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References to former articles or answers should

give date of paper and page or number of question.

Inquiries not answered in reasonable time should 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

Minerals sent for examination should be distinctly marked or labeled.

INDEX TO NOTES AND QUERIES.	No.
Electrical	4568 4563 4564 4566 4562

(4559) T. R. asks: How can I make a machine to demagnetize watches? A. Make a sling like a small scale that will hold the watch in a horizontal position; to this attach a string, twist the string and allow it to untwist. While the watch is whirling rapidly gradually lower it toward the poles of a strong permanent magnet; then while it is still whirling, gradually remove it from the sling. If the first treatment does not thoroughly demagnetize the watch, you will be obliged to try it the second orthird time.

(4560) C. T. McM.—The plant popularly known as ragweed is Ambrosia trifida L. It is a plant with a rough hairy stout stem from 3 to 12 feet in height. The leaves are large and deeply three-lobed. The plant is common on moist river banks and has no medicinal properties.

(4561) F. P.-What you send is the seed of some species of milkweed (Asclepias) with their tufts of long silk hairs (coma). The material has been for stuffing pillows, but is worthless for any other pur-

(4562) P. J. H. asks: How do you find the theoretical value of a pound of coal in pounds water evaporated? A. The value of the combustion of coal is found from the known value of its chemical elements in their combination with the oxygen of the atmosphere in terms of the value of the amount of heat required to raise I pound of pure water at the temperature of greatest density one degree on the thermometric scale. This value is called a heat unit or thermal unit. The heat units of the various substances found in coal have been the subject of experiment by various chemists who do not exactly agree. The process is by burning a given amount of any element of combustion and ascertaining the number of pounds of water it will heat to some observed degree, and from these observations assign the heat units for each element. In this way coal is assigned an average of about 14,200 heat units per pound. In an experimental way it was also found that to evap orat 1 pound of water at, atmospheric pressure at its boiling point (212°) required as much heat as would raise 966 pounds of water 1 degree on the thermometer, which is called the latent heat of steam at atmospheric pressure. Then the total heats units in 1 pound of

coal divided by the heat units of evaporation gives the number of pounds of water evaporated by one pound 14200

of coal, viz., =14.7 lb.

In the practical operations of steam testing, the figures must be varied to suit the real combustion value of the coal and the amount of heat imparted to the water to raise its temperature from the normal temperature to the atmospheric boiling point, or to the temperature of evaporation. These points are illustrated in works on combustion and the generation of steam.

(4563) D. L., Jr., writes: In answer to query No. 4519 you state that the longest working electric railway is some five or six miles. Three have been running constantly here for a year past that exceed that length. The San Francisco and San Mateo Electric Railway has been running between San Francisco and Baden, a distance of 12 miles, from one central station, and over exceedingly heavy grades. The road is rapidly being pushed, 8 miles further, but whether or not it will be run from the same supply station I do not know. Another road runs between Oakland and Haywards, a distance of 10 miles; and another between Oakland and Berkeley, a distance of 8 miles. The extraordinary grades on the San Francisco and San Mateo road make it of peculiar interest. I think the Thomson-Houston system is used.

(4564) W. M. K. asks how to make

A.	Best yellow wax	50 j	parts.
	Veniceturpentine	7	**
	Lard	31/4	44
	Bole, elutriated	.36	**
Mi	and knowd thoroughly		

(4565) C. H. asks: 1. What would be the result if a 50 volt lamp was placed on a 75 volt circuit? A. The 50 volt lamp would absorb 11/2 times the current and would not last long. 2 What is the amperage of each, a 50 volt, and a 110 volt, 16 candle power lamp? A. The 50 volt lamp requires 1 ampere and the 110 volt lamp 1/2 an ampere. 3. What is the amperage of the Edison dynamo, described in SUPPLEMENT of March 5? A. When running 9 lamps, 41/2 amperes.

(4566) Engineer says: I am a locomotive engineer, 38 years of age, no family. I am out of work at present, with ample means to support me five years if necessary. Now I want to change my business. Do you think, by taking a couple of years course in mechanical eugineering and draughting, that I could improve my prospects much? What pay does a draughtsman get? Is the business crowded? Am I too old to begin? A. If you have a mind that you can control for studyand business, you can do much to forward vour position in life. You must be your own judge as to the drift of your mind toward mechanical work and construction. With this propensity you can get along quite fast, but remember there should be no idle hours at your time of life, although it is never too late to learn. We advise you to take a position in some machine shop near home at any kind of work or price, and go to work with your eyes open to all that is going on around you. Use all your evenings for study and draughting. Select from our catalogue such books on mechanics as you may need from time to time, and start in draughting with the SCIENTIFIC AMERICAN series, then take up a more advanced work. With perseverance and a love for your work you cannot fail. Salaries for draughtsmen, like engineers, depend upon talent and experience, say \$1,000 to \$2,000 per year.

