to insufficient current. 3. What is the difference if, in winding armature, the terminal end of each of the twelve coils comes from the inside (or under) of core m place of from ontside, as in illustration, page 500? A. No difference,

(4113) T. D. W., Jr., asks: 1. What kind of battery is required to run the electric tray illuminator as described in the SCIENTIFIC AMERICAN, vol. lxv., No. 21, page 329? I wish to construct one of one or two candle power incaudescent lamps. What kind of battery and how much would it cost to run the same for a year? I would not use it every day, but only once every now and then. Sometimes it month before I will take a picture. A. Use 4 or 6 cells of Leclanche battery or 3 or 4 cells of Fuller. The cost is very small when the battery is used only occasionally. It would not cost more than 50 cents per year after the batteries are provided. 2. Is the flash made by the flash light (described on the same page as above) instantaneous or does it require a time exposure? Is the lens left uncapped and the flash made, or is the flash made and the exposure made a time one? Also what number of Seed's or Cramer's plates should be used? A. The flash is instantaneous. Use the quickest plates. The lens may be left uncovered. 3. Will beeswax do as well for lining a tray for silvering paper as paraffin? A. Yes

(4114) J. B. M. asks: 1. I have some statuary made of composition (sample inclosed) having a similar appearance to Rogers groups in finish. The outer coating or finish is wearing off, giving them a soiled, spotted appearance. What can I use to restore this brownish, or drab finish? It is a dead color, not a gloss. A. Give it a coat of paint made of white lead, raw umber, a very little oil and turpentine. Tube colors such as are used by artists can be used after thinning with turpentine. 2. What will restore the gloss to frame work of a type writer that has become dull? A. A thin coat of hard drying japan varnish. A flue quality of furniture varnish with refined lamp black added is sometimes used.

(4115) J. A. P. writes: 1. I have a boat 12 feet long. What size motor would it require to run it 5 or 6 miles per hour? Would two simple motors like those described in Hopkins' "Experimental Science" answer? A. You will hardly get more than three miles an hour with the simple motor. 2. How many cells storage battery would it require? A. 12 cells. 3. How many square feet of positive plate would it require to each cell? A. 2 or 3 square feet. 4. How can I anneal cast iron? A. Imbed in blacksmith's cinder and oxide of iron and heat in closed iron boxes to redness for several days. 5. How much current does a storage battery receive in circuit with a 16 candle power 110 volt lamp? A. Half an ampere.

J. N. L. says: Kindly give me a receipt for an ink eraser in liquid form.-C. R. D. says; Will you please give me a good receipt for making soldering fluid to be used in jewelry?—F. C. A. says: Tell me of a cheap substance that can be melted and run into moulds and become hard like rubber when cold .- A. F. J. says: Will you please let me know how to dissolve amber in some quick drying solvent, so as to dry about as quick as shellac in alcohol?-G. B. B. asks for a copying paper .-- J. H. savs: I noticed the article on cement for metals made of zinc oxide and zinc chloride. Won't you kindly let me know how it is prepared ?-W. W. G. says: Please inform me what is generally used in making plaster of Paris moulds, and how to mix it.—
C. A. B. asks: Can you inform an old reader of what that compound is, and the manner of making it, that

Carriage top, D. Concoy.

Carriage top, D.

pressions of the type in?-W. B. R. asks: Can you tell us in your paper the kind of ruhber cement that is used on the back of felt letters by which they are stuck to cloth, simply by running a hot iron over them? What is the cement made of and how is it applied to the felt? -W. M. says: I should like to know of some washing preparation.—C. J. M. says: Please answer through your Notes and Query column how to make colored crayon for the purpose of rough sketching on paper .-A. D. says: If it is not outside your province, will you kindly give me the recipe for making koumles out of sisting preparation to apply to corks.-F. C. & Co. ask for a burnishing ink for the use of shoemakers .- A. B. C. says: 1. Please inform me how carbon paper such as sed with the typewriter in making transcripts is made, 2. How can typewriter ribbons be renewed or re-inked?

