We are sole manufacturers of the Fibrous Asbestos Removable Pipe and Boiler Coverings. We make pure asbestos goods of all kinds. The Chalmers-Spence Co. 419 East 8th Street, New York.

Crescent Solidified Oil and Lubricators. Something new. Crescent Mfg. Co., Cleveland, O.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Emerson's PROOK of Saws free. Reduced prices for 1885. 50,000 Sawyers and Lumbermen. Emerson, Smith & Co., Limited, Beaver Falls, Pa.

Hoisting Engines, Friction Clutch Pulleys, Cut-off Couplings. D. Frisbie & Co., Philadelphia, Pa.

"How to Keep Boilers Clean." Send your address for free 88 page book. Jas. C. Hotchkiss, 86 John St., N. Y. Barrel, Keg, Hogshead, StaveMach'y. See adv. p. 76. Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 46. Hercules Lacing and Superior Leather Belting made by Page Belting Co., Concord, N. H. See adv. page 158. Timber Gaining Machine, All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

Manufacture of Soaps, Candles, Lubricants, and Glycerine. Illustrated. Price, \$4.00. E. & F. N. Spon, New

Brass and Iron Working Machinery, Die Sinkers and Screw Machines. Warner & Swasey, Cleveland, O. Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works. Drinker St., Philadelphia, Pa.

Supplement Catalogue.—Persons in pursuit of infor n of any special engineering, mechanical, or seien tific subject, can have catalogue of contents of the Sci-ENTIFIC AMERICAN SUPPLEMENT sent to them free The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.



#### HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication.

References to former articles or answers should give date of paper and page or number of question. In quirles not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all, either by letter or in this department, each must take his turn.

Special Written Information on matters of

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

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of Minerals sent for examination should be distinctly marked or labeled.

- (1) H. R. writes: We are about to lath and plaster a room in basement of store, to be used a laundry. Can you suggest any way to effectually keep the fumes out of the store? A. Cover the ceiling upon the beams with tarred roofing paper well lapped, then fur and lath, or paint the ceiling after plastering.
- (2) E. S. asks the cause of an engine knocking or thumping when oil or tallow is put in the cylinder? A. Possibly the piston rings are loose or have play between the head and follower. The lubrication giving them an easy motion, the inletting of steam at each end would send them alternately against the oppo-
- (3) J. M. H. writes: Why does the iron made now rust so badly and decay, while the iron made many years ago rusts comparatively but little? A. The iron made 40 to 50 years ago in the United States was largely charcoal iron, and was purer and better than the same grades as made at the present day. Our common iron is filled with slag, and looks coarse and fibrous when rusted to show the grain. There is good iron stove pipe to chimney. Water gauge and gauge cock made now at a price, such as the Swedes, Norway, and on side of shell. Take steam from top of shell. Ausable horse nail iron.
- (4) F. H. L. asks: 1. What are the soft scribed in Supplement, 161, and how are they to be obtained? Are they malleable iron castings? A. The castings referred to are made from soft gray iron. They place. Malleable iron castings are unsuited to this purto, with several coils, although a number of coils would not considered in this figure. undoubtedly increase the efficiency of the machine. For a small machine, we know of nothing better than that : described in the Supplement referred to. Your form of armature would be very good if for a larger machine than that described. 3. Can you suggest a better pliable insulator than silk coated with shellac varnish? A. We know of no better insulator than silk or shellac, or both, for wire.
- (5) G. M. L. asks: How can I make an induction coil, such as are used in medical batteries. also what number of the Scientific American or Sup-PLEMENT contains descriptions for making different coils? I wish to make a coil that will best operate on a Smee battery. A. To make an induction coil for medical purposes, use a magnetic core formed of a bundle of soft iron wires three-eighths of an inch in diameter and 4 inches long. Wind this with 3 or 4 thicknesses the primary. Wrap the primary coil with 2 or 3 layers

rections for making induction coils.