(4567) G. F. H. writes: 1. Will the pieces of carbons that have been used in electric lights (coppered) do for making small bichromate tumbler battery without removing copper plating? A. The carbons will do, provided you remove the copper. This may be done by placing them in nitric acid for a few minutes. 2. Will you give numbers of any back issues of SUPPLEMENT giving instructions how to make a small motor sufficient for propelling small hunting and fishing boat? A. We think SUPPLEMENT No. 641 contains the information desired. 3. Would plunge battery, Fig. 394, p. 401, in "Experimental Science," answer the purpose for the running of same? A. Yez. 4. Is liquid ammonia ever used as a fertilizer for fruits or flowers? A. Yes; when diluted with ten volumes of water.

(4568) J. C. writes: By placing a disk of wire netting in the bottom of a dmner plate sprinkled with sugar, and covering the plate with another wire netting and running a wire from each disk to an induction coil or shocking machine, flies and other insects and small animals can be effectually shocked. The holes in the netting should be only large enough to allow the insects to reach the sugar through its meshes. By lighting upon the upper disk and reaching to the sugar or lower disk, the electric circuit is completed through the body of the insect.

TO INVENTORS

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess u equaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons 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. Address MUNN & CO, office Scientific American, 381 Broadway, New York.

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October 4, 1892, AND EACH BEARING THAT DATE.