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.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for panected with it? A. It is ortho-oxybenzoic acid, C. H. tents at home and abroad, enable us to understand the equaled facilities for procuring patents everywhere. flowers of Spircea ulmaria, and as a methyl ether in oil synopsis of the patent laws of the United States and all contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. MUNN & CO., office Scientific American, 361 Bread way, New York.

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March 1, 1892.

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

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Braiding machines, combined spool holder and stop motion for, W. Mundt. Brake. See Car brake. Vehicle brake. Wagon brakels. See Car brake. Vehicle brake. Wagon brakelston indicator, J. J. Hannan. Bridgea, self-acting gate for draw, Gabele & Bridgea, self-acting gate for draw, Gabele & Bridgea, self-acting gate for making spring wire, M. D. Kremer. Brush footstan marking, H. S. Brewington. Brush makers, knot picker for, W. Lewis. Buckle, M. Schener. Brush, footstan marking, H. S. Brewington. Brush makers, knot picker for, W. Lewis. Buckle, M. Schener. Burner, T. A. Williamson. Butter jar, L. Van Vieck. Button, G. E. Adams. Cable grip, A. H. De Camp. Cable grip, A. H. De Camp. Can labeling machine, J. T. Cox. Can labeling machine, J. C. Taylor et al. Can opener, A. Ward. Can opener, A. Ward. Can opener, A. Ward. Car, Heacock & Lovejoy. Car, D. B. Williams. Car brake, T. F. Clark. Car coupling, I. Neckerman. Car coupling, I. Neckerman. Car door, ventilating, C. T. Schoen. Car, ventilated, J. W. H. artin. Car wheel, J. R. Davies. Car, sock, C. W. Allen. Car, wheel, J. Harris. Car, of cable roads, apparatus for railway, J. F. McEroy. Cars of cable roads, apparatus for illuminating, Scribner & Warner.	469,974 469,823 470,118 469,911 469,911 469,911 469,912 470,011 469,912 469,922 470,011 469,912 469,922 470,011 469,912 470,017
Braiding machines, combined spool holder and stop motion for, W. Mundt. Brake. See Car brake. Vehicle brake. Wagon brake. Brake piston indicator, J. J. Hannan. Bridges, self-acting gate for draw, Gabele & Mattes. Bridle bit, B. M. Johnson. Broom holders, machine for making spring wire, M. D. Kremer. Brush fountain marking, H. S. Brewington. Brush makers, knot picker for, W. Lewis. Buckle, M. Scheuer. Burner. See Gas burner. Burner. T. A. Williamson. Butter jar, L. Van Vleck. Button, G. E. Adanes. Cable systems, distributing box for, C.H. Wilson. Son. Can ilabeling machine, J. T. Cox. Can ilabeling machine, J. C. T. Schoen. Can opener, A. T. Welch. Car, D. B. Williams. Car brake, T. F. Clark. Car couplings, 1. Neekerman. Car couplings, 1. Neekerman. Car cover, 1. Neekerman. Car cover, 1. Neekerman. Car cover, 1. Neekerman. Car cover, 1. Neekerman. Car car can car cover. Car, 1. See Jayles. Car starter and brake, W. L. Davis. Car heacock C. W. Allen. Car, wentilated, J. W. Hartin. Car, wentilated, J. W. Hartin. Car, wheel, J. R. Davies. Car wheel, J. R. Davies. Car wheel, J. R. Davies. Car wheel, J. R. Davies. Cars of cable roads, apparatus for rilluminating. Cars of cable roads, apparatus for illuminating.	469,974 469,823 470,118 469,911 469,911 469,910 469,912 469,912 469,912 469,912 469,912 469,912 469,912 469,912 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913
