About seven years has been claimed for an entire for small boats, take a carpenter's rule and lay one leg change in the material of the human body. 2. Would on the outer edge of the propeller blade and move the it do to use sheet iron instead of plastering in a dwell- other leg parallel with the shaft and with this angle ing house? Our idea would be to cover it with two or strike off two lines which shall represent the angle of three thicknesses of paper. A. Sheet iron will make a the blade. Then multiply the diameter of the screw by poor finish for the interior of a house. We cannot re- 31416, which will be the circumference of the revolv commend it. 3. What power would be required to lift; ing blades. With this distance, measure at right 160 pounds, using an 8 inch and a 4 inch drum on the angles to the line representing the shaft, to meet the same shaft, so that the rope winds up on the large drum angular line representing the track of the blade. The while it inwinds from the small? I am an invalid and distance from this line along it e line of the axis to the am trying to invent an apparatus to lift me. A. It angular intersection first drawn is the pitch of the requires 80 pounds at periphery of the larger drum. screw. 4. How many pounds will a 1/4 inch, also a 1/4 inch rope lift without breaking? A. The breaking strain of a rope 1/4 inch diameter is very uncertain, from the value of material, and make 1/4 inch from 75 to 100 pounds, 1/2 incl from 300 to 400 pounds.

(4405) N. W. asks: 1. What use is made of old steel rails? Can they be rerolled into good new rails? I asked this question about three months ago, but no reply. A. There is a good market for old steel rails for rerolling and for forgings for heavy machinery. 2. Is there any good coking coal or anthracite coal in sufficient quantity for extensive mining purposes in the United States west of the Mississippi River? If so, where located? A. Good coking coal is found in Missouri, Kansas, Indian Territory, Colorado, New Mexico, Montana, and Washington. The coke manufacture is fast increasing in those States. There are small beds of at thracite in Colorado and Arkansas.

(4406) C. W. N. writes: Tell F. W. S. No. 4337 that if he will take an ordinary three-cornered file and grind it to a point, keeping the edges sharp a little way back of the point, he can bore a hole in plate glass with it by simply turning it with a brace and lubricating it with turpentine. Operate as though about to bore a hole in a bit of wood. I have a single gas burner that reaches out into the room from the wall and have made a queer discovery while playing with it. When turning off the gas very slowly the other evening, and when the flame had almost disappeared only a thin line of blue remaining, it commenced to buzz like a big fly. What was the cause of the noise? Ask your readers the significance of the peculiar shape of the prow of the gondola. A. The gas burner produced what is known as the musical flame. The sound is due to a series of explosions occurring regularly.

(4407) O. S. J. asks: Are there any cheap substances which might be used for bleaching bagging, which do not require to be washed out afterward? Permanganate of potassium is said to be used, and the color of the manganese oxide discharged by means of sulphurous acid. A. Gaseous chlorine largely diluted with air might do the bleaching. It should be followed by treatment with gaseous sulphurous oxide. 2. Are there any cheap preparations besides rubbe; r and gutta-percha which when applied to bagging would make it waterproof and at the same time flexible? A. To make it really waterproof under the conditions stated, India rubber is about the only effectual application. 3. I should also like to know of a substance like the above, but white. A. Palmitate of aluminum has been recom mended for waterproofing, but seems to have met but limited application.

(4408) E. R. J. asks: By what formula may I find quantitative analysis of a silver 25 cent piece, knowing the qualitative contents of the alloy, without the slightest injury, or altering of, by cutting or scratching the silver piece? I worked out a very simple specific gravity and algebraic formula, but lost it years ago. A. If only two constituents and of known specific gravity are in the coin, proceed as follows Weigh the coin in air and then in water.

Let a= weight in air in grammes. b =water c= specific gravity of silver. x = weight of silver in coin. Then we have  $x = \frac{dca - dcb - ac}{dca - dcb - ac}$ 

(4409) E. E. L. asks: What can I add to crude coal tar naphtha that will effectually disguise its odor or will deodorize it, and will not be expensive? A. Deodorization will be difficult. One method is to distill, rejecting the first and last portions of the distillate. Another is to treat it with a mixture of oil of vitriol and potassium bichromate, decant, wash and distill if necessary.