- (6) J. D. L. writes: I wish to make an induction coil that will give an inch spark. Will one 6 inches long and 3 inches in diameter be large enough? The primary coil is 2 layers of No. 18 silk insulated copper wire; how much secondary wire will I need? How large and how many condenser plates will I need? A. We think your coil will be too small to yield a one inch spark. Better follow directions given in SUPPLEMENT, 160; it will cost little, if any, more to make a coil of that size. We cannot without considerable trouble give you detailed information for making a coil to give a spark exactly one inch long.
- (7) G. A. C. writes: In the Scientific AMERICAN of July 11, 1885, Note 1, there is a recipe for a cement which is proof against even boiling acids. Now, I wish to know if I can make battery cells of India rubber, say 2 in. square by 4 in. high, and cement with the above, so that they will last. If not, will you please inform me of a way to make them? A. By employing a cement made of gutta-percha, pitch, and sh lac, equal parts melted together, you will be able to cure the corners of your battery cells together, success fully. We would advise, however, binding the corners with strips of soft rubber, attached by means of the
- (8) G. S. B. asks: 1. Why does the cloudiness of the air and the number of rainy days in the year increase gradually from the equator to the polar regions, while the annual quantity of rainfall decreases in the same direction? A. Because the atmospheric currents move from the equator toward the poles, carrying moisture, which is precipitated from decreasing temperature, until finally, in the higher latitudes, the clouds near the earth are seen only in light drizzling rains. The fogs of the northern latitudes are mostly produced by the evaporation from the warm sea in contact with or into a cold atmosphere, which condenses the moisture to fog. 2. Why do fogs and clouds reign supreme in the polar regions except during the winter? A. Although there is much fog on the sea in high latitudes, their supremacy is a misnomer, prompted probably by comparison with sunny clim
- (9) J. D. C.—The belt has no influence upon the regulating power of the flywheel, whether it runs on the flywheel as a pulley or on a separate pulley. The placing of a belt upon the flywheel as a pulley or on a separate wheel or pulley is entirely a matter of convenience in arranging the transmission of power. The weight of flywheel and pulley on an engine shaft at their radius of gyration is the real measure of their equalizing power, although the belting and shafting of pullcys that are running regularly are an additional aid.
- (10) V. W.—The eyebrows may be darkened permanently by the use of a silver hair dye, which can be obtained from any druggist. The dealers in ladies' hair, etc., will also furnish you with suitable preparation to use. For coarse skin, etc., we can only recommend you to consult with some competent phy-
- (11) C. S. asks how to waterproof the tackle and rigging of vessels. A. Either of the followingcan be used: 1. India rubber in small pieces 1 ounce, boiled oil 1 pint; dissolve by heat, then add 1 pint hot boiled oil, stir well, and cool. 2. Melt in 1 pint boiled oil 2 ounces each of beeswax and yellow resin. These solutions should be used when warn
- (12) E. W. writes: I have a small engine, 2 inches bore by 31/2 inches stroke. What size boiler is necessary, and how is the best way to make? A. Your engine will give you a half horse power with 75 pounds steam. You will require a boiler having 10 square feet of heating surface; a cylinder of three-sixteenths inch iron, 16 inches diameter, well riveted, 2 feet long, with 20 tubes 1 inch, heads 1/4 inch. Set vertical on an iron furnace lined with firebrick, such as used in stoves, with a sheet iron cap on top of boiler and
- (13) F. W. G. asks: 1. What amount of weight would borts or black diamonds (when set in drill iron castings to be used for the electric machine de- bits) hold up without crushing? Suppose the bit stood on rock, and the pressure was downward, from weight of drill rods upon the bit. A. The borts will not crush when the drill rods stand upon them in the are better for the purpose than malleable iron. You can drill hole or on ordinary stone, always provided that probably secure such castings in foundries in your own care is used in letting the rods and bit down, so as not to hammer the borts out of their sockets; also pose unless thoroughly annealed. 2. Is an armature not to turn the bit when great weight is on it, which wound with several coils much superior to that wound may also tear the borts out of their setting. 2. At with one, and would it increase the power of the ma- what speed are diamond drills generally rotated when chine described in SUPPLEMENT, 161? If so, what numbering ordinary rock? A. The speed of the periphery ber of coils would give the best results, and how would of diamond drill should be from 50 to 75 feet per you construct the armature? Would it not be best to minute. 3. What amount of twisting or torsion strain use a number of pieces of Norway sheet iron about one would 3 inch lap-welded gas pipe stand if made from sixteenth cut in spur wheel form, and all fastened to- good iron? A. The torsional strength of 3 inch gas gether and keyed on the axis, for the core? A. It would pipe is 4 tons at 1 foot from center. Its safe working be difficult to construct an armature of the size referred strain is one-quarter of this. The coupling joint is
  - (14) A member of the House of Representatives, U. S., asks the materials, quantities, and manner of making the starch by which laundries put the fine polish on shirt bosoms, etc. A. This information is given in answer to query 7 in Scientific AMERICAN for December 12, 1885, and has frequently been published by us.
  - (15) J. P. P.—It is extremely doubtful if you can rip 11/2 pine and hard wood with a 6 or 8 inch saw with any speed or comfort. You will find it hard work to cut half through hy foot nower. You can rabbet with a wide saw or a wabble saw. We can recommend "Art Furniture Designs," 4to, \$3.00; Eastlake's "Hints on Household Taste," 8vo, \$3.00, which we can furnish.
- (16) E. R. B. asks: Does the bile ever of writing paper, or place it in a suitable thin spool; enter the stomach? If so, does it remain long enough to wind on the spool 4 layers of No. 18 magnet wire for be a cause of biliousness? A. The hepatic duct, which conveys the bile from the liver, opens, not into the

No. 36 silk covered wire. Supplement, 160, gives di-inches below. There is normally, therefore, no bile ever in the stomach, but it is abnormally often thrown backward into it, and thus produces irritation and nausea. Bilious vomiting is not a cause of biliousness as the term is used; it is the result of it.

> (17) J. C. S. asks the materials used in the manufacture of a paint sold under one of the special trade marks used by paint combinations which the trade has on sale. A. We cannot be expected to know their ingredients, nor to state their eculiarities in these columns, if we did know them. We do not consider any of them equal to pure white lead and oil. The spurious whites made to imitate white lead mostly have baryta for their base, mixed with cheap white earths for bulk. We consider them dear to use, cheap

> MINERALS, ETC.—Specimens have been received from the following correspondents, and examined with the results stated