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

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Dentist's chair, Johnston & Browne. 483,497 Derrick fork, G. L. Laughton. 483,365 Desk, F. P. Pooley. 483,664 Desks, seats, etc. to floors, device for detachably securing, F. E. Goodnow. 483,841 Digester, B. F. Radford. 483,842 Digester, B. F. Radford. 483,825,483,847 Dock, dry, W. W. Rich. 483,867 Door operating device, R. Hallenstein. 483,687 Doro operating device, R. Hallenstein. 483,687 Doubling and twisting machine, rolls for, J. N. Leonard. 483,900 Draught equalizer, P. Evans. 483,911 Draught equalizer, T. J. Miland. 483,938 Dress form, E. L. Mayer. 483,618 Dress stay, J. S. Crotty. 483,618 Dress stay, J. S. Crotty. 483,618 Dress form, E. L. Mayer. 483,618 Electric inght hanger, adjustable, H. L. Holt. 483,667 Electric inght, door lock switch for. C. Green. 483,739 Electric machines, commutator for, N. C. Bassett 483,732 Electric switch, D. H. Armstrong. 483,731 Electric switch, D. H. Armstrong. 483,731 Electric switch, A. Ekstrom. 483,732 Electric switch, A. Ekstrom. 483,734 Electric switch, H. Palste. 483,638 Electric-therapeutical instrument, J. W. Moliere. 483,745	Moulder's flask, F. Baugh 433,584 Money changer, J. Adams 483,673 Mortising device, A. E. Randie 483,673 Mortising device, A. E. Randie 483,673 Motor. See Current motor Gravity motor. Mower, lawn, H. L. Freeman 483,685 Nail machine, C. E. Houghton 483,685 Nail machine, C. E. Houghton 483,685 Nail puller, A. F. Street 483,587 Neckscarf, J. O. Nighthigale 483,587 Neckscarf, J. O. Nighthigale 483,687 Necklet fastener, F. R. Scofield 483,947 Needle swaging machine, I. T. Smith 483,915 Nut. self-locking, W. S. Neil 483,671 Nut. lock, T. Hibbs 483,921 Nut. self-locking, W. S. Neil 483,670 Office door indicator, J. Drew 483,980 Oiler, force feed, H. Jones 483,980 Oiler, force feed, H. Jones 483,680 Opera glass receptacle, coin-operated, J. J. McDade. 483,630 Opera glass receptacle, coin-operated, J. J. McDade. 483,532 Pack Hoof pad. Saddle pad. 483,532 Paper dampening machine, E. T. Fisher. 483,537 Paper cutting machine, A. Maim 483,363 Paper dampening machine, E. T. Fisher. 483,738 Paper frames for slates, etc., manufacture of, J. F. Fischer. 483,739 Paper p
Dentist's chair, Johnston & Browne. 483,497 Derrick fork, G. L. Laughton. 483,365 Desk, F. P. Pooley. 483,664 Desks, seats, etc. to floors, device for detachably securing, F. E. Goodnow. 483,841 Digester, B. F. Radford. 483,842 Digester, B. F. Radford. 483,825,483,847 Dock, dry, W. W. Rich. 483,867 Door operating device, R. Hallenstein. 483,687 Doro operating device, R. Hallenstein. 483,687 Doubling and twisting machine, rolls for, J. N. Leonard. 483,900 Draught equalizer, P. Evans. 483,911 Draught equalizer, T. J. Miland. 483,938 Dress form, E. L. Mayer. 483,618 Dress stay, J. S. Crotty. 483,618 Dress stay, J. S. Crotty. 483,618 Dress form, E. L. Mayer. 483,618 Electric inght hanger, adjustable, H. L. Holt. 483,667 Electric inght, door lock switch for. C. Green. 483,739 Electric machines, commutator for, N. C. Bassett 483,732 Electric switch, D. H. Armstrong. 483,731 Electric switch, D. H. Armstrong. 483,731 Electric switch, A. Ekstrom. 483,732 Electric switch, A. Ekstrom. 483,734 Electric switch, H. Palste. 483,638 Electric-therapeutical instrument, J. W. Moliere. 483,745	Moulder's flask, F. Baugh 433,584 Money changer, J. Adams 483,673 Mortising device, A. E. Randie 483,673 Mortising device, A. E. Randie 483,673 Motor. See Current motor Gravity motor. Mower, lawn, H. L. Freeman 483,685 Nail machine, C. E. Houghton 483,685 Nail machine, C. E. Houghton 483,685 Nail puller, A. F. Street 483,587 Neckscarf, J. O. Nighthigale 483,587 Neckscarf, J. O. Nighthigale 483,687 Necklet fastener, F. R. Scofield 483,947 Needle swaging machine, I. T. Smith 483,915 Nut. self-locking, W. S. Neil 483,671 Nut. lock, T. Hibbs 483,921 Nut. self-locking, W. S. Neil 483,670 Office door indicator, J. Drew 483,980 Oiler, force feed, H. Jones 483,980 Oiler, force feed, H. Jones 483,680 Opera glass receptacle, coin-operated, J. J. McDade. 483,630 Opera glass receptacle, coin-operated, J. J. McDade. 483,532 Pack Hoof pad. Saddle pad. 483,532 Paper dampening machine, E. T. Fisher. 483,537 Paper cutting machine, A. Maim 483,363 Paper dampening machine, E. T. Fisher. 483,738 Paper frames for slates, etc., manufacture of, J. F. Fischer. 483,739 Paper p