(4410) J. P. says: Please let me know what is the velocity of light and the velocity of elec tricity? Which travels faster, as I would like to know on account of a dispute which arose on that subject Could you let me know how it is proved, and by whos theory? A. Light has a velocity of about 187,000 miles per second. Electricity is supposed to be a phase of ether disturbance and its velocity as a current is the same as that of light. It however take some time for a current to attain full strength at the end of a length of conductor, and hence arise the different estimates of its so-called velocity. See Ganot's " Physics," \$5 mailed, for experiments and theory.

(4411) W. D. H. asks how draughtsmen make white letters on black ground. A. Take flake white and mix with water to the thickness of ink. Use with a pen.

(4412) A. L. W. asks: Which will bear the most weight, a hollow bar of round iron or a solid bar, each of the same size in diameter? If the hollow iron is the strongest, why is such the fact? A. The solid bar of iron is the strongest and will bear the great Pipe is only strongest for equal weights The additional size required for equal weight gives Dipe greater stiffness and stability for almost any use.

(4413) I. L. W. says: I desire to obtain a rule which is simple and practical, without recours to trigonometry, for the measurement of the pitch of a propeller wheel of the screw pattern. I am unable to find two rules alike, or two persons who use like rules. or who obtain exactly the same results in similar cases A. To measure the pitch of a propeller screw approxi mately and near enough for all practicable purposes Cock, gauge H. F. Blugham. 476,222

(4414) W. L. K. asks: Is there a way to print in bronze, or gold gilt direct, without having to use a brush or bronzing pad? I see a great deal of such work which looks as though it had been printed direct from type or rule. What puzzles me the most is to know how to print badges and do a nice job. A. We know of no way to print in bronze or gold gilt without using the bronzing pad. Most badges are printed in gold leaf on a bookbinder's press. You can make a fair looking job by printing with a good quality of gold ink.

#### 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 unequaled facilities for procuring patents everywhere. A syuopsis 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, 35i Broadway, New York.

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Hub attaching device, L. Harris. Hub, vehicle, W. Janiszewski.	476,199 476,018	Spinning spindle supl Spring. See Vehicle Spring, J. H. Sullivan Spring bolt, B. Bernst Springlers device for
Hydraulicmotor, W. H. Robinett Hydrocarbon burner, E. J. Thompson Lee chipping implement E. W. Firm	476,174 476,177 475,970	Sprinklers, device for of street, C. M. C. Stampholder, postma
Ice cream freezer, S. C. Moomy	475,748 476,232	of street, C. M. C. Stampholder, postma Stand. See Display s Steam boiler, J. Bairt Steam boiler, J. MacC. Steam boiler, J. MacC. Steam boiler, G. Steam boiler, J. C. Steam boiler, J. MacC. Steam boiler, G. Steam boiler, J. MacC.
Ice cream freezer, J. Sirrine.  Ice pick, combination, Loftus & Williams.  Indicator, San Billot form in discontinuation.	476,817 476,052	Steam boiler, A. M. D. Steam boiler, J. MacC.
Inhaler, A. Dow	476,132 476,190	Steam boiler, cross w Steamer, wheat, F. A Still and process, P. I
Insulator pin, F. M. Locke.  Jack. See Lifting jack. Locality of the control of t	476,207	Stoves, device for fill C. Nebse
Joint. Bee Woodwork folnt. Journal bearing. A. E. Smith.	475,990	C. Nebse Sulky, W. J. Wayne, Swimm er's use, leg at Swimming attachmen
Journal bearings, bushing for, F. Latnlip	475,983 476,158	Swimming equipment Syringe, T. B. Wilcox
holder. See Candie snade holder. Sleeve and cuf Hollow articles, soap holder. Hollow articles, apparatus for forming or shap- ling, F. Moorfield. Honey section press, F. M. Arcber. Hoof expander, J. G. Hipley Hook. See Coupling book. Snap hook. Hoops, etc., coupling for, M. Y. Campbell. Horse boot, J. Summers. Horse boot, J. Summers. Horse controlling device, D. T. Woodman. Hot air furnace, W. W. Kelsey. Hot water furnace, E. S. Manny. Hot water furnace, E. S. Manny. Hot water heater, T. Tree. Hub attaching device, L. Harris. Hub, vehicle, W. Janiszewski. Hydrauliem dor, W. H. Roblnett. Hydroard no houmer, E. J. Thompson. Ice chipping implement, E. W. Flynn. Ice cream freezer, C. L. Bellamy. Ice cream freezer, S. C. Moomy. Ice cream freezer, S. C. Moomy. Ice cream freezer, S. Sirrine. Ice pick, combi nation, Loftus & Williams. Indicator. See Bill-of-fare indicator. Inbaler, H. D. Cushman. Indicator. See Bill-of-fare indicator. Inbaler, A. Dow. Insulator pin, F. M. Locke. Jack. See S. Lifting jack. Jar filler, fruit, W. I. Leggett. Joint. See Woodwork Johnt. Journal bearing, A. E. Smith. Journal bearing, A. E. Smith. Journal bearing, A. E. Smith. Kniffe. See Butter knife. Knitting hose, F. W. Simons. Knitting machine, M. A. Semler.	476,084 475,989	Tablet displaying der Tackle block, F. X. R Telegraphy, T. Gotho Telephone, E. M. Hai
Knitting machine, circular, W. H. Zellers. Knob, sheet metal, A. T. Matthews.	476,110 475,880	Telephone, E. M. Har Telephone, S. F. Sher
Lacing nooss, maddine for serting, F. Egge Ladder, R. W. Whitehurst Ladder, extension. D. H. Crews.	. 476,006 . 476,179 . 475.935	Telephone, submarin Telephonograph, J. F Thill coupling Nurse
Ladder, step, T. F. Groves. Lamp, H. E. N. Mason	. 475,857 . 476,055	Ticket case or holder Tie. See Railway tie
Knife. See Butter knife. Knitting hose, F. W. Simons. Knitting machine, M. A. Semier. Knitting machine, Greular, W. H. Zellers. Knob, abeet metal, A. T. Matthews. Lacing hooks, machine for serting, F. Egge. Ladder, R. W. Whiteburst. Ladder, extension, D. H. Crews. Lander, extension, D. H. Crews. Ladder, extension, D. H. Crews. Lamp, H. E. N. Mason. Lamp, incandescent, J. Ball Lamp off gauge, T. A. McGovern. Lamp, pocket, J. H. Fawkes. Lamp, vehicle bracket, S. L. Reefy.	. 476,183 . 475,967 . 476,042	The stand, G. Holt Tire, bicycle, F. H. M. Tire, cushioned, G. T.
Lamp, vehicle bracket, S. L. Reefy	475,798	Tire, elastic, J. S. Sn

