RECENTLY PATENTED INVENTIONS. Railway Appliances.

CAR COUPLING. - Edward P. Eastwick, Jr., New York City. Two patents have been granted this inventor on an improved coupling device of the vertical plane type, in which the drawbar is provided with an interior buffing plate or surface in the line of buffing force, and adapted to be engaged by a knuckle pivoted in the drawhead, the inner end of which is in engagement with the buffing surface when the knuckle is in its coupled position. The movable buffing plate or surface is provided with means of cushioning, whereby the force of the buffing strain will be mitigated and the shock to the drawbar and the car will be lessened. A headless locking pin is also provided, which will drop to its seat in the drawhead, no matter whether or not the mouth of the opening in which the pin slides be surrounded by snow or ice, An arrangement of openings is provided in the side and end of the drawbar shank through which the tail bolt is passed to obtain proper position and adjust-ment; and to economize in metal and facilitate annealing in the construction of the knuckle, it has a vertical opening extending from top to bottom, and located adjacent to its pivot point.

CAR COUPLING. - William A. Mayhall, Gloster, Miss. This coupling is designed to be simple, durable, and inexpensive, and capable of coupling with an opposed higher or lower link coupler. The coupling pin when in uncoupled position is held elevated by a spring-pressed latch, and the coupling is automatically effected by the drawheads being brought sufficiently close together to operate the latches, releasing the pin, and through the assistance of a springcontrolled rock shaft connected with it. An operating lever is connected with the rock shaft at the side of the car, the lever hanging down and being at all times out of the way, and the connection of the shaft with the coupling pin is such that the drawhead may move laterally without affecting the connection.

SPARK ARRESTER AND DRAUGHT REGULATOR.-Walter M. Letts, Sedalia, Mo. In the smoke box of the locomotive, in its upper portion, an imperforate partition is arranged to embrace the steam draught nozzle, while a deflector flue is secured to the flue sheet of the boiler and extends forward above the flues to a point adjacent to the partition, the attachments being so constructed and arranged that the sparks and cinders will be retained in the smoke box, and the locomotive may be given any necessary amount of draught.

Miscellaneous.

FORE HEARTH.—Adam J. Schumacher, Butte City, Montana. This invention relates to fore hearths for smelting furnaces, for use in connection with a discharge trough patented by the same inventor. It consists of an inclined tank with outlet spouts in the upper edges of its ends, a lining of refractory material, a transverse water partition dividing the tank into two compartments, and there being a continuous discharge of slag and bullionthrough the spouts, there being no need of ladles to dip out the bullion. The construction is simple and durable, and the slag is completely separated from the molten metal, there being a formation of a cover from the slag for the molten metal contained in the device.

NEWSPAPER FOLDING MACHINE. Cyrus N. Walls, Taylorville, Ill. This invention provides a feeding attachment adapted to deliver newspapers to the machine as they come from the press. It consists of a series of movable carrying tapes extending over pulleys at one end of the slotted folding table and over large wheels at its opposite end, a series of diagonal guide tapes having their lower ends carried by rollers arranged within the loops of the carrying tapes. The feeder may be adapted to any kind of folder, and will carry the papers sidewise as they come from the press and place them in position to be folded with the aid of any gripping mechanism or any hand operated machinery.

DUMPING APPARATUS. - Philip Imig, Minier, Ill. This improvement relates more especially to apparatus for use in unloading ear corn or other grain into a crib, providing therefor a track adapted to support a wagon, a movable inclined platform being mounted on the track, and a chute to fit upon the track behind and under the wagon box. It is an extremely cheap and convenient apparatus for application to any grain crib. by means of which a farmer may unhitch his team, run his grain wagon over the crib, and quickly dump the load into any desired part of the crib.

PHOTOGRAPHIC SHUTTER. — Julius R. Albrecht and Emil Ortmann, New York City. A lens shutter and connected operating mechanism are provided by this invention, the shutter being easily regulated and conveniently applied to lens tubes of different sizes, and being adjustable for use in making inbe operated with the greatest rapidity and will show the largest possible opening for a shutter of its size. being operated by the simple pressure of an air bu'b.