Braiding machines, combined spool holder and stop motion for, W. Mundt. Brake. See Car brake. Vehicle brake. Wagon brake. Brake piston indicator, J. J. Hannan. Bridges, self-acting gate for draw, Gabele & Mattes. Bridle bit, B. M. Johnson. Broom holders, machine for making spring wire, M. D. Kremer. Brush fountain marking, H. S. Brewington. Brush makers, knot picker for, W. Lewis. Buckle, M. Scheuer. Burner. See Gas burner. Burner. T. A. Williamson. Butter jar, L. Van Vleck. Button, G. E. Adanes. Cable systems, distributing box for, C.H. Wilson. Son. Can ilabeling machine, J. T. Cox. Can ilabeling machine, J. C. T. Schoen. Can opener, A. T. Welch. Car, D. B. Williams. Car brake, T. F. Clark. Car couplings, 1. Neekerman. Car couplings, 1. Neekerman. Car cover, 1. Neekerman. Car cover, 1. Neekerman. Car cover, 1. Neekerman. Car cover, 1. Neekerman. Car car can car cover. Car, 1. See Jayles. Car starter and brake, W. L. Davis. Car heacock C. W. Allen. Car, wentilated, J. W. Hartin. Car, wentilated, J. W. Hartin. Car, wheel, J. R. Davies. Car wheel, J. R. Davies. Car wheel, J. R. Davies. Car wheel, J. R. Davies. Cars of cable roads, apparatus for rilluminating. Cars of cable roads, apparatus for illuminating.	469,974 469,823 470,118 469,911 469,911 469,910 469,912 469,912 469,912 469,912 469,912 469,912 469,912 469,912 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913 469,913
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Braiding machines, combined spool holder and stop motion for, W. Mundt. Brake. See Car brake. Vehicle brake. Wagon brake. See Car brake. Vehicle brake. Wagon brake. Brake piston indicator, J. J. Hannan. Bridgen, self-acting gate for draw, Gabele & Mutties. B. M. Job nson. Broom holders, machine for making spring wire, M. D. Kremer. Brush, fountain marking, H. S. Brewington. Brosh makers, knot picker for, W. Lewis. Buckle, M. Scheuer. Brush, fountain marking, H. S. Brewington. Brush fountain marking, H. S. Brewington. Brush fountain marking. H. S. Brewington. Brush for M. H. Berwington. Burche, See Gas burner. Burner, See Gas burner. Burner, See Gas burner. Burner, See Gas burner. Burner, De Gas burner. Burner, See Gas burner. Cable grip, A. H. De Camp. Cable grip, A. H. De Camp. Can labeling machine, J. T. Cox. Can labeling machine, J. T. Cox. Can opener, A. Ward. Car brake, T. F. Clark. Car coupling, I. Neckerman. Car brake, T. F. Clark. Car coupling, Sering box for, McMahon & Wilcoxson. Car, ventilated, J. W. H artin. Car wheel, J. Harris. Car, box warner. Cars, power transmitting mechanism for, E. Prouty. Carbon sheet holder, J. S. McDonald.	469,974 469,823 470,118 469,911 469,911 469,911 469,912 469,902 469,902 469,902 469,902 469,902 469,902 469,903
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	Case. See Card case. Fruit packing and shipping case. Packing case. Cash and package carrier, J. Finck	1 208 094	Jot Kit Kn
	Cash drawer and recorder, E. E. A. Laves. Casket handle, J. McCarthy. Casks or barrels, tap hole protector for W. F.	169,789 169,975	Kn
			Kn Lac Lac