F. B.—The specimen is pyrite, or sulphate of iron.

#### INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted.

March 2, 1886,

## AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.] Aerial navigation, ship for, L. A. Beardsley...... 336,984

	Air compressor. hydraulic, W. Thomas	337 900	
	Alarm. See Electric leak alarm.	i	ì
	Amalgamator, J. Wilkins	3 <b>36,970</b> !	ì
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	Barrel, wooden, W. M. Allyn	337,110	1
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:	Becker		1
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,	Boot or shoe, rubber, J. S. Owner		]
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)	stiffeners for, Riedell & Litch	337,082	
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ı	Bung, venting, F. R. & G. W. Tibbitts Burner. See Gas burner. Lamp burner.	337,211	
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,	Powell & Nolan	837,195	1
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ı	Car brake, P. A. Gambaro		
,	Car brake and starter, J. F. Morell	337,278	
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ı	Car coupling, J. H. Harrington Car coupling, G. M. Veteto		1
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5	Car, railway, R. H. Wyman	<b>337,10</b> 6	
3	Car seat recorder, Bywaters & Burke		
	Car starter, W. H. Johnson		١.
•	Car, stock, G. Grossman.		
l	Car wheels, machine for rolling, T. W. Bean		
;	Cars, track sanding apparatus for street, W. T.		1
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ı	Carriage body, J. Delahunty		
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١	Cultivator, F. H. Austin	336,884
ļ	Cultivator, D. & R. B. Motherwell	337,222
i	Curtain fixture, G. H. Ba Rr	337,043
)	Curtain pole ring, A. D. Field	
, ¦	Cut-off valve, J. P. Simmons	
ĺ,	Cutter. See Biscuit cutter. Stalk cutter. Straw- berry runner cutter. Vegetable cutter. Wire	
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,	Damper, stove or range, A. M. Blakesley  Digger. See Potato digger.	os7,238
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)	ton & Rouse	336,941
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) . }	Drier. See Boot drier. Grain drier. Drill. See Fork drill.	
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5	Electric lighting system, Mackie & McCarty	387,004
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5 7 7 7 7 1 1 7 7 1 1 1 1 1 1 1 1 1 1 1	336,961, Bain	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,555 337,068 337,208 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196
5 7 7 7 7 1 1 7 7 1 1 1 1 1 1 1 1 1 1 1	336,961.  Bain	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,315 337,315 337,315 337,308 337,202 337,203 337,192 337,262 337,193 337,192 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,183
7777)	336,961.  Bain	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,555 337,068 337,268 337,203 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196
5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator. See Water elevator.  Elevator bucket, H. B. Haigh  Elevator safety attachment. H. R. Ferris  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine.  Envelope machines, drying attachment for, E. H. Woodford  Evaporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fabric turfing machine, M. F. Connett, Jr  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney.  Feed water heater, J. Mahoney.  Fence post, J. Burns  Fence stay, wire, W. C. Gholsou  Fences, machine for building wire, W. H. Bige-	336,962 337,010 336,992 336,947 337,384 337,199 336,916 337,355 337,088 336,976 337,203 337,192 337,203 337,192 337,192 337,192 337,192 337,192 337,193 337,192 337,193
55 7777))) 117744 2211 3355 3513	336,961. Bain	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,556 337,088 336,976 337,203 337,192 337,196 337,293 337,196 337,292 337,198 337,198 337,198 337,198 337,198 337,293 337,198 337,293 337,198 337,293
5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	336,961.  Bain	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,255 337,083 336,976 337,293 337,196 337,196 337,196 337,196 337,196 337,263 337,182 337,182 337,183 337,182 337,183 337,183 337,183 337,183 337,183 337,183
5 777 D 2 2 7 7 1 1 7 1 1 3 5 5 5 5 1 3 7 7 5 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	336,961. Bain	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,315 337,315 337,315 337,252 337,088 337,212 336,922 337,192 337,262 337,192 337,192 337,192 337,192 337,192 337,192 337,192 337,193 337,212 336,829 337,213 337,213 337,213
5 777)) 234 2 77) 1774 2211 335 35 35 37 37 37 37 37 37 37 37 37 37 37 37 37	Bain	336,962 337,010 336,992 336,947 337,189 336,916 337,317 336,916 337,317 336,902 337,063 337,192 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,193 337,210 336,899 337,259 337,119 336,899 337,259 337,119 336,899 337,259 337,119 336,897 337,210 336,897 337,210 336,897 337,210 337,210 337,210 337,210 337,210 337,210
5 777))) 284	Baln	336,962 337,010 336,992 336,947 337,384 337,199 336,916 337,355 337,088 336,976 337,203 337,192 337,203 337,192 337,193 337,192 337,193 337,192 337,193 337,213 337,213 337,214 337,214 337,214 337,054
5 777) 0 284 7 1 1 3 5 5 5 5 8 1 3 7 7 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6 6 6 6	Baln	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,556 337,088 336,976 337,227 336,902 337,196 337,203 337,196 337,203 337,198 337,198 337,210 336,829 337,119 336,839 337,259 337,119 337,210 336,927 337,119 336,839 337,259 337,119 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210 337,210
5 7 7 7 D L 7 7 L 7 L	Bain  Electric machines, armature for dynamo, F. Bain  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator safety device, A. O. Wensche  Elevator safety attachment. H. R. Ferris  Elevator safety device, A. O. Wensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steam engine.  Envelope machines, drying attachment for, E. H. Woodford  Exporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Mahoney  Feed water heater, J. Burns  Fence post, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fifth wbeel anti-rattler, J. Long  Fille, bill and letter, J. S. Vanhorn  Filtering device, bill and letter, J. S. Vanhorn  Fittering device, bill and letter, J. S.	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,556 337,088  336,976 337,203 337,192 337,196 337,292 337,196 337,292 337,198 337,198 337,199 337,196 337,291 337,196 337,292 337,196 337,293 337,196 337,293 337,196 337,293 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,196 337,198