AUTOMATIC ELECTRIC TIME CHECK. Charles K. Jardine, Georgetown, British Guiana. This is a device for receiving the checks or tickets of employes in manufacturing establishments, offices, etc., and consists in the combination with a compartment drawer of an electrically operated deflector, for guiding the tickets into one or the other of the compartments of the drawer, according to whether the ticket is dropped into the apparatus early or late. Combined with the deflecting apparatus is an indicating plate to display the words "early" or "late," so that it may be seen by the employe when the ticket is dropped.

PROPORTIONAL FLUID METER. Donald McDonald, Louisville, Ky. This is an improvement in meters adapted for measuring water or Other liquids as well as gas, and in this meter both the main conductor and the small conductor that leads off to the meter are provided with partitions or diaphragms having perforations through which the fluid passes. diaphragms are differential, and a pressure regulator and liquid gauge are interposed between and

connected with the meter pipe and another pipe of like diameter, the latter leading off from the service pipe on the outflow side of its diaphragm.

CHECK BIT.—Lester C. Swift, Plano, Ill. This is a double check bit, comprising upper and lower bits and a strip having an eye loosely embracing the upper bit and extending therefrom across the lower bit and rigidly secured thereto, the two bits being connected so as to be held in a fixed position in relation to each other. The bit is adapted to prevent the horse from hogging on the check, and also to prevent tongue lolling and stumbling

MEASURING REEL.—Herbert L. Stull, Stoddartsville, Pa. This is a device especially adapted for measuring cloth in the web and automatically registering the length of cloth measured. It comprises a case in which is mounted a spool having a measuring cord, an indicating wheel driven from the spool, a dial parallel with the wheel having an aperture through which the numbers on the wheel are successively visible, its face having a spiral line with a scale and ar indicating hand. A spring-propelled shaft parallel with the axis of the spool is geared to it by a train of multiplying gearing for rewinding the spool.

TAIL PIECE FOR STRINGED INSTRU-MENTS.—Charles J. Cook, Montreal, Canada. This improvement is adapted for use with violins, guitars, banjos, and all kinds of stringed instruments, and consists of a tail piece provided with independent cam levers for pinching or holding the tail ends of the strings of the instrument, instead of securing them by tying knots or otherwise.

SKATE. - Ubel Wierda, Winsum, Netherlands. This improvement provides a detachable blade which is preferably made reversible and formed with two different styles of running edges, and also provides a novel means of holding the blade to the skate body or foot plate, whereby blades suitable for all styles of skating and for hard or soft ice may be interchangeably employed in connection with one common body, and the latter may be fashioned to suit individual tastes as to the means of securing the skate on the shoe or adjusting the blade.

FASTENING DEVICE. - Charles Liebe, New York City. This is an improvement on a former patented invention of the same inventor, providing a fastening device which may be used to attach together two pieces of furniture, to fasten a door, or to fasten adjacent pieces of almost any rigid substance. It consists of a face plate having a slot and mortise with on positely inclined end walls, a bed plate having a swinging latch entering the face plate slot, while a locking cam lever is pivoted above and swings upon the latch.

ICE CAN.—Charles E. Struck (address Struck & Fischer, 649 and 651 West 42d Street, New York City). This is an ice-making can or vessel having its bottom and two of its adjacent sides jacketed or insulated and its two remaining adjacent sides nonjacketed or non-insulated, whereby the water will be frozen gradually and mainly from one side, the refrigeration being checked on the other side. By this means the impurities contained in the water are prevented from becoming fixed in the main body of the ice and are driven over to the warmest surfaces or corners, where the ice containing such impurities may be afterward readily broken off, leaving a block of pure or crystal ice.

CLOTHES LINE. - David F. Covert Rapid City, South Dakota. This is a wire clothes line having holders integral therewith for securing the clothes on the line. It is composed of a series of links bent at their ends to form opposing spring loops over the main body part, and terminating in coils adapted to shut over or receive within them the main body part of the links, the line being readily shut up close when not required for use by sliding or folding the links one upon or within the other. The line may be easily lengthened or shortened by adding or removing links each link being readily engaged by simply lifting the spring loops of the links,

Whirligig.—Alfred Moe. Jersey City. N. J. This is an advertising device comprising a windmill carrying a series of figures, with means for imparting a rotary movement to the figures independent of the movement of the wheel. The construction is very simple, but the device is capable of imparting unique and apparently erratic movements to various figures to attract attention, and is also adapted for use as a toy.