	Schopfer Cereal drier, P. Borgarelli Cereals and products treating, E. V. Donelson. Chain cutter, N. A. Chaney Chain, drive, J. B. Ivey Chair, See Reclining chair. Chairs, foot rest for, J. J. Hogan. Chairs, foot rest for, J. J. Hogan. Change delivering device, C. R. Ferguson. Checkrein holder, G. G. Chauncey Cheese safe, F. S. Gifford. Chimney, heating, S. T. H. Holt. Chuok, lathe, C. E. Pease. Churn, J. Jaque Churn, G. Martinet Chrouf, interrupting device, A. Wurts. Clamp. See Beam clamp. Clasp. See Shoe clasp.	470,166 470,141	Lai
1	Chair. See Reclining chair. Chairs, foot rest for, J. J. Hogan	470,128 469,779	La
	Checkrein holder, G. G. Chauncey Cheese safe, F. S. Gifford Chimney, heating, S. T. H. Holt.	169,934 469,692 469,700	Le: Le:
	Chuck, lathe, C. E. Pease. Churn, J. Jaque Churn, G. Martinet.	470,075 469,702 469,970 :	Lig
	Circuit interrupting device, A. Wurts	470,161	Lit Lo
	Clasp. See Beam clamp. Clasp. See Shoe clasp. Clasp. Kuchler & Flacter. Clock, electric alartu, J. Yungbauer	469,705 659,802	Lo
	Cloth cutting machine, C. B. Fulton	469,837 469,859 470,058	Lo Lo
	469,867,	469,868	Lu Lu
	Commutator brush and holder, C. D. Jenney	469,866 469,806	Lu Lu
•	Cooler. See Tumbler cooler. Copy press, F. E. Davenport	470,105 469,759	Ma
	Cooler. See Tumbler cooler. Copy press, F. E. Davenport. Cot, folding, C. M. Wagner. Counters, etc., combined arm rest and guard for, W. C. Huss. Coupling. See Car coupling. Hose coupling. Shatt coupling. Thill coupling. Cuff link. A. T. Mason.	470,002	Ma Ma Ma
•	W. C. Huss. Coupling. See Car coupling. Hose coupling. Shaft coupling. Thill coupling. Cuff link, A. T. Mason. Cutinary vessel, S. Williams. Cutivator, J. Kirby. Cutivator, B. F. Young et al. Curtain mover, I. M. Askren. Cut-off, water spout, P. W. Armstrong. Cuter. See Band cutter. Chain cutter, Planing cutter. Cylinder lock, H. Morton. Cylinder lock, H. Morton.	469,885 470,090	Ma Ma Ma
	Cultivator, J. Kirby. Cultivator, B. F. Young et al. Curtsin mover. I. M. Askren.	469,807 470,030 469,803	Me Me Me
	Cut-off, water spout, P. W. Armstrong Cutter. See Band cutter. Chain cutter, Plan-	469,989	Me Me
,	ing cutter. Oylinder lock, H. Morton. Dandy rolls, wire gauze for, J. Pohle. Dash pot, W. A. Harris. Dead light, A. McDougall. Desiccating closet, J. A. Wills. Disgor. See Potato digger. Ditching machine, L. A. Desy. Door check, H. R. Frisbie. Door check, T. D. Morris.	469,946 469,716 469,697	Mi M
•	Dead light, A. McDougall Dental heater, W. S. How	469,913 469,884	Mo Mo
3	Disglay rack, A. L. Engle	469,686	M
•	Door check, H. R. Frisbie. Door check, T. D. Morris.	469,968 469,825	M M
•	Drier. See Cereal drier. Sand drier.	470 005	NE NE NE NE
	Dust pan, anjustable, G. D. Miles	409,703	No
	Electric battery, E. Ortelli. Electric circuits, fusc for, Scott & Wurts. Electric conduit, underground, E. P. Robbins. Electric elevator, C. J. Sturgeon. Electric machine, ynamo, F. A. Sperry. Electric meter, J. J. Wood. Electric motor controlling device. A. L. Parcelle.	470,073 470,014 469,723	OI N
	Electric elevator, C. J. Sturgeon Electric machine, ynamo, E. A. Sperry Electric meter, J. J. Wood.	470,150 469,725 469,800	Or
	Electric motor controlling device, A. L. Parcelle Electric plaster, galvanic, J. W. Shults469,796, Electrical distribution, system of, W. Stanley, Jr.	469,712 469,797 469,809	Pa Pa Pa