113	Lasting machine, C. P. Lawrence	476,206 476,070
233 795 137 061	Lasting machine, C. P. Lawrence Latch, A. & F. E. Richardson. Latch, turret, F. A. Lane. Leaf stripping machine, J. L. Myers. Letter box, house door, J. A. Faw. Letter box, house door, C. H. Scofield. Lifter, See Transom lifter. Lifting jack, W. H. Cox. Lifting jack, E. Garren. Lighting devices, etc., tane winding mechanism	476,234 476,139
882 788 987	Lifter. See Transom lifter. Lifting Jack, W. H. Cox. Lifting Jack, E. Garren	475,934 475,764
988 :	Lighting devices, etc., tape winding mechanism for, C. P. Booth	475,996 476,093
013 : 883 :	Lock, A. Arens.	475,914
038 - 051 -	Lock, E. C. Smith. Locomotive ash pan, C. J. W. Johnson. Logs, rafting, A. Van Kooy. Mailing or salesman's box, J. H. Barker. Mondle A. Comeson.	476,147 476,106
843 189 985 :	Mangle, A. Cousen.  Matcher, E. Benjamin.  Matrix making machine typewriting attachment,  Matrix making machine typewriting attachment,	
923	C. Sears	475,807
794 068 125	Measures, device for repairing tape, C. Kings- bury	475,944 476,136
813	Mechanical movement, G. W. Amos.  Mechanical movement, W. S. Huson	
029 787	Measuring vessel, graduated, J. P. Eustis.  Mechanical movement, G. W. Amos.  Mechanical movement, W. S. Huson	476,091 476,092
133 930 068 948		476,045 476,002
948 803	Motor. See Hydraulic motor. Railway motor. Motor, G. J. Altham	475,958 475,799
949 166	Motor, G. J. Altham.  Motor J. C. Reuter.  Mower, J. Stephani.  Mower, I. Stephani.  Mower, Iawn. Braun & Deck.  Mower, Iawn. T. Coldwell.  Mowing machine cutter, I. F. Bassford.  Nail machines, die for cut, C. E. Houghton.  Nails, machine for making hob, J. W. Ells.  Nut, adjustable spindle, Frazer & Brown.  Oiler, loose pulley, Richards & Burr.  Ore cleaning and concentrating apparatus, W.  Clancy.	475,799 475,828 476,184 475,976
920 021 151	Mowing macbline cutter, I. F. Bassford	476,030 475,768 476,191
759 USO 781	Nut, adjustable spindle, Frazer & Brown.  Oiler, loose pulley, Richards & Burr.  Ore cleaning and concentrating apparatus, W.	476,191 475,762 476,173
877   225	Clancy	476,035 475,824 475,832
797 672 017	Ores, roasting, C. W. Stickney. Organs, fresh wind box for pipe, Votey & Wood Organs, hydraulic motor for, J. W. Johnson. Organs, wind chest for pipe, Votey & Wood Packing, J. C. F. Jones. Packing receptacle, H. L. Boswell Paper box for chess, checkers, etc. J. C. Koob.	475,776 475,831 475,870
834	Paper coloring or moistening device. E. Hous-	210,010
939 186 753	man Paper cutting machine, G. W. Evans. Paper feeding machine, W. Womersley Paper, etc., machine for feeding and cutting, W. G. Chapin. Paper making machine I. Lee	476,204 475,761 475,839
936 995 033 167	Paper, etc., machine for feeding and cutting, W. G. Chapin Paper making machine, L. Lee	
170 945	G. Chapin.  Paper making machine, L. Lee.  Paper weight, letter scale, and calendar, combined. J. B. Price.  Paving block, Breden & Sheridan.  Pegging machine feeding mechanism, J. Hyslop,	476,067 475,924
071 089 992	Shotographic comore P Do Rarril	475 010
120 865 867	Photographic printing frame, F. A. Daly Piano action, repetition, J. C. Anton Pianos and organs, mechanical attachment for J.	476,115
069	E. Harriman, Jr	476,197