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Dentist's chair, Johnston & Browne. 483,497 Derrick fork, G. L. Laughton. 483,365 Desk, F. P. Pooley. 483,664 Desks, seats, etc. to floors, device for detachably securing, F. E. Goodnow. 483,664 Digester, B. F. Goodnow. 483,424 Digester, B. F. Radford. 483,823 Digester, B. F. Radford. 483,823 Digesters, lining, H. Brungger. 483,823 Dock, dry, W. W. Rich. 483,697 Door operating device, R. Hallenstein. 483,697 Doubling and twigting machine, rolls for, J. N. Leonard. 483,697 Draught equalizer, P. Evans. 483,919 Draught equalizer, P. Evans. 483,919 Draught equalizer, T. J. Miland. 483,838 Dress form, E. L. Mayer. 483,618 Dress form, E. L. J. Gerber. 483,932 Drilling mec banism, Coxe & Salmon. 483,930 Drying coffee, etc., apparatus for, S. L. Huizer. 483,932 Drying coffee, etc., apparatus for, S. L. Huizer. 483,932 Drying paparatus, E. J. Gerber. 483,932 Electric battery, thermo, P. Giraud. 483,732 Electric light hanger, adjustable, H. L. Holt. 483,640 Electric lights, door lock switch for. C. Green. 483,732 Electric machines, commutator for, N. C. Bassett 483,732 Electric switch, A. Exstrom. 483,732 Electric switch, A. Exstrom. 483,732 Electric switch, B. Ekstrom. 483,732 Electric switch, H. T. Palste. 483,732 Electric switch, H. T. Palste. 483,732 Electric switch, A. Exstrom. 483,735 Electro-therapeutical instrument, J. W. Moliere. 483,732 Electric safety attachment, J. Messner. 483,698 Elevator. See Grain elevator. 483,698 Elevator safety attachment, J. Messner. 483,698 Engine. See Lever power engine. Rotarysteam engine. Evaporating apparatus, O. B. Stiilman. 483,637 Eyeglasses, F. G. Schmidt. 483,737 Eyeglasses, F. G. Schmidt. 483,737 Eyeglasses, F. F. Hawkins. 483,737	Moulder's flask, F. Baugh 483,483 Money changer, J. Adams 483,973 Mortising device, A. E. Randle 483,693 Motor. See Current motor Gravity motor. Mower, lawn, H. L. Freeman 483,693 Mower, lawn, W. L. Frisbie 483,685 Nail machine, C. E. Houghton 483,685 Nail puller, A. F. Street 483,587 Neckscarf, J. O. Nighthingale 486,683 Necktie fastener, F. R. Scofield 483,597 Necktie fastener, F. R. Scofield 483,947 Needle swaging machine, I. T. Smith 483,941 Nut, self-locking, W. S. Neil 483,921 Nut, self-locking, W. S. Neil 483,921 Olier, force feed, H. Jones 483,961 Olier, force feed, H. Jones 483,962 Obera glass receptacle, coin-operated, J. J. 483,630 Opera glass receptacle, coin-operated, J. J. 483,630 Package, A. Baker. 483,630 Package, A. Baker. 483,630 Package, A. Baker. 483,630 Package, A. Baker. 483,572 Paper boxes, machine for making, J. Godfrey </td
Dentist's chair, Johnston & Browne. 483,437 Derrick fork, G. L. Laughton. 483,735 Desk, F. P. Pooley. 483,664 Desks, seats, etc. to floors, device for detachably securing, F. E. Goodnow. 483,841 Digester, B. F. Radford. 483,842 Digester, B. F. Radford. 483,842 Digesters, lining, H. Brungger. 483,855,483,857 Dock, dry, W. W. Rich. 483,867 Door operating device, R. Hallenstein. 483,667 Doubling and twigting machine, rolls for, J. N. Leonard. 483,679 Draught equalizer, P. Evans. 483,619 Draught equalizer, T. J. Miland. 483,938 Dress form, E. L. Mayer. 483,618 Dress stay, J. S. Crotty. 483,618 Dress stay, J. S. Crotty. 483,618 Dress form, E. L. Mayer. 