,	Electrical translating devices, a djustable suspension apparatus for, H. D. Sisson	470,080 469,862	Pa
	Electric machine, ynamo, F. A. Sperry. Electric meter, J. J. Wood Electric motor controlling device, A. L. Parcelle, Electric patrice, gaivanic, J. W. Shults 486,736, Electrical distribution, system of, W. Stanley, Jr. Electrical translating devices, adjustable suspension apparatus for, H. D. Sisson. Electro-magnetic machine, R. Lundell Electrolier, extension, C. Deaves. Elevator. See Electric elevator. Elevator, S. E. Stokes	469,895	Pa
-		469,903	Pa Po Po
4	gine. Rotary engine. Traction engine. Engine cut-off, steam, W. A. Harris. Evaporating pan, vacuum, S. M. Lillie.	469,696 470,060	Pe
8	Engine cut-on, steam, w. A. Harris. Evaporating pan, vacuum, B. M. Lillie. Extractor. See Stump extractor. Eyeglass holder, E. B. Wilmarth. Eyeglasses, J. J. Wood. Farm gate, J. R. Weans.	470,136 470,029	Pi Pi Pi
7	Panart Oltorina W. U. Luco	470,067 409,901 470,004	Pi Pi Pi
7	Fence machine, wire, J. J. Harris Fences, stay rod clip for wire, R. E. Poindexter Ferrule for whips and making the same, Grant &	470,047 469,808	Pi Pi Pi
9 8 4	Fertilizer feeder A H. Worrest	469,897 469,801 470,050	Pl Pl Pl
ē	File, letter, C. E. Jewell File, letter, C. F. Lomb Firearm magazine, J. M. Marlin Firearms, ejector mechanism for breech-loading,	470,062 469,819	Pi Pi Pi
773		470,157 469,998 470,112	Po Po Po
26	Fire department use, vehicle for, C. T. Holloway. Fire escape. C. P. B. Ehrentraut. Fishing reel, N. J. Felix. Fishing reel, E. S. Holmes. Flax. etc. machine for breaking, scutching, and	459,687 470,130	Po
ĭ 68	hackling, J. Cardon.	469,679 469,804 469,752	P
3	Flour bolt, Smith & Clark Force feed lubricator, Traves & Whelan Fork, See Pastry fork,	469,821	Pi Pi Pi Pi
ő	Frame. See Refuse carrier frame.	469,683	Pi
'n	Fruit gatherer, O. L. Danforth. Fruit packing and shipping case, C. H. Treat Fruit receptacle ventilator, J. P. Smith Fuel, method of and apparatus for heating with	469,880 469,986 469,983	Pi
2	Furnace. See Boiler or other furnace.	400,001	Pi Pi R
•	Furnace attachment, E. Waugh	469,894 469,749	R
3 1 6		469.978	R
8		469.925	R R R
10 13 16	Game apparatus, C. P. Blinn. Game board, W. S. Reed	469,928	R. R.
6 10 17	Gas, apparatus for the manufacture of, J. A.	470,031	R
8	Gas, burner, H. Kennedy. Gas, manufacturing fuel, W. A. Koneman. Gas, producing, A. W. Putman-Cramer. Gas, purifying illuminating, J. Wiesender. Gats, See Fad and Form one. Siding one.	469,824 469,868 470.007	R
′4		469,847	R R
23	Generator. See Vapor generator. Glith. J. C. Covert.	469.965	R
18	Gong signal, J. C. Wells	4029 7911	R R
11	chine, G. E. Russell Grain separator, W. H. Scbulte Grinding machine R. J. Christy	470,077 469,827 469,779	R
)())())()	: Gun, breech-loading quick-firing, C. Holmstrom	469,814 470,036	R
91 29 02	Hammer, task, W. Jacoby Hammers, nail or tack holding attachment for,	470,150	Si Si Si
)9	Hammock spreader, I. E. Palmer	469,710 469,869	Se Se
65 92 36	Harvester, corn, J. W. Miller	470.126	SE
36 DC 37 24	ment for, Z. M. Lindley	470.0°1 470,14.	S8 S8
1	Heat, a pparatus for u tilizing waste, W. A. Kone-	469.860	80
11	Helmet attachment, C. Hoppe	469,774 470,131 470,043	86
20	Holder. See Carbon sheet bolder. Checkrein holder. Eyeglassholder. Pen holder. Pho- tographic roller holder. Stage scenery holder.		Sh