161 750 203 964	Pin. See Insulator gin. Pin. See Insulator gin. Pin. See Insulator gin. Pin. Pin. Pin. Pipe closer, adjustable, W. P. O'Brien. Pipe coupling, J. Connor. Pipe hanger, J. D. Dunning. Planter attachment, corn, G. J. Cline. Planter, check row corn, C. E. Kessler. Planter, seed, A. Matson. Plate securing device, J. A. Anderson.	475,767 475,793 476,188
,925 ,897 ,845	Planter attachment, corn, G. J. Cline. Planter, check row corn, C. E. Kessler.	476,227 476,036 476,149
,852 819	Planter, seed, A. Matson Plate securing device, J. A. Anderson Plow, double, J. S. Stockton	475,745 475,745 475,925
,855 ,111	Planter, eneck row corn, C. E. Ressier.  Planter, seed, A. Matson.  Plate securing device, J. A. Anderson.  Plow, double, J. S. Stockton.  Plow jointer, C. A. Stringer.  Pocketbook, etc., F. Muiler.  Popcorn, machine for coating, J. T. Woods.  Post. See Fence post.  Press. See Copying press. Fruit press.  Printing oil cloth apparetus for G. F. Eisen.	476,090 478,159 475,940
098 012	Post. See Fence post.  Press. See Copying press. Fruit press.  Printing, oil cloth, apparatus for, G. F. Eisen-	
.025 ,087 ,155	bardt. Propeller, screw, Street & Norton. Propeiling apparatus, vessel, H. Barcroft	476,135 475,826 475,122
	Propeller, screw, Street & Norton Propelling apparatus, vessel, H. Barcroft. Proportional meter, positive, J. Thomson. Protector. See Trousers protector. Pump, J. Burkholder. Pump, E. J. Schiller. Pump, E. J. Schiller.	476,103 475,847
.856 .875	Pump, E. J. Schiller Pump handle, C. A. Sellon Pump piston. H. J. Seymour.	475,895 476,082 475,812
,984	Pump, J. Burkbolder Pump bandle, C. A. Sellon Pump biston, H. J. Seymour Purfuer and separator, J. Mills. Rack. See Displayrack. Door rack. Race track, R. A. Howard.	476,231 475,769
,774 ,786	Radistor, iHmmick & Morgan. Railway conduit, electric, Carr & Ferrin. Railway cross tie, F. A. Byram.	479,849 476,128 475,999
.146 .046	Rack. See Display rack. Door rack. Race track, R. A. Howard. Radinator, Dimmick & Morgan. Raliway conduit, electric, Carr & Ferrin. Railway motor, electric, J. F. Shawhan. Railway rail, J. T. O'Shea. Railway signal system, W. G. Wattson. Railway tie, F. S. Ketchum. Railway trolley safety attachment, M. A. Yeak-ley.	475,970 476,165 475,955
,800 ,127	Railway tië, F. S. Ketchum Railway trolley safety attachment, M. A. Yeak- ley	475,981 476,028
,901 ,101	Railway trolley safety attachment, M. A. Yeak-ley. Railway wires, hanger for electric, C. B. Elliott., Rake. See Hay rake. Range or stove. A. Heppe	476,192 476,143
,757 ,758	Rectifying apparatus, Hoff & Frommel Refrigerator, R. C. Simmons Refrigerator building, D. P. Edgar	475,961 475,816 475,851
,861 ,822 ,779	Registers, Index hand for counting, R. Cartwight. Registers, pointer and dial for counting, J. Thomson Recestat, F. W. A. Schneider.	476,129
,866 ,859	Thomson Rheostat, F. W. A. Schneider Roaster and baker, C. McConalogue	476,105 475,898 475,946
873 6064	Roestat, F. W. A. Schneider. Roaster and baker, C. McConalogue Rock drill, H. G. Williams. Rocking chair, E. P. Koontz. Rod. See Fishing rod. Roller and harrow, combined, Harvey & Hart-	. 475,910 . 476,152 ■
,863 ,953	Roller and harrow, combined, Harvey & Hart- man	476,142 475,854
<b>5,22</b> 0	man.  300f, floor, or ceiling, G. Fugman.  300f, floor, or ceiling, G. Fugman.  Ropeway, wire, W. 8. Hall.  38ab cord and securer, W. H. Naylor.  Sash cord fastener, A. Wilson.  Sash fastener, J. P. H. Gastrell.  Sash fastener, W. H. King.  Sash fastener, W. H. King.  Sash machine, E. B. Hayes.  Saw set, J. McIntosh.	475,766 476,163 475,956