5 777) 0 234 7 7 1 1 3 5 5 5 5 3 1 3 5 7 0 5 5 5 2 0 0	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty.  Electrical conductor, H. A. Clark  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator. See Water elevator.  Elevator bucket, H. B. Haigh  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steam engine.  Envelope machines, drying attachment for, E. H. Woodford  Extension key, J. H. Shaw  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing machine, M. F. Connett, Jr. Fare boxes, money drawer for, W. H. Harrisor  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Mahoney  Fence stay, wire, W. C. Gholsou  Fence stay, wire, W. C. Gholsou  Fericizer distributer, J. H. & T. Dodds  Fifth wbeel anti-rattler, J. Long  File. bill and letter, J. S. Vanhorn  File handle, J. Chantrell	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 336,976 337,227 336,902 337,196
5 777) D 23 1 7 1 1 2 2 1 1 3 5 5 5 5 2 2 3 3	Bain  Electric machines, armature for dynamo, F. Bain  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator safety device, A. O. Wensche  Elevator safety attachment. H. R. Ferris  Elevator safety device, A. O. Wensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steam engine.  Envelope machines, drying attachment for, E. H. Woodford  Exporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Mahoney  Feed water heater, J. Burns  Fence post, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fifth wbeel anti-rattler, J. Long  Fille, bill and letter, J. S. Vanhorn  Filtering device, bill and letter, J. S. Vanhorn  Fittering device, bill and letter, J. S.	336,962 337,010 336,992 336,947 337,384 337,193 336,976 337,255 337,203 337,203 337,192 337,203 337,192 337,203 337,192 337,192 337,192 337,192 337,192 337,192 337,193 337,193 337,194 337,194 337,194 337,194 337,194
5 777))) 23; 7 7 1 1 3 5 5 5 5 3 1 3 3 7 7 5 5 2 2 3 3 0 1 0	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty.  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator. See Water elevator.  Elevator bucket, H. B. Haigh  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steum engine.  Envelope machines, drying attachment for, E. H. Woodford  Exaporators, apparatus for automatically feeding liquids to, M. C. Barden  Extension key, J. H. Shaw  Extension key, J. H. Shaw  Extension soreen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fabric turfing machine, M. F. Connett, Jr. Fare boxes, money drawer for, W. H. Harrisor  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fith wbeel anti-rattler, J. Long  File, bill and letter, J. S. Vanhorn  File handle, J. Chantrell  Fire extagal, R. L. De Lisser  Fittering device, bill and letter, J. S. Vanhorn  File arm boxes, attachment for, H. H. Rebbeck  Fire arm, G. W. Cilley  Fire extinguisher, prairie, A. W. Bumsey  Fire extinguisher, prairie, A. W. Bumsey  Fire extinguisher, prairie, A. W. Bussey  Fire extinguisher, prairie, A. W. Bussey	336,962 337,010 336,992 336,916 337,199 336,916 337,355 337,088  336,976 337,227 336,902 337,196 337,196 337,196 337,196 337,262 337,196 337,213 336,899 337,192 337,196 337,214 337,050 337,112 336,997 337,114 337,064 337,154 337,196 336,894 337,196 337,196 337,196 337,197 337,119 336,897 337,119 336,997 337,119 336,997 337,119 336,997 337,1154 337,060 337,154
5 77) D 28 7 7 D L 7 4 2 1 3 5 5 5 3 1 3 7 7 D C 6 5 2 0 3 0 L D 6 5 L	Bain  Electric machines, armature for dynamo, F. Bain  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical onductor, H. A. Clark  Electrical for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator. See Water elevator.  Elevator safety device, A. O. Wuensche  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine.  Envelope machines, drying attachment for, E. H. Woodford  Evaporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fabric turfing machine, M. F. Connett, Jr  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Fraucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Burns  Fence post, J. Burns  Fence post, J. Burns  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fith wbeel anti-rattler, J. Long  File, bill and letter, J. S. Vanhorn  Filter alarm boxes, attachment for, H. H. Rebbeck  Fire alarm boxes, attachment for, H. H. Rebbeck  Fire extinguisher, prairie, A. W. Bumsey  Fire extinguisher, prairie, A. W. Bumsey  Fire extinguisher, prairie, A. W. Burns  Fire extinguisher, prairie, A. W. Bumsey  Fire extinguisher, prairie, A. W. Burns  Fire pot, tinney's, J. Carter  Fisherman's minnow boat, F. F. Ward	336,962 337,010 336,992 336,947 337,384 337,193 336,916 337,355 337,083 337,192 337,203 337,192 337,203 337,192 337,203 337,192 337,306 337,306 337,306 337,262 337,262 337,192 336,893 337,193 336,893 337,193 337,194 336,893 337,195 337,196 337,196 337,198 336,894 337,198 336,894 337,198 336,894 337,198 336,894 337,086 337,344 337,086 337,344 337,086
5 77700 28 70 174 221 35 55 31 370 3 5 5 2 0 3 3 0 1 0 6 1 3	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty.  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al.  Electrolier, extension, J. T. Robb  Elevator. See Water elevator.  Elevator bucket, H. B. Haigh  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steum engine.  Envelope machines, drying attachment for, E. H. Woodford  Exporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Farboxes, money drawer for, W. H. Harrisor  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Mahoney  Feed water heater, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fifth wbeel anti-rattler, J. Long  File, bill and letter, J. S. Vanhorn  File handle, J. Chantrell	336,962 337,010 336,992 336,916 337,317 337,884 337,199 336,916 337,316 337,088  336,976 337,203 337,193 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,293 337,196 337,293 337,196 337,312 336,927 337,154 337,312 336,927 337,154 337,312 336,927 337,154 337,318 337,318 337,319
5 777)0 234 701714221 355 55 31370552030 10613332	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical onductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator. See Water elevator  Elevator safety device, A. O. Wuensche  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine.  Envelope machines, drying attachment for, E. H. Woodford  Evaporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fabric turfing machine, M. F. Connett, Jr  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Fraucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Burns  Fence post, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fith whoel anti-rattler, J. Long  File, bill and letter, J. S. Vanhorn  Filter alarm boxes, attachment for, H. H. Rebbeck  Fire extinguisher, hand grenade, A. E. Lytle  Fire escape, J. Bien  Fire escape, J. Bien  Fire extinguisher, prairie, A. W. Bumsey  Fire post, J. Burns  Fire extinguisher, prairie, A. W. Bumsey  Fire post, J. D. Jenkins  Fire post, J. Burns  Fire post, J. Burns  F	336,962 337,010 336,992 336,947 337,384 337,199 336,916 337,315 337,315 337,088 336,976 337,227 337,236 337,192 337,192 337,192 337,192 337,193 337,262 337,193 337,262 337,193 337,262 337,193 337,262 337,193 337,262 337,193 337,262 337,193 337,262 337,193 337,193 337,193 336,893 337,214 337,036 337,154 337,154 337,164 337,064 336,894 336,897 337,064 336,898 337,066 337,066 337,066 337,066 336,981 336,898 336,897