483,618 Electric ighth hanger, adjustable, H. L. Holt. 483,607 Electric ights, door lock switch for. C. Green. 483,732 Electric machines, commutator for, N. C. Bassett Electric ights, door lock switch for. C. Green. 483,732 Electric switch, A. Ekstrom. 483,732 Electric switch, A. Ekstrom. 483,732 Electric switch, B. Ekstrom. 483,732 Electric switch, A. Ekstrom. 483,732 Electric switch, B. Ekstrom. 483,732 Electric switch, A. Ekstrom. 483,737 Electric switch, A. Ekstrom. 483,737 Electric switch, A. Expleyator. 4	Moulder's flask, F. Baugh 483,483 Money changer, J. Adams 483,973 Mortising device, A. E. Randle 483,693 Motor. See Current motor Gravity motor. Mower, lawn, H. L. Freeman 483,693 Mower, lawn, W. L. Frisbie 483,685 Nail machine, C. E. Houghton 483,685 Nail puller, A. F. Street 483,587 Neckscarf, J. O. Nighthingale 486,683 Necktie fastener, F. R. Scofield 483,597 Necktie fastener, F. R. Scofield 483,947 Needle swaging machine, I. T. Smith 483,941 Nut, self-locking, W. S. Neil 483,921 Nut, self-locking, W. S. Neil 483,921 Olier, force feed, H. Jones 483,961 Olier, force feed, H. Jones 483,962 Obera glass receptacle, coin-operated, J. J. 483,630 Opera glass receptacle, coin-operated, J. J. 483,630 Package, A. Baker. 483,630 Package, A. Baker. 483,630 Package, A. Baker. 483,630 Package, A. Baker. 483,572 Paper boxes, machine for making, J. Godfrey </td
Dentist's chair, Johnston & Browne. 483,437 Derrick for L. Laughton 483,765 Desk, P. Pooley 483,765 Desk, P. Pooley 483,765 Desks, seats, etc. to floors, device for detachably 862,765 Best, P. Pooley 483,764 Best, Seats, etc. to floors, device for detachably 862,765 Best, P. Pooley 483,764 Bigester, B. F. E. Goodnow. 483,864 Bigester, B. F. Rungger 483,825 Bigester, B. F. Rungger 483,825 Bigester, B. F. Brungger 483,825 Bigesters, B. F. Brungger 483,825 Bigesters, B. F. Brungger 483,825 Bigesters, B. F. Brungger 483,825 Book dry W. R. Bellonger 483,825 Book dry W. R. Bellonger 483,827 Book dry W. R. Bellonger 483,827 Book dry W. R. Bellonger 483,927 Boutling and twigting machine, rolls for, J. N. Praught equalizer 7. J. Miland 483,936 Drung equalizer 7. J. Miland 483,338 Breas form, E. Mayer 483,827 Brilling mechanism, Coxe & Salmon 483,933 Drying coffee, etc., apparatus for, S. L. Huizer 483,937 Brilling mechanism, Coxe & Salmon 483,932 Dyeing apparatus, E. J. Gerber 483,932 Dyeing apparatus, E. J. Gerber 483,932 Dyeing apparatus, E. J. Gerber 483,932 Electric inghts, door lock switch for, C. Green 483,732 Electric machines, commutator for, N. C. Bassett 483,732 Electric machines, commutator for, N. C. Bassett 483,732 Electric machines, commutator for, N. C. Bassett 483,732 Electric switch, D. H. Armstrong 483,732 Electric switch, A. Ekstrom 483,732 Electric witch, A. Ekstrom 483,732 Electric switch, D. H. Armstrong 483,732 Electric parage and	Moulder's flask, F. Baugh 433,584 Money changer, J. Adams 483,673 Mortising device, A. E. Randie 483,673 Mortising device, A. E. Randie 483,673 Motor. See Current motor Gravity motor. Mower, lawn, H. L. Freeman 483,685 Nail machine, C. E. Houghton 483,685 Nail machine, C. E. Houghton 483,685 Nail puller, A. F. Street 483,587 Neckscarf, J. O. Nighthigale 483,587 Neckscarf, J. O. Nighthigale 483,687 Necklet fastener, F. R. Scofield 483,947 Needle swaging machine, I. T. Smith 483,915 Nut. self-locking, W. S. Neil 483,671 Nut. lock, T. Hibbs 483,921 Nut. self-locking, W. S. Neil 483,670 Office door indicator, J. Drew 483,980 Oiler, force feed, H. Jones 483,980 Oiler, force feed, H. Jones 483,680 Opera glass receptacle, coin-operated, J. J. McDade. 483,630 Opera glass receptacle, coin-operated, J. J. McDade. 483,532 Pack Hoof pad. Saddle pad. 483,532 Paper dampening machine, E. T. Fisher. 483,537 Paper cutting machine, A. Maim 483,363 Paper dampening machine, E. T. Fisher. 483,738 Paper frames for slates, etc., manufacture of, J. F. Fischer. 483,739 Paper p