,912 ,020	Sasb fastener, J. P. H. Gastrell. Sasb fastener, W. H. King. Sash fastener, W. M. Morton.	475,765 476,050 475,966
3,141 5,226 5,979	Scale, balance, R. E. McClelland	476,202 476,235 475,792
,,979 5,862	Scraper, earth, T. O. O. Sitlington Screen. See Window screen. Screen frame. adjustable, G. J. Rothan Separator. See Grain separator. Shaft, which J. Atkina	. 475,818 . 476,077
5,027 5,962	Chaot wotel to light and the D	. *10,010
5,752	Shutter fastener, B. Bernstein  Shutter worker, S. M. Fisher  Signal. See Waiter signal.	476,044
5,993 5,032 5,963	Signal. See Waiter signal. Silver sulphides, refining, W. G. Waring. Sink and washtub, combined, F. H. Hawkins Skate, T. W. Bryant. Skate, roller, T. W. Bryant. Skate, and onf holder L. H. Taylor.	475,941 475,926
5,888	· Smoke consuming furnace, automatic, M. J.	,
3,058	Lynn. Snap hook, F. White. Snow plow, G. Nichols. Soap boiling apparatus, J. W. Martin. Soap boiler, C. S. Higgins. Soda fountain, J. Ramsey. Sounding board vocal, C. C. Carroll. Spark arrester, Strouse & Griffin. Speculum, W. E. Clough. Spinning mule doffing attachment, G. D. Secor. Spinning spindle support. H. F. Woodmancy.	. 475,876 . 475,971 . 476,063
5,116 5,801 5,001	Soap boiling apparatus, J. W. Martin. Soap boilder, C. S. Hijsgins. Soda fountain, J. Ramsey. Sounding board word. G. C. Carroll	. 476,014 . 475,800
,827 ,109 ,230	Spark arrester, Strouse & Griffin. Speculum, W. E. Clough.	476,176 475,975
,230 ,878 ,218 ,199	Oneing Con Walshield oneing	,
,018 3,174 3,177	Spring, J. H. Sullivan. Spring J. H. Sullivan. Sprinklers, device for controlling the water jets of street, C. M. Collins	475,922
,978 ,748	Dearth Deeple J. D. J. Start. Tite Start.	480 101
3,817 3,052	Steam boiler, A. M. Dimmick. Steam boiler, J. MacCormack. Steam boiler, J. MacCormack.	. 475.850 . 476,053
,132 ,190	Steamer, wheat, F. A. Evans	. 476,138 . 476,073
,874	C. Nebse Sulky, W. J. Wayne Swimm er's use, ice attachment for P. Curren	475,885 475,991
,990 ,983	Swimming attachment, R. P., Jr., & W. N. Cafferty Swimming equipment, P. Curran	476,000 476,039
, 3,084 5,989	Tablet displaying device, E. G. Baker	. 476,182 . 476,078 . 475,935
,110 ,880 3,006	Telephone, E. M. Harrison. Telephone, S. F. Sherman. Telephone, submarine, H. Finch.	. 476,200 . 476,026 . 476,027
6,179 5,935 5,857	Steam boiler, A. Baird Steam boiler, A. M. Dimmick Steam boiler, J. MacCormack Steam boiler, T. MacCormack Stores, device for filling coal into regulation, F. Still and process, P. Rodes. Sulc. Nebse. Sulc. Nebse. Sulc. Nebse. Sulc. Nebse. Swimm er's use, leg attachment for, P. Curran. Swimming attachment, R. P., Jr., & W. N. Cafferty Swimming equipment, P. Curran. Swimming equipment, P. Curran. Swimming equipment, P. Curran. Syringe, T. B. Wilcox Tablet displaying device. E. G. Baker Tablet displaying device. E. G. Baker Tablet displaying device. Telephone, E. M. Hornson. Telephone, E. M. Hornson. Telephone, Submaring H. Finch Telephone submaring H. Finch Telephone submaring H. Finch Telephone submaring H. Finch Telephone Steam of the	476,054 475,686 476,005
5,055 5,183 5,967	Tie. See Railway tie. Railway cross tie. Tile stand, G. Holt. Tire, bicycle, F. H. Mason.	475,980 475,78
5,042 5,798	Tile stend, G. Holt. Tile, bicycle, F. H. Mason Tire, cushioned, G. T. Reed. Tire, elastic, J. S. Smith	. 476,211 . 476,080