GAME BOARD. - George Stackhouse, Pittsburg, Pa. This is a toy in imitation of a ten pin alley with an automaton arranged to bowl, the bowling alley having suitable troughs around its sides and ends for receiving the balls, a tilting returning trough carrying the balls to the point of starting, while an automaton with a swinging arm is connected with the tilting trough and an inclined plane receives and projects the ball. Combined with the alley is a wheel of fortune to receive and project the ball.

DESIGN FOR A HINGE. — Sidney L. Stiles, Watseka, Ill. The leading feature of this design consists in the curve or bend and the edge contour of the leaf.

Note.-Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention and date

NEW BOOKS AND PUBLICATIONS.

GEOLOGICAL SURVEY OF NEW JERSEY. Annual Report of the State Geologist for the Year 1891. Trenton, N. J. 1892. Pp. 270.

The drift or Pleistocene formations and the economic geology of the State are the main topics of the geological section of the 1891 report. The glacial deposits, moraines and extra morainic formations are considered at length, and characteristic illustrations are given, in economical geology. The oak and pine land belts are described. Water supply and water power, the latter utilized and unutilized, artesian wells, Passaic River drainage (the works at Little Falls), iron mines and mineral statistics are the principal subjects treated. A useful feature of the report is a list of the publications

of the survey, including Professor Cook's unrivaled series of topographical maps. The maps are supplied at 25 cents per sheet—a strictly nominal price, when the value and accuracy of the series is considered. There are now twenty sheets, each twenty-seven by thirty-

BATEAUX ET NAVIRES. By Le Marquis de Folin. Paris: Librairie J. B. Baillere et Fils. 1892. Pp. viii, 328. Price 75 cents.

This work, with 132 pretty little sketchy illustrations. treats principally of the smaller boats of all nations in which craft indigenous peculiarities are most largely developed. We note some omissions, however, the United States craft being excluded in great part, while the shores of the European continent are largely drawn on for subjects.

ANLEITUNG ZU DEN LABORATORIUMS-ARBEITEN. By Alexander Lainer. 243 illustrations. 99 pages. Price 3 marks. Halle a. S., Germany: Wil-helm Knapp, publisher.

The handsomely illustrated little book gives full instructions for performing laboratory work, and is more specially intended for the use of professional and amateur photographers, to enable them to carry out experiments and other laboratory work in the most effective manner and with simple, inexpensive apparatus.

WITH EDISON AT SCHENECTADY is the title of a unique volume of photographs illustrating the plant of the general Electric Company at Schenectady. There is portrayed in a graphic manner the interiors of various machine shops. Shows groups of employes at work, and, in fact, shows in as clear a way as possible how the electric machinery is constructed and handled, A feature of the book is the frontispiece. Here are portraits with their autographs of Edison, Insull, Kruesi, Turner, and other Schenectady officials. The book is withal artistic, and will be of interest to any one interested in electricity. The photographs are of the highest order and reflect great credit npon the compiler and publisher, Mr. W. H. Butler, of Schenectady, N. Y., to whom subscriptions should be sent. The price is \$6 for half-seal binding and \$10 for all-seal leather and gold edge cords.

SCIENTIFIC AMERICAN

BUILDING EDITION.

JUNE NUMBER.-(No. 80.)

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1. Handsome plate in colors of a residence recently erected at Plainfield, N. J. Perspective views, floor plans, etc. Oscar S. Teale, architect. Cost about \$12,000. An excellent design

Plate in colors of a cottage erected at Bensonhurs Long Island, N. Y. Perspective elevations and floor plans. Cost \$3,450 complete. P. F. Higgs, architect, New York.