76 29 38 31	Hoop or band fastener and tightener, C. Sparks	469,889 470,127	Sh
31 19	BUIL	210,100	SI
73	B Hose coupling, air brake, G. Cain	469,707 469,830 470,099	SI SI SI
17 31 48	Indicator Sea Brake niston indicator Station	470,099 469,9 3 9	81
18 79 35	Inhaler, H. P. Roberts	470,011 469,674	Si Si
35 39 38 4	Insecticide, H. Berkefeld. Insulator, C. N. Hammond.	469,892 469,940 470 100	Si Si Si
35	Intrenching tool, W. H. Hamner	21U,166	81 81 Sr
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		470,008 469,85± 469,863
:	nam. Latting tool, K. Guhring Latch, J. Marks. Lathe, Dabigren & Svensson. Lathes, Sauge for screw cutting, S. Jeffs. Leather gauge, F. Clark Leveler, road, A. Zoldoske. Lifting jack, J. H. Cory.	469,813 470,142 469,680 469,966 469,832
:	Leather gauge, F. Clark. Leveller, road, A. Zoldoske. Lifting jack, J. H. Cory. Light, See Dead light. Lighthing arrester, Scott & Wurts. Liquid meter, automatic, M. E. Reisert. Lithographic plates, manufacturing, O. Kindermann,	469,632 470,013 469,798
	Lock. See Cylinder lock. Nut lock. Permuta- tion lock. Switch lock.	469 704
ļ	Locomotives propolling goes for tropped (1)	469,951 469,799 469,844 470,078
	Scott. Looms, picker check for, R. W. Andrews. Lubricator. See Axle lubricator. Force feed lubricator. E. McCov.	469,671
	lubricator, Lubricator, E. McCoy. Lubricator, Taylor & Edwards. Lung testing machine, coin-controlled, L. Donne Machinery, starting and stopping mechanism for, J. Patten.	469,713
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5 8 8	Railway switch signal, E. D. Bangs Railway switch signal, E. D. Bangs Railway trolley, electric, W. H. Morgan Railways, nower transmitting device for electric	. 469,927 . 470,099 . 469,893
ī 0 4	Railway troney, electric, W. H. Morgain. Railways, power transmitting device for electric E. H. Johnson. Razor strop, O. W. Castner. Reclining chair, adjustable, W. J. Williams et al. Reel. See Fisbing reel. Refykerating and ice making apparatus, absorber	. 469,94 . 469,893 . 470,027
8 7 7	ror ammonia, N. Johnson. Refrigerator, C. F. Paige. Refuse carrier frame, J. W. Zimmerman.	. 469,943 . 470,163 . 470,093
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0	Sash, window, J. B. Coben. Sawing machine, wood, J. P. Currie. Scaffelding, J. Anderson. Screwdriver, F. A. Howard. Screwdriver, J. W. Jones. Separator. See Grain separator.	. 470,13 . 469,73 . 470,03 . 470,00 . 470,05
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2 0 2	Signal. See Gong signal. Railway signal. Railway switch signal. Signals, compensator for . J. J. Turner Signaling apparatus, W. B. Chalmers. Signaling device, train, J. Lynch. Sizing compound, A. Steinhauser. Skiving machine. J. R. Scott. 470,015 Sliding gate, A. Wilkinson. Smoke and Spark arrester and conductor, I. J. Hartford.	470,06 470,06 489,96 470,01
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1/2	
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Stove, regenerative hot blast, McClure & Amsler. Stoves, grates, etc., gas burner for. H. E. Earle	69,820 69,861
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Wagon Jack, F. Finsterer. Wagon, rotatable delivery, H. S. Tuthill	469,110 470,022
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