5 777)0 284 7 7 117421 35 55 81 3770 50 3 65 20 30 10 61 3 3 3 20	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator safety device, A. O. Weensche  Elevator safety device, A. O. Weensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steam engine.  Envelope machines, drying attachment for, E. H. Woodford  Exaporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, O'Brien & Weaver  Fence post, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fifth wbeel anti-rattler, J. Long  Fille, bill and letter, J. S. Vanhorn  Filtering device, bill and letter, J. S. Vanhorn  Filtering device, bill and letter, J. S. Vanhorn  Fire extinguisher, hand grenade, A. E. Lytle  Fire extinguisher, prairie, A. W. Bumsey.  Fire extinguisher, prairie, A. W. Bumsey.  Fire extinguisher, hand grenade, A. E. Lytle  Fire pot, J. Denkins  Fire extinguisher, prairie, A. W. Bumsey.  Fisherman's minnow boat, F. F. Ward  Fisherman's minnow boat, F. F. Ward  Fishing hook and device for	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 337,556 337,088  336,976 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,292 337,196 337,293 337,196 337,293 337,196 337,396 337,396 337,397 337,397 337,397 337,398 338,398 336,987
5 777) 0 22 7 7 1 1 7 1 2 2 1 1 3 5 5 5 5 2 0 3 0 1 0 6 1 3 3 3 2 2 0 1	Baln  Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electroiler, extension, J. T. Robb  Elevator. See Water elevator.  Elevator safety device, A. O. Wuensche  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine.  Envelope machines, drying attachment for, E. H. Woodford  Evaporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fabric turfing machine, M. F. Connett, Jr  Fare boxes, money drawer for, W. H. Harrison  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Mahoney  Feed water heater, J. Burns  Fence post, J. Burns  Fence post, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fertilizer distributer, J. H. & T. Dodds  Fith wbeel anti-rattler, J. Long  File bill and letter. J. S. Vanhorn  Filier extinguisher, hand grenade, A. E. Lytle  Fire escape, J. Bien  Fire extinguisher, hand grenade, A. E. Lytle  Fishing hook and device for capturing fish, Scotland & Cordon  Fishing lines,	336,962 337,010 336,992 336,947 337,384 337,199 336,916 337,355 337,088 336,976 337,227 337,238 337,192 337,193 337,194 337,084 337,084 337,084 337,084 337,086 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893 336,893
5 777) 0 234 7 7 1 1 7 1 2 2 1 1 3 5 5 5 5 2 0 3 0 1 0 6 1 3 3 3 2 2 0 1 1	Electric machines, armature for dynamo, F. Baln	336,962 337,010 336,992 336,916 337,317 337,356 337,088  336,976 337,227 337,256 337,192 337,193 337,194 337,086
5 777)0 284 7 70177421 35 55 8113770503552030 1061332201 18	Electric machines, armature for dynamo, F. Baln  Electric machines, circuit connection for dynamo, N. McCarty  Electrical conductor, H. A. Clark  Electrical machine, frictional, A. L. Robbins  Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al  Electrolier, extension, J. T. Robb  Elevator. See Water elevator  Elevator bucket, H. B. Haigh  Elevator safety device, A. O. Wuensche  Embroidering machine, Schmitz & Aldom  Engine. See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine.  Envelope machines, drying attachment for, E. H. Woodford  Exaporators, apparatus for automatically feeding liquids to, M. C. Barden  Excavating apparatus, odorless, P. F. Dewey  Extension key, J. H. Shaw  Extension screen, adjustable, T. C. Peck  Fabric turfing implement, M. A. Rafter  Fabric turfing machine, M. F. Connett, Jr  Fare boxes, money drawer for, W. H. Harrisor  Fastener, metallic, G. W. McGill  Faucet, force and drain, F. R. Tibbitts  Feed water heater, J. Mahoney  Feed water heater, J. Mahoney  Fence post, J. Burns  Fence stay, wire, W. C. Gholson  Fences, machine for building wire, W. H. Bigelow  Fith wbeel anti-rattler, J. Long  Filter, centrifugal, R. L. De Lisser  Filtering device, bill and letter, J. S. Vanhorn  File handle, J. Chantrell	336,962 337,010 336,992 336,916 337,317 337,356 337,088  336,976 337,227 337,256 337,192 337,193 337,194 337,086
5 777) D 223	Electric machines, armature for dynamo, F. Baln	336,962 337,010 336,992 336,947 337,884 337,199 336,916 337,317 336,902 337,088 337,227 336,902 337,196 337,262 337,196 337,262 337,196 337,262 337,196 337,262 337,196 337,262 337,196 337,262 337,196 337,262 337,196 337,263 337,196 337,263 337,196 337,263 337,196 337,264 337,364 337,364 337,364 337,364 337,366 336,897 337,064 337,366 336,897 337,064 337,366 336,897 337,064 337,066 336,893 337,064 337,066 336,893 337,064 337,066 336,893 337,064 337,066 336,893 337,064 337,066 336,893 337,064 337,065 337,366 336,893 337,064 337,065 337,365 337,365
5 777) D 234 - 7 D 1714211 35 55 81137 D 5 0 3 0 1 0 5 1 3 3 2 2 0 1 1 3 7 6	Electric machines, armature for dynamo, F. Baln	336,963 337,042 337,010 336,992 336,947 337,384 337,199 336,976 337,255 337,203 337,203 337,192 336,976 337,203 337,192 336,893 337,192 336,893 337,259 337,119 337,312 336,893 337,259 337,119 337,312 336,893 337,259 337,119 337,312 336,893 337,259 337,119 337,312 336,893 337,259 337,119 337,312 336,893 337,259 337,154 337,154 337,154 337,154 337,154 337,158 337,158 337,158 337,158 337,158 337,158 337,158 337,158 337,158
5 777) 0 2 3 4 7 7 1 1 7 1 1 3 5 5 5 3 1 3 3 7 7 0 5 0 3 6 1 3 3 3 2 0 1 1 3 7 6 1	Electric machines, armature for dynamo, F. Baln	336,962 337,010 336,992 336,916 337,317 336,916 337,318 336,976 337,227 336,902 337,196 337,196 337,196 337,196 337,196 337,192 337,196 336,897 337,086 336,991 336,993 337,086 336,981 337,086
5 777) D 234 - 7 D 1714211 35 55 81137 D 5 0 3 0 1 0 5 1 3 3 2 2 0 1 1 3 7 6	Electric machines, armature for dynamo, F. Baln	336,962 337,010 336,992 336,947 337,384 337,193 336,976 337,255 337,203 337,203 337,192 337,203 337,192 337,203 337,192 337,192 337,192 336,893 337,259 337,192 336,893 337,259 337,193 337,194 336,893 337,259 337,194 336,893 337,259 337,194 336,893 337,259 337,194 336,893 337,259 337,194 336,893 336,993 337,259 337,154 336,894 337,366 337,367 336,893 336,9967 336,983 336,997 336,983 336,9863 337,366 337,366 337,366 337,367 336,893 336,9967 336,893 336,9967 336,893 337,992 336,963 337,361