3. Engravings and floor plans of the Crescent Block of six houses erected on Golden Hill, at Bridgeport, Conn. An excellent design. Total cost of six houses \$55,000 complete. Messrs. Longstaff & Hurd, architects, Bridgeport, Conn.

handsome residence at Babylon, Long Island, N. Y., recently erected for F. H. Kalbfleisch, Esq. Cost \$17,500 complete. Two perspective views and floor plans. H. J. Hardenberg, New York, architect.

school house at Upper Montclair, N. J. Perspective view and ground plans. Cost \$12,200 complete, including heating and ventilating appara tus. Geo, W. Da Cunha, architect, New York.

6. Perspective views of several very attractive dwellings located near New York.

A suburban residence of attractive design erected at Lowerre, N. Y. Cost \$2,800 complete. Floor plans and perspective view

The St. James' Episcopal Church at Upper Montclair, N. J. A picturesque design. Cost \$8,000 complete. Messrs. Lamb & Rich, architects, New York. Perspective view and ground plan.

9. A residence at Ludlow, N. Y. Perspective and floor plans. Cost \$8,500 complete.

A comfortable summer residence at Asbury Park N. J. Perspective and floor plans. Cost \$6,250 complete.

11. Proposed railway tower for the Columbian Exposition at Chicago.

12. Sketch of the new City Hall, Philadelphia. magnificent structure.

13. Miscellaneous contents: Cork pavement. - Best treatment of hardwood floors.-'The twin staircase, illustrated.—The electric stair climber, illustrated.—The sick room temperature.—Stair builder's goods, illustrated .- Ornamental hardwood floors.—Large winding partition doors.— The "Alberene" laundry tub.—House heating and ventilation.-Nolan's hot water and steam heater, illustrated.-The crushing resistance of bricks. -An excellent motor, illustrated.-A successful hot water heater, illustrated.—The lacque tree.-A self-retaining dumb waiter, illustrated, -Architectural wood turning, illustrated.

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Acme engine, 1 to 5 H. P. See adv. next issue.

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Household altar, described on page 371. Patent for sale for U. S., or State rights for sale. Address L. H. Baudet, 91 Sixth Avenue, New York City.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 36l Broadway, N. Y. For the original Bogardus Universal Eccentric Mill, Foot and Power Presses, Drills, Shears, etc., address J.S. & G. F. Simpson, 26 to 36 Rodney St., Brooklyn, N. Y.

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(4402) P. B. asks: What are the methods of grounding rails of a single-wire trolley road? A. The rails of a trolley road are grounded at intervals by means of wires extending downward from the track to large earth plates. An uninsulated return wire laid in the earth is sometimes used.

(4403) F. W. says: The firm I am with are desirous of drawing water from a creek 600 feet distant from factory, and up an elevation of 24 feet; is it practicable? If so, what size pump will they require to pump say 400 barrels, or 16,000 gallons, in a working day of 10 hours? Would it not be much better to lower the pump in a well say 8 or 10 feet ? A. You can draw the water 24 feet with great difficulty, from the separation of the air from the water and the large clearance usual in .pumps. Instead of your proposed well, we recommend the raising of your supply level as much as possible by a ditch from up stream, or by sinking the upper part of the suction pipe 5 feet or more, and also the pump to the same level, when there will be no difficulty in drawing a full supply. The suction pipe should have a tight foot valve and be charged with water to start with, and have easy means of recharging. You will require a pump with 8 inchwater cylinder running at the piston speed of 80 feet per minute with a 5 inch suction pipe. Size of steam cylinder to meet the pressure pamped against.

(4404) I. M. M. asks: 1. How long does it take for there to be an entirely new brain formed, also body? We mean an entire change of every atom in both brain and body. If physiologists have certained the length of time. I have not seen it. A.

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 rubber 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 recommended 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. dca-dcb-acThen we have x=

d-c

(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 electricity? 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 whose 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 takes 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 greatest load. Pipe is only strongest for equal weights. The additional size required for equal weight gives a 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 recourse 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-

About seven years has been claimed for an entire for small boats, take a carpenter's rule and lay one leg

(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 fairlooking job by printing with a good quality of gold ink.

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May 31, 1892,

AND EACH BEARING THAT DATE.