Fine

Toaster, T. J. Murrey. Tobacco hoisting device, N. L. Frizzell. Tobacco, machine for attaching tags to plug, G. M. & C. W. Guerrant. Tongue iron, vehicle, Parry & Baker. Tongue support, wagon, J. W. Wetmore. Toy for emitting sound. L. Reichert. Transom lifter, G. A. Colton. Trap. See Fish and game trap. Trimmer. See Sheet metal trimmer. Wick trimmer.	475,884
Tobacco hoisting device, N. L. Frizzell	476,140
Tobacco, machine for attaching tags to plug, G.	476 010
Tongue iron, vehicle, Parry & Baker	476,010 475,986
Tongue support, wagon, J. W. Wetmore	475,836
Toy for emitting sound. L. Reichert	476,024
Trap. See Fish and game trap. Water trap.	476,087
Trimmer. See Sheet metal trimmer. Wick	
trimmer. Trough. See Feed trough. Trousers hanger, F. C. Germann, Jr. Trousers protector, E. P. Benjamin. Truck safety device, railway, J. M. Bostwick. Trunk or valise, hand, E. Dillingham. Trunk safety attachment, S. E. Sparrow. Tub. See Sink and washtub. Tube expander, W. Walker. Tubing, tag for but weld, E. Bowin. Tuk, ham e, H. O. Stahley. Tur bine, steam, G. J. Altham Turning irregular shapes, machine for, G. C. Bardons.	
Trousers hanger, F. C. Germann, Jr	476,195
Trousers protector, E. P. Benjamin	475,749 476,123
Truck safety device, railway, J. M. Bostwick	475 977
Trunk safety attachment, S. E. Sparrow	475,977 475,960
Tub. See Sink and washfub.	100 100
Tube expander, W. Walker	476,107 476,124 475,951 475,957
Tug. ham e, H. O. Stahley	475,951
Tur bine, s team, G. J. Altham	475,957
Turning irregular snapes, machine for, G. C. Bardons.  Type writing machine, F. Sanderson.  Type writing machine typecleaner, J. R. Keatinge Valve gear, engine, J. Hamilton.  Valve gear, engine, Herit & Hirschmann.  Valve gear for direct acting steam engines, J. E.  Kelly	475.917
Type writing machine, F. Sanderson	475,894
Type writing machine type cleaner, J. R. Keatinge	475,777
Valve gear, engine, J. Hamilton	475.942
Valve gear for direct acting steam engines, J. E.	210,012
Kelley.	476,148
Valve lever, steam, R. Weir.	475.908
Valve, piston, J. Hamilton	476,028 475,908 476,228
valve, steam actuated, F. M. Schorn	4/0,900
Vamp marking and throating machine. Stewart &	410,100
Brewer	475,952
Vault, grave, F. C. Rheobottom	476,171
Vehicle spring, T. F. McKee	475,891 476,062
Vehicle, two-wheeled, J. A. Bilz	475,974
Vehicle, two-wheeled, A. B. Keyes	475,943
Vehicles, supplementary seat for, W. H. Tillou	475,954
Velocipede, W. Andrews.	475,974 475,943 475,966 475,954 475,959 475,744
Velocipede, ice, G. W. Agin	475,744
Ventilator, F. Duest erwald	475,828 476,134
Vessel loading apparatus, Shepherd & Ballard	475,614
Vise. C. Ernst.	475,940 475,760
Wagon stop block, J. Pomroy	476,065
Walter signal, M. V. B. Ethridge	475,937
Water closet, J. H. Hamilton.	476,013