Gas burner, regenerative, H. C. Campbell	Pattern lining, M. Stocker 3	37,030
Gas, electrical torch for lighting, J. D. Culp 336,898 Gas engine, G. C. Anthony 337,226	Picking or ginning machines, doffing apparatus for, S. R. Parkhurst	
Gas reg lator, J. E. Miller	Picture frame, G. H. Thonssen	37,033
Gasometer, G. E. Johnson	ture of, Caldwell & Smith 3	
Gate, G. A. Grant		·
Gate, F. W. Sensiba.       337,089         Gate, W. L. & J. C. Wilson       337,104		337,029
Generator. See Steam generator.	Pipe connection, B. P. Bower 3	
Glassmaker's mould, F. S. Shirley	Plaiting machine, R. W. Henderson	
Glassware, decorated, A. Hamprecht	Planter, corn, J. W. Harbin	
precht	Planter, lister corn, M. M. Holmes	37,156
Grain binder, PP. Coler	Plow, F. Reyner	36,946 37,107
Grain hulling and scouring machine, F. B. Rolle 337,284 Grain separator and cleaner, J. P. Bond 337,234	Plow, steam, G. Willard	36,969
Grinding mill, J. B. Allfree	Post. See Fence post.	
Guitar, J. Klueber	Posts, base for, W. H. Kellogg	37,163
Gun, magazine, A. Burgess	Potato digger, J. H. Lewis 3	
Hame, J. F. Knorr	Potato sprinkler, W. H. Moore	30,958
Hanger. See Coat hanger.  Harness ring helder, G. W. Swinehart 327,031	Printer's galley, D. W. Whitaker	87,218
Harrow, A. C. Evans	Pulley, E. C. Sooy	
Harrow, J. A. Minger       337,186         Harrow, disk, Phelps & Swift       337,017	Pulley, belt, F. Siebert	37,040
Harvester and binder, Whiteley & Bayley 337,220 Harvester reel, A. Stark	P mp, J. M. Laing	
Harvester reel, adjustable, J. H. Borse 337,285	Pump, centrifugal, W. O. Webber 3	37,216
Harvesting machine, cotton, C. T. Mason, Jr 337,007 Harvesting sack supporter, J. E. Poteet 337,194	Pump, chain, Tyler & Carter	887,894
Hat and coat hook, wire, F. Taylor	Klein	
Hay carrier, W. Louden	Punch, clinching, J. R. Watson 3	<b>37,</b> 036
Hay loader, L. H. Robbins	Punching machine, R. H. Dowell	
Hay rack, J. A. Withrow	Rack. See Display rack. Hay rack. Rafts and booms, plug for, T. Irvine	
Heater. See Feed water heater. Hot water	Railway crossing, M. A. Dilley 3	37,253
heater. Holder. See Bedclothes holder. Billiard chalk	Railway gate, J. H. Pollard	36,908
holder. Bolt holder. Broom holder. Har- ness ring holder.	Railway signaling apparatus, F. N. Kelsey	
Honey box case and clamp, O. S. Foster 337,143	Railway system, pendant car elevated, P. Hale 3	37,149
Hook. See Back band hook. Fishing hook. Hat and coat hook. Whiffletree hook.	Railway time signal, C. Barry	
Horse bed, automatic, T. M. McDonough	Rake. See Hay rake. Horse rake. Ram, hydraulic. A. Baer	87 112
Horse rake and carrier truck, combined, J. H.	Reclining chair, L. Davis 3	
Barley	Recorder. See Car seat recorder. Reel. See Beltreel. Carpet cleaning reel. Har-	
Horseshoes, tool for expanding, H. Wilcox 337,221 Hose spanner, F. W. Gray 336,915	vester reel. Reel, J. M. Bannan 3	36.885
Hot water heater, H. K. Kriebel 337,068	Refrigerator, E. S. Farson 3	37,256
Household press, J. L. Smith	Refrigerator, well, J. E. Grosjean	1000
Hydraulic apparatus, L. Belder	regulator. Revolver, H. Schl nd	37.201
Hydrocarbon engine, J. P. Holland 337,000	Ring. See Curtain pole ring.	
Ice elevators, slush remover for, J. S. Field	Rivet, E. Flagg	
Indicator. See Musical key indicator. Inhalers, mixing and vaporizing device for, G. E.	Rotary engine, T. P. Coombs	
Johnson	Saddle, harness, W. S. Webster	87,217
Jack. See Jumping fack.	Sash lift, A. Wiggers 3	
Joints, stop for expansion, J. B. White	Saw setting and g mming tool, combined, D.  McDonough	
Key. See Extension key.  Knife sharpener, Shaw & Walden	Saw tooth, W. B. Risdon	
Knob, door, E. Thistle	Scraper and br sh, combined shoe, W. P. Man- ning	96 021
Lamp, electric arc, J. J. Wood	Screen. See Extension screen.	
Lamp reservoir, W. P. Butler	Seal lock, G. Koch	36,925
Lamps, heating attachment for, S. H. Dibble 337,135 Land roiler, Helm & Nickenich 337,264	Secondary battery, C. F. Br sh337,298, 35 Separator. See Cockle and grain separator.	37,299
Last, R. L. Campbell       337,131         Latch, night, Barnes & Woolaston       337,115	Cream separator. Grain separator. Sewing machine, boot and shoe, E. Adams 3	37 901
Leather stuffing, J. A. J. Shultz	Sewing machine, buttonhole, J. W. Lufkin 3	
Leg, artificial, R. C. D nham	Ships, apparatus for bending the ribs or frames of metallic, W. M. Bailey	37,118
Lift or hoist, J. M. de Aguirre y Lizaola 337,049 Lifter. See Sash lifter. Transom lifter.	Shirt, E. A. Krones	
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Lubricator. See Axle lubricator.	Shutter, inside, R. Blair 3	37,121
Manure pouch, T. M. McDonough	Siding and roofing board, J. W. Crabbe	
Wie	Signal. See Railway time signal. Signal horn, C. A. Volke	
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Measure, shoemaker's, A. S. Adler	Skate, L. Hull	37,151
Metal wheels, mechanism for the manufacture of, J. R. Little	Skate, roller, S. E. Shute	
Meter. See Electric c rrent meter.	faces for, J. A. Calantarients 33	
Middlings purifier, C. N. Smith	Smoke conductor, T. Rundle, Jr	37,267
Mould. See Glassmaker's mould.  Moulding, cloth covered, J. Maxwell	Smut machine, S. Wohlrab	