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Press. See Cotton press. Printing press. Pressure gauge, duplex, F. H. Haskell. Printer's quoin, E. A. & A. G. Schmid. Printers' use, block for, E. B. Sheldon. Printing press, S. G. Goss. Printing inplement, B. H. Korsmeyer. Protector. See Coffin protector. Pruning implement, W. D. Sunderlin. Prunley. See Nail puller. Pulley, split, J. C. Fiester. Pruning implement, W. D. Sunderlin. Pulley, split, J. C. Fiester. Pullp drainer, G. L. Jaeger. Pump, H. H. Cummings. Pump, M. M. Smith. Pump and drip per for barrels, combined, C. B. Aligood. Puzzle, C. S. Ford. Pruzzle, J. A. Sloan. Printing, J. A. Sloan. Printing, B. Aligood. Proceeding, Proceeding, B. Rutler. Rack. See Hay and stock rack. Hose rack. Pen and letter rack. Rail fastening, H. Alexy. Rail joint and chair, J. H. Campbell. Rail joint fastening, R. Morrell. Railway, cable, J. B. Mahaffey. Railway chair, W. Wharton, Jr. Railway, cable, J. B. Mahaffey. Railway grip, cable, C. Vogel. Rail way rails, combined foot and brace for, V. Angerer. Railway rails, combined foot and brace for, E. Samuel.	483,613 483,792 483,814 483,687	- FERNA
foroperating, E. H. Korsmeyer	483,564 483,928 483,588	
Pulley, Split, J. C. Fiester. Pulp drainer, G. L. Jaeger. Pump, H. H. Cummings. Pump, M. M. Smith	483,647 483,847 483,666 483,637	1
Pump and dripper for barrels, combined, C. B. Alignod Puzzle, C. S. Ford Puzzle, J. A. Sloan	483,757 483,912 483,772	0005.1
Pyroxyline, apparatus for the manufacture of transparent sheets of, E. N. Todd	483,701 483,600	
and letter rack. Rail fastening, H. Alexy. Rail joint and chair, J. H. Campbell. Rail joint fastening, R. Morrell. Railway, cable, J. B. Mahaffey.	483,518 483,898 483,854 483,965	
Railway chair, W. Wharton, Jr. Railway, electric, W. G. Murphy, Jr. Railway grip, cable, C. Vogel Railway grip peable, Vogel & Mointosh Railway or form cate sutematic J. R. Reneon	483,592 483,856 483,775 483,774]
Railway rail fastening, R. Morrell. Railway rails, combined foot and brace for, V. Angerer. Railway rails, combined foot and brace for, E.	483,855 483,889	00
Samuel. Railway signal case, L. A. Boyd. Railway switch, J. N. Strong. Railway switch, J. N. Strong. Railway tie, metall, S. H. Wilson. Railway tie, metallic, R. Morreli Railway tie, metallic, B. F. & M. F. Sparr. Railways, closed conduits for electric, W. G. Creighton.	483,528 483,818 483,821 483,853	
Railway tie, metallic, B. F. & M. F. Sparr	483,773 483,761	0
Recorder. See Time recorder. Ree. See Wire reel.	483,659	1
	483,907 483,876 483,552 483,551	
Retrigerator and Iruit car, combined, H. C. Goodell Refrigerator car, ventilated, H. C. Goodell Register. See Cash register. Rice, etc., polishine, E. L. Cantwell Rice, etc., polishing, G. B. Prochaska. Rivet setting machine, Bray & Pope. Rock drilling machinery, A. E. Chodzko. Rod coupling, Buese & Cowling. Roller. See Shade roller.	483,899 483,868 483,598	
Rock drilling machinery, A. E. Chodzko. Rod coupling, Buses & Cowling. Roller. See Shade roller. Roller mill feed, H. R. Shaw Rolling mill, G. W. Jones. Rolling mill, G. W. Jones. Rolling mill, P. L. Kimberly Roof, L. H. Montross. Root cutter, D. Maxwell. Rotary steam engine, F. A. Small Roundabout, J. L. Buford. Routing machine, W. Greaves Roving frame, Morgan & McMullan Sad iron, J. Sabold. Sad iron heater F. R. Sutton Saddle pad, harness, R. Whitman Safety pin, hook and eye, E. M. Wright. Sanitary seal for covers of toilet vessels, C. Smart. Seeb fastenor A. S. Fisher.	483,896 483,983 483,926	
Rolling mill, P. L. Kimberly Roof, L. H. Montross Root cutter, D. Maxwell Rotary steam engine, F. A. Small Roundshout, J. Ruford	483,929 483,966 483,743 483,726 483,530	
Routing machine, W. Greaves Roving frame, Morgan & McMullan Sad Iron, J. Sabold Sad iron heater F. R. Sutton	483,573 483,573 483,769 483,878	
Saddle pad, harness, R. Whitman. Safety pin, hook and eye, E. M. Wright Sanitary seal for covers of toilet vessels, C. Smart. Sash fastener A. S. Fisher.	483,754 483,886 483,948 483,837	
Safety pin, hook and eye, E. M. Wright. Sanitary seal for covers of toilet vessels, C. Smart. Sash fastener, A. S. Fisher. Sash fastener, H. C. Webb. Saw attachment, H. C. Webb. Saw set, H. B. Smith. Sawing machine, drag, Kirkscey & Bowden. Scale, coin-operated weighing, G. G. Merry. Scale, weighing and recording, R. McFarlane Scarf clasp, J. J. Hallah an. Screen. See Window screen. Seal lock, J. B. Price Seal oke, J. B. Price Seat. See Spring seat. Sewing machine feeding mechanism, B. F. Bellows. Sbade roller, spring, E. F. Hartsborn.	483,763 483,971 483,793 483,630	
Scale, com-operated weighing, G. G. Merry Scale, weighing and recording, R. McFarlane Scarf clasp, J. J. Hallahan Screen. See Window screen. Seal lock. J. B. Price	483,787 483,675 483,783	
Seat. See Spring seat. Sewing machine feeding mechanism, B. F. Bellows. Sbade roller, spring, E. F. Hartshorn.	483,800 483,553	-
Shatt attach ment, vehicle, F. M. Merrick Shaving case, H. T. Peters Shears. See Animal shears. Shelf bracket, T. Corscaden.	483,568 483,579 483,834	:
Sewing machine feeding mechanism, B. F. Bellows, Sbade roller, spring, E. F. Hartsborn, Shade supporter, window, S. T. Stuver, Shaft attach ment, vehicle, F. M. Merrick, Shaving case, H. T. Peters, Sheis, J. St. Stuver, Sheris, See Animal shears, Sheis pracket, T. Corscaden, Shoe holder, E. Leger, Silver ores, smelting complex, C. James, Silver ores, Silver ores, Smelting complex, C. James, Silver ores, Silver ores, Smelting complex, C. James, Silver ores, Smelting machine, E. G. Thoren, Speed measure, O. Knapp. Spinning mule, P. N. Dexter, Jr., Spittoon for railway cars, E. L. Harris, Spool boring machine, J. M. Parker, Spring, See Checkrein spring, Spring seat, S. G. Scarritt, Square, tailor's measuring, P. N. Arvidson, Stand, See Barrel stand, Medicine stand, Steam boiler, J. D. Hulings,	483,963 483,962 483,614 483,580 483,944	
Sowing machine, E. G. Thoren. Speed measure, O. Knapp. Spinning mule, P. N. Dexter, Jr. Spittoon for railway cars, E. L. Harris.	483,623 483,846 483,906 483,918	
Spring. See Checkrein spring. Spring seat S. G. Scarritt Square, tailor's measuring, P. N. Arvidson Stand. See Barrel stand. Medicine stand.	483,699 483,521	
Stereotype plate and base, J. R. Cummings Stereotype plates, composition for, W. A. Force. Storage battery, E. B. Knowles	483,805 483,544 483,716 483,563	
Stov e, lamp, S. L. Walker. Stove mat, W. J. Turpin. Stove plate, vapor, F. J. Little. Street sweeper, A. B. Vandemark.	483,591 483,880 483,932 483,702	
Stand. See Barrel stand. Medicine stand. Steam boiler, J. D. Hulings. Stereotype plate and base, J. R. Cummings. Stereotype plates, composition for, W. A. Force. Storage battery, E. R. Knowles. 483,562. Store service apparatus, R. Gornall. Stove, lamp, S. L. Walker. Stove mat, W. J. Turpin. Stove plate, vapor, F. J. Little. Street sweeper, A. B. Vandemark. Sunshade, vehicle, L. V. Luce. Supporter. See Box supporter. Invalid supporter. See Box supporter. Invalid supporter. See Box supporter. Surgical chair, F. E. Case. Suspending device, J. I. Johnson. Switch. See Electric switch. Electric snap switch. Railwayswitch.	483,933 483,900 483,615	
Switch. See Electric switch. Electric snap switch. Railway switch. Tack driving machine, E. Patten	483,747	-
Tack driving machine, E. Patten Tank. See Lampfilling tank. Tanning vat, leather, B. P. Bradford. Telegraph system, police, C. A. Rolfe. Telephone receiver, F. Gross. Tenoning machine marking attachment, C. J. Zimmerman.	483,734 483,768 483,718 483,897	
Zimmerman. Thermometer scale, S. E. Ward. The. See Railway i.e. Time recorder, workman's, A. L. Jaynes. Time recording mechanism, D. E. Pursell. Time recential G. Besiss.	200,047	
Time recording mechanism, D. E. Pursell. Time piece dial, G. Reiss. Tire, pneumatic, T. W. Robertson Tobacco hiller, W. P. & O. Marshall Tongs, flooring and siding, G. W. Miller. Tool handle, Potter & Dangerfield Toy animal figure, C. M. Smith Transon lifter, C. L. Boehme. Trap for sinks, etc., D. A. Horgan. Trolley catcher, J. J. Hoppes. Trough. See Feed trough. Tug hook, harness, J. Green.	483,583 483,567 483,571 483,865	
Toy animal figure, C. M. Smith Transom lifter, C. L. Boehme Trap for sinks, etc., D. A. Horgan. Trolley catcher, J. J. Hoppes. Trough. See Feed trough.	483,727 483,597 483,961 483,689	
Trough. See Feed trough. Tug hook, haruess J. Green. Turning machine. wood. Bennett & Haidacher. Valve, automatic regulating, J. M. Foster Valve check, E. W. Craine. Valve check, E. F. Prince, Jr. Valve controller, hygrometric, C. W. Rogers Vapor burner, J. S. Wood. Vat. See Tanning vat. Vehicle running ear, H. T. Goudrich	. 483,959 483,760 483,979 . 483,603	
Valve controller, hygrometric, C. W. Rogers Vapor burner, J. S. Wood Vat. See Tanning vat. Vehicle running gear, H. T. Goodrich	. 483,725 . 483,885 . 483,717	
Vehicle running gear, H. T. Goodrich. Vehicle running gear, H. T. Goodrich. Velo ipin, G. H. Fien. Velocipede saddle, J. A. Hunt. Velocipede saddle, F. M. Slocum Ventilator. See Air ventilator. Ventilator, Gross & Beck Vessel closure, J. B. McNabb. Vessels, apparatus for ejecting ashes from, H.	. 483,559 . 483,875 . 483,650	
Vessel closure, J. B. McNabb. Vessels, apparatus for ejecting ashes from, H. See	. 483,575 . 483,770 . 483,627	
Violin, D. F. Burgner. Wadding from cellulose and cotton, process of and machine for manufacturing, C. Waibel. Wall, floor, or roof of buildings, A. J. Judge	. 483,897 f . 483,590 . 483,927	
Wash board breast rest, O. T. & J. H. Lapham Washstand water receptacle, N. O. Bond Washing machine, W. F. Elkins Washing machine, R. D. Hulbert. Washing machine, J. A. Mengel	. 483,786 . 483,526 . 483,547 . 483,721	
Vessels, apparatus for ejecting ashes from, H See Vine cutter, S. H. Francis. Vine holder, J. L. McGarrell. Violin, D. F. Burgner. Wadeing from cellulose and cotton, process of and machine for manufacturing, C. Waibel. Wall, floor, or roof of buildings, A. J. Judge Wash board breast rest, O. T. & J. H. Lapham. Washstand water receptacle, N. O. Bond Washing machine, W. F. Elkins. Washing machine, J. A. Mengel. Washing machine, J. A. Mengel. Washing powder, E. F. O'Neal. Watch charm, Smith & Grapewine Watchmaker's depthing and adjusting tool, G. W. Harris Water meter H. R. Williams	. 483,861 . 483,634 . 483,949	1
watermasers depthing and adjusting tool, of W. Harris. Water meter, H. B. Williams. Weighing apparatus, automatic, M. E. Reisert Weighing machine, grain, Droste & Bruns Weighing oil tank, Bachelder & Lovejoy (r). Well drilling machine, G. Zuk	483,95 483,636 483,90 11,27	1 59
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Althouse Window hair, E. B. Gildersleeve Window frame pocket, F. V Phillips Window screen, W. E. Pierce Wire netting machine, B. Scarles	483,52 483,60 483,96 483,78 483,96	899

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	Wire reel, J. W. Buchanan 483,830 Wood working machines, feed roller for, J. Davis 483,711 Wrench. See Pipe wrench. 483,632 Wrench. L. I. Folk et al. 483,803 Zinc furnace, O. Sumaghi 483,334 Zinc, reducing, C. James 483,662	1
13	Wood working machines, feed roller for, J. Davis 483,711	ľ
792	Wrench I I Folk et al. 483 903	ı
314 187	Zinc furnace, O. Sumaghi 483.934	
	Zinc, reducing, C. James	
564		
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248	DESIGNS.	
647 647 666	Badge, A. T. Hatch	١
666	Corset, D. H. Warner	Г
637	Cuff holder stand, H. C. Frank	
757	Organ case top. O. E. Brandt	
912	Spoon, A. Ludwig	
772	Badge, A. T. Hatch 21,875 Corset, D. H. Warner 21,883, 21,884 Cuff bolder stand, H. C. Frank 21,876 Game board, M. E. Cameron 21,881 Organ case top, O. E. Brandt 21,881, 21, 2 Spoon, A. Ludwig 21,873 Table vessel, C. V. Helmschwied 21,878 Vase, etc., S. Starkey 21,877	П
920	Vase, etc., S. Starkey	ı
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	TRADE MARKS.	
518	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
398	Antipyretic, G. E. Dixon	ì
354	Bath tubs, G. Booth. 21.806 Boots and shoes, Smith Bros. 21.816 Boots and shoes, T. A. Wicher & Co. 21.838	
65	Boots and shoes, T. A. Wicher & Co	
354 265 592 356 775	Antipyretic, G. E. Dixon	
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	21,833 21,837 2	
889	Chemical products, F. von Heyden	
373	Cigars, Foster-Hilson Company	
528	pany	
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341 853	Jyes or colors, Farberei Glauchau, vormals U. Seyfert. 21,842	
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	Corn Planter Company	
659	Corn Planter Company	
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376	Oranges, D. Tillson	ı
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726 530 671	Lye, powdered, Champion Chemical Works 21,809	l
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573 769 878	Neff et al	L
754	Neff et al. 21,855 Toy, C. A. Benner 21,852 Type writing machine, Wyckoff, Seamans & Bene-	l
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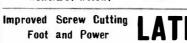


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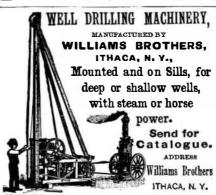
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