Water meter, disk, J. Thomson	476,065 475,937 476,015 476,011 476,102
Valve, steem engine slide, W. C. Church Vamp marking and throating machine, Stewart & Brewer Vault, grave, F. C. Rheobottom. Vehicle, C. A. Reade. Vehicle, C. A. Reade. Vehicle, two-wheeled, J. A. Bilz Vehicle, two-wheeled, J. A. Bilz Vehicle, two-wheeled, A. B. Keyes Vehicle wheel, W. W. Valentine. Vehicles, supplementary seat for, W. H. Tillou. Velocipede, ice, G. W. Agin. Velocipede, ice, G. W. Agin. Velocipede wheel, H. J. Swindley Ventilator, F. Duesterwald Vessel loading apparatus, Shepherd & Ballard Veterinary tooth cutter, J. Hamlin. Vise, C. Ernst. voth cutter, J. Hamlin. Wagon stop block, J. Pomroy Waiter signal, M. V. B. Ethridge. Walking stick, etc., J. J. Him. Water closet, J. H. Hamliton. Water meter, disk, J. Thomson Water meter, proportional, J. Thomson Water meter, proportional, J. Thomson	476 100
Water meter, proportional, J. Thomson. 475,097, 476,099, 476,097, 476,097, 476,097, 476,097, 476,099, University of the calibrating, J.	476,100
476,097, 476,099,	476,104
Water meters, apparatus for calibrating, J. Thomson.	476.095
Water supply system, J. W. Fisher	476,043
Thomson. Water supply system, J. W. Fisher. Water trap, J. T. Brien. Welghing and advertising device, combined, D. W. McLaughlin.	476, <b>0</b> 43 476,224
W. McLaughlin	475,968
Well drilling apparatus, artesian, P. Yorke	475,913
W. McLaughlin Well drilling apparatus, artesian, P. Yorke Well pipes out of the ground, machine for pulling driven. W. J. Hamilton Wheel. See metal wheel. Velocipede wheel.	
Wheel. See metal wheel. Velocipede wheel.	476,196
Wheel box and axle, L. Harris	476,198
Whin socket and lock for lan robus combined A	476,117
S. Kibby	475,982
Wick trimmer, D. L. Andrews	476,114
Windmill, A. Johnson	475.872
Window, V. Schirmer	476,081
Window screen, J. S. Lester	476,154
Wire stretcher, H. J. Rohr	475,809
Wires, seal for leading in, Burnett & Doane	475,998
Wires, swivel pull off for overhead, C. B. Elliott	476,193
Wood working machine, W. Merrill	475 782
Woodwork joint, G. Brinkerhoff	475,997
Wrench, J. Ryan	476,079
wein pipes of the kround, machine for pulming driven. W. J. Hamilton. Wheel. See metal wheel. Velocipede wheel. Wheel box and axle. L. Harris. Whitfletree, G. M. Ayers. Whit poscet and lock for lap robes, combined, A. S. Kibby. Wick trimmer, D. L. Andrews. Windmill, A. Johnson. Windmill, W. S. Lamb. Window, V. Schirmer. Window sereen, J. S. Lester. Wire gauge, C. J. Niller. Wire gauge, C. J. Niller. Wire stretcher, H. J. Rohr. Wires, seaf for leading in, Burnett & Doane. Wires, swivel pull off for overhead, C. B. Elliott. Wood cutting machine, W. Merrill. Wood working machine, U. Linger. Woodwork joint, G. Brinkerhoff. Wrench, J. Ryan. Yoke, neck, G. H. Young	#10,0±1

### DESIGNS

DEDICATO.	
Advartising coupon, G. H. Drew 21,	58
Badge, M. C. Barbero	. 6
Baker, 101340, C. H. Beeman	æ
Button, etc., cuff, E. T. Corby	58
Calendar and inkstand holder, E. A. Hemphill 21,	58
Drip cup, H. A. Runkle	59
Ewer, C. A. May 21,	59
Lamp shade, W. S. McLewee	58
Needle threader frame, P. Slensby 21,6	50
Range, H. C. Bascom	59
Sad iron, J. J. Brooks	59
Sponge cup, J. G. Bainbridge	58
Spoon, D. I. Murray	59
Spoon or similar article, F. N. Osborne	59
Stove, dwarf parlor, Bascom & Galbraith 21,	59
Toy savings bank, Shepard & Adams	58
Wire stretcher shank, A. Westmeyer	55

## TRADE MARKS.

Anæstheticfor painless extraction of teeth, local,	
Howe & Dills	21,230
Room Wolde & Thomas	21,228 21,223
Blacking and other dressing for shoes and leather.	21,220
Howe & Dills.  Antiseptics, Clinton Pharmaceutical Company Beer, Welde & Thomas Blacking and other dressing for shoes and leather, Ulmer Manufacturing Company.	21,247
Boots and shoes, B. A. Corbin & Son. Boots and shoes, Johnston & Murphy Cash registering machines having visual indica- tors, key operated, Boston Cash Register Com-	21,226
Boots and shoes, Johnston & Murphy	21,207
tors key operated. Roston Cash Register Com-	
DS.DY	21.236
Cigars, E. Aarons & Bro	21,236 21,203 21,209
Corks, Meyer Bros. Drug Company	21,209
pany.  Corks, Meyer Bros. Drug Company.  Cosmetic or liquid face preparation, Bippus & Breidenbach.	91 995
Breidenbach Fireproof backing slabs and sheets, N. H. Culver	21,225 21,227 21,265 21,212 21,243 21,241
Ginghams, J. Farnum & Co	21,205
Gloves, kid and other, Pings & Pinner21,211,	21,212
Hats and caps, Hart & Duff Hat Company	21,243
Injectors and electors etationers and locomotive	21,241
Hayden & Derby Manufacturing Company	21.221
Gloves, kid and other, Pings & Pinner	21,221 21,218
Knives, forks, and scissors and analogous small metal articles, steel, firm of G. Hammesfahr	
metal articles, steel, firm of G. Hammestahr Leather for the uppers of boots and shoes and for	21,240
hoots and shoes Allen Field & Lawrence	21,235
Malt ijquors, S. Allsopp & Sons	21,204
Meat, hams, shoulders, bacon sides, and sausages,	
boots and shoes. Allen, Field & Lawrence Meat, hams, shoulders, bacon sides, and sausages, packed, North Packing and Provision Company Medicine for the cure of the alcohol habit, T. S.	21,245
Robertson	91 930
Paints bronze. Fuchs & Lang.	21.242
Robertson. Paints, bronze, Fuchs & Lang. Paper and envelopes, writing, G. B. Hurd & Co	21,239 21,242 21,206
Paper shot shells, Union Metallic Cartridge Com-	
Detroloum for internal and external use as a	21,222
Petroleum for internal and external use as a remedy for disease, refined, Angier Chemical	
Company	21,224
Company	
21,213,	21,214
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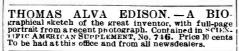
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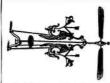
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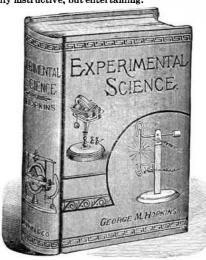
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