Moulding machines. cutter for. H. C. T nis 337,353	Snow plow, J. M. Poitras 33	37,078
Motion, device for converting reciprocating into	Soldering machine, can, D. M. Monroe 33	
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Mucilage bottle, W. H. Redington	mer	
Musical key indicator, O. H. Goodwin 337,320	Spring. See Carriage spring. Vehicle spring.	
Nail capping machine, J. M. Ellis	Spring motor, H. E. Marchand 33	37,177
Oar, jointed boat, B. F. Bennett         336,886           Ore cr sher, S. G. Rollins         337,085	Sprinkler. See Potato sprinkler.	
	Squib, E. J. Cotter	37,307
Organ stop action, combination, W. H. Price, Jr 337,348	Stamp, printing, H. Holt 33	37,331
Organs, pneumatic action for, I. Bassett	stand.	ar -
Oven, W. Miller         336,937           Overalls, C. Erlanger         337,316	Staple holding implement, C. E. Van Dusen 33 Steam boiler, Dougherty & Feeley	
Ox shoes, die for trimming, J. Deeble	Steam boiler, sectional, R. R. Zell (r) 1 Steam engine, J. T. Metcalfe 33	10,695
Package, cylindrical wooden, J. Tomlinson 336,963	Steam engine, fireless, M. Honigmann 33	
Package for belt dressing compounds, J. H. Bringold	Steam engine indicators, device for operating, J. R. Goddard	
Packing, W. White, Jr	Steam generator, J. R. Moore	
Pad. See Blotting pad.	Stocking supporter, C. J. Haley	
Paint exhibitor, T. C. Van Arsdale	Stopper fastener, F. W. Seymour 33	
Paper calendering machine, M. Solinger 337,028 Paper c tting machine, B. Sandmann	Stove lids, pattern for moulding, E. Evans 3 Stoves or ranges, plate joint for, N. A. Boynton 3	37,127
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Paper machines, stock regulator for, C. Potter 337,080 Paper tubes, machine for making, M. D. Knowl-	String gauge, C. F. Albert	37,224
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		Telephone receiver, S. Bergmann	65
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F.	337,142 356,896 337,047	Water elevator, J. C. Davis         337,2           Water, purifying, H. H. Smith         357,0           Water supply system, C. H. Godfrey         386,           Weather strip, T. J. Fitzpatrick         36,3	51 26 7 07
C	337,142 336,896 337,047 387,217 336,932	Water elevator, J. C. Davis.       337,2         Water, purifying, H. H. Smith.       837,0         Water supply system, C. H. Godfrey.       336,         Weather strip, T. J. Fitzpatrick.       336,9         Weather strip for doors, A. J. Davis.       537,2         Wheat and other grain, machine for peaking, J.	51 26 7 07 50
r. 	337,142 336,896 337,047 387,217 336,982 337,088	Water elevator, J. C. Davis	51 26 7 07 50
combined, D.	337,142 336,896 337,047 387,217 336,982 337,088	Water elevator, J. C. Davis	51 26 7 07 50 60
combined, D.	337,142 336,896 337,047 387,217 336,982 337,038 336,983 337,083 337,108	Water elevator, J. C. Davis	51 26 7 07 50 60
combined, D.	337,142 356,896 337,047 387,217 336,982 337,088 336,983 337,083 337,103	Water elevator, J. C. Davis	51 7 07 50 60 60 60 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
combined, D.	337,142 336,896 337,047 387,217 336,982 337,088 336,983 337,083 337,108 336,931	Water elevator, J. C. Davis	51 26 7 07 50 60 60 60 75 75 94 98 98
combined, D.	337,142 336,896 337,047 336,982 337,088 336,983 337,108 336,931 336,925	Water elevator, J. C. Davis	51 26 7 07 50 60 60 60 75 75 94 98 98
combined, D.	337,142 336,896 337,047 336,982 337,088 336,983 337,108 336,931 336,925	Water elevator, J. C. Davis	51 26 7 07 50 60 60 60 75 75 94 98 98
combined, D.  e, W. P. Man- leat337,298, itn separator. tor. Adams.	337,142 356,896 337,047 337,217 336,982 337,088 336,983 337,103 337,103 336,931 336,925 337,299 337,291	Water elevator, J. C. Davis	51 26 7 07 50 60 60 60 75 75 94 98 98
combined, D.  e, W. P. Man- leat	337,142 336,896 337,047 337,217 336,982 337,083 337,103 336,983 337,103 336,931 336,925 337,299 337,299	Water elevator, J. C. Davis	51 7 7 007 50 60 60 83 75 94 98 98 99 28
combined, D.  e, W. P. Man-  seat.  337,298,  in separator.  tor.  Adams.  Lufkin.  s or frames of	337,142 3,6,896 337,047 386,982 337,083 337,103 336,983 337,103 336,925 337,299 337,291 337,278 337,113 337,341	Water elevator, J. C. Davis	51 7 7 007 50 60 91 925 775 94 98 59 28
combined, D.  e, W. P. Man-  eat.  337,298,  sin separator.  tor.  Adams.  Lufkin  so or frames of	337,142 3,6,896 337,047 336,982 337,083 336,983 337,108 336,925 337,299 337,291 337,273 337,113 337,341 336,913 337,146	Water elevator, J. C. Davis	51 226 7 007 50 60 60 60 51 225 775 94 98 559 28
combined, D.  e, W. P. Man- leat	337,142 3.6,896 337,047 387,217 386,982 337,083 337,108 386,981 336,925 337,299 337,291 337,273 337,118 336,918 337,146 337,146 337,146 337,172	Water elevator, J. C. Davis	51 226 7 007 50 60 60 60 60 83 93 94 98 559 559 559 559 559 559
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 387,217 336,982 337,083 336,983 337,103 336,931 336,925 337,291 337,273 337,113 337,341 337,341 337,341 337,341 337,341 337,341	Water elevator, J. C. Davis	51 226 7 007 50 60 60 60 60 83 93 94 98 559 559 559 559 559 559