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	Bookb	inding and	coverin	g machli	ne, Lovel	475,746 I &	- i
	Bre Book b	edenberg back band in upport, J. r shoe, G. 1	narker, H	. Trumbu	ii	476,206 475,830 475,933) :) :
	Book s Boot o	npport, J. r shoe, G.	W. Coulta E. Hadlu	ıs ıd		475,933 475,858	9;
	Box.	wasning ii See Journa	lachine, G	t. Burges etter box.	Jr Mailing	476,126 and	١,
							1
	Brake.	M. Baker See Flax beam, H. I nachine, h	and nem B. Robisch	p Drake, Nung Pogge &		475,800	2
	Bridle,	draught,	W. E. Hu	Beggs & C	Jordon	475,864	1 :
,	Buckle	draught, handle, ade, suspende	r, C. R. H	arris	: 18	475,861	j :
	Buildi	ng, H. Zog	mann	V C Ster	wart.	476,17 475,84 476,175	<i>~</i>
•	Burgla	ng, H. Zog greasing n r alarm a der	nd door	closing	levice, G.	F. 475,90	1
l	, Riimei	r. See Gas	ting on no	Hyuroca rotus for	roon ourn barrels S	er.	
	Butter	ng a nd ven rha m knife, T. n, G. Rossh	Miller	· · · · · · · · · · · · · · · · · · ·	•••••	475,75 475,789 476,070 475,89	6 : 9 :
	Cable	grip, J. Sci	erg irra	hollow.		475,89	6
,	ton	machine f	benism f	or dunle	T A Rrv	475,88	9
	Camer	et ala. See Phottle, etc.,	otographi	c camera		475,84	6
)	Can, be	ottle, etc.,	automátic	ally-clos	ing, H. Jo	hn- 475,77	5
L	Can of	ener, A . E shade hoi	. Newton. der, C. A.	Moran.		475,77 476,16 475,79	4 0
,	Car br	akes, devi ver, B. C. I	ce for an	tomatica	ally opera	ting 475,89	3
,	Car co	upling, M. upling, P.	Hoff			476,00 476,01	6
,	Car co	upling, T. I upling, C. I	renn 3. Pentz	o	• • • • • • • • • • • • • • • • • • • •	476,160	9
,	Car co	npling, J. 1	reel M. Simm	O.A		475,82 475,00	9
	Car, ra	ilway, G. I	Bayba Morriso	n	••••••	475,84 475,70	1
,	Car, sl	enping, J.	H. Myers.	Hubbard	i	476,02 475,77	2
•	Carbui	ottle, etc., 1	Badlam.	mond	4 76.2	475,97 09 to 476,21	4
	Carrie	r. See Ele r.	vated car	rier. Filo	n or plate	car-	
ľ	Cartric	dge loader. dge shells	w. H. Ha	amner ds, tool	for finish	476,04	٥
,	Case.	r. dge loader, dge shells ges of, Gilt See Eyeg se.	ert & Tho lass and	ьшав spectacle	case. Ti	476, 00 cket	
3	Cash c	e. : rrier appa	ratus, J.	C. Martin		475,87	9
	Ceiling	g panel, sh drive. He	eet metal,	F. G. Ca	ldwell	476,18	5
1	Chair.	See Child	a chair.	Rocking	chair.	476.05	9
	Child's	s chair, H. J. M. Crit	S. Carley.			476,03	4 j
1	Churn	J. C. Geor	rge		· · · · · · · · · · · · · · · · · · ·	476,04	7
2	Clay, I	preparing, See Dash t	P. Arnold ar clip.			475,91	5
0	Clock, Closet	errier appiental sack gyanci, sh drive, Ha See Chikd y picker, G s chair, H. J. M. Crit, J. C. Geoloreparing, See Death telectric see Dry serier, A. se pounder, L. J. Will utting mac gauge, H.	ir-windin closet.	g, F. M. S	chmidt	475,80	9
٠	Clothe	s drier, A.	M. M. Ol	in		475,75 475,88	7
•	Clutch Coal c	i, L.J. Wir utting mac	hine, J. E	I. McEwe	n	475,83 476,16	2
	Coal c	utting mad gauge, H.	nine, Wa E. Bingha	miling & . m		475,63 476,22	3 2

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Comb. See Curry comb. 476,113	Lasting machine, C. P. Lawrence
Condensing apparatus, steam