combined, D.  e, W. P. Man- leat.  337,298, sin separator. tor. Adams. Lufkin. bs or frames of	337,142 3.6,896 337,047 387,217 386,982 337,083 337,108 336,983 337,108 336,925 337,299 337,273 337,113 36,913 337,146 337,146 337,146 337,148 337,148	Water elevator, J. C. Davis	51 226 7 007 50 60 60 91 225 775 94 98 559 28 54 557 552 556 555 553
combined, D.  e, W. P. Man- seat. 337,298, sin separator. tor. Adams. Lufkin so or frames of	337,142 3,6,896 337,083 336,983 337,108 336,983 337,108 336,925 337,299 337,291 337,273 337,113 336,913 337,110 337,113 337,113 337,113 337,118 337,311 337,118 337,313 337,118 337,318	Water elevator, J. C. Davis	51 226 7 007 50 60 60 91 225 775 94 98 559 28 54 557 552 556 555 553
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 387,217 386,982 337,083 336,983 337,103 336,925 337,299 337,293 337,213 337,213 337,113 336,913 337,146 337,076 337,131 337,131 337,131 337,138 337,1398 337,198 337,098 337,098 337,098 337,098	Water elevator, J. C. Davis	51 26 7 07 50 60 60 60 60 60 60 60 60 60 6
combined, D.  e, W. P. Man- seat337,298, sin separator. tor. Adams. Lufkin. so or frames of	337,142 346,896 337,047 387,217 386,982 337,083 336,983 337,103 336,925 337,299 337,293 337,213 337,213 337,113 336,913 337,146 337,076 337,131 337,131 337,131 337,138 337,1398 337,198 337,098 337,098 337,098 337,098	Water elevator, J. C. Davis	51 26 7 07 50 60 60 60 60 60 60 60 60 60 6
combined, D.  e, W. P. Man- leat. 337,298, sin separator. tor. Adams. Lufkin. bs or frames of	337,142 346,896 337,047 387,217 386,982 337,083 337,108 336,981 336,925 337,299 337,293 337,273 337,113 337,146 337,146 337,146 337,146 337,188 337,188 337,188 337,188 337,188 337,188 337,188 337,188 337,188 337,188 337,188 337,205 337,121	Water elevator, J. C. Davis	51 26 7 7 7 60 60 60 60 60 60 60 60 60 60
combined, D.  e, W. P. Man- leat	337,142 336,896 337,047 337,217 336,982 337,083 337,103 336,925 337,299 337,299 337,213 337,118 337,146 337,146 337,138 337,146 337,136 337,136 337,136 337,136 337,136 337,136 337,205 337,257	Water elevator, J. C. Davis	51 26 7 7 7 7 7 7 7 60 60 60 60 60 60 60 60 60 60
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 387,217 386,982 337,083 336,983 337,103 336,925 337,293 337,293 337,293 337,213 337,113 336,913 337,146 337,076 337,121 337,1310	Water elevator, J. C. Davis	51 266 7 07 50 60 60 60 60 60 60 60 60 60 60 60 60 60
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 387,217 386,982 337,083 337,108 336,983 337,299 337,299 337,273 337,113 336,913 337,146 337,146 337,146 337,146 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,151 337,265 337,267 337,278 337,087 337,087 337,087 337,087 337,088	Water elevator, J. C. Davis	51 26 7 7 7 7 7 7 7 7 7 7 7 7 7
combined, D.  e, W. P. Man- seat	337,142 346,896 337,047 387,217 386,982 337,083 337,108 336,983 337,299 337,299 337,273 337,113 336,913 337,146 337,146 337,146 337,146 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,148 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,149 337,151 337,265 337,267 337,278 337,087 337,087 337,087 337,087 337,088	Water elevator, J. C. Davis	51 26 7 7 7 7 7 7 7 7 7 7 7 7 7
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 337,217 336,932 337,083 337,083 337,103 336,925 337,299 337,299 337,213 337,146 337,146 337,148 337,148 337,148 337,148 337,148 337,148 337,151 337,128 337,273 337,121 337,310 337,128 337,267 337,273	Water elevator, J. C. Davis	51 26 7 7 7 7 50 50 60 60 60 60 60 60 60 60 60 60 60 60 60
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 387,217 386,982 337,083 336,983 337,103 336,925 337,299 337,293 337,213 337,113 336,913 337,146 337,146 337,131 337,148 337,148 337,148 337,131 337,131 337,131 337,131 337,131 337,131 337,131 337,131 337,131 337,331 337,331 337,337	Water elevator, J. C. Davis	51 26 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
combined, D.  e, W. P. Man- leat. 337,298, sin separator. tor. Adams. Lufkin. sor frames of  ction of sur- cefor, E. Dum- mer. cle spring.	337,142 346,896 337,047 387,217 386,982 337,083 337,083 337,103 336,925 337,299 337,273 337,113 336,913 337,146 337,146 337,146 337,188 337,188 337,188 337,188 337,188 337,189	Water elevator, J. C. Davis	51 26 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
combined, D.  e, W. P. Man- leat	337,142 336,896 337,047 337,217 336,982 337,083 336,983 337,103 336,925 337,299 337,299 337,213 337,146 337,146 337,146 337,146 337,121 337,310 337,188 337,369 337,199 337,199 337,297 337,098 337,099 337,078 337,099 337,078 337,099 337,099 337,048	Water elevator, J. C. Davis	51 26 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
combined, D.  e, W. P. Man- leat	337,142 346,896 337,047 387,217 386,982 337,083 336,983 337,103 336,925 337,293 337,293 337,293 337,213 337,113 336,913 337,146 337,076 337,183 337,183 337,183 337,183 337,183 337,183 337,183 337,183 337,183 337,183 337,076 337,077 337,087	Water elevator, J. C. Davis	51 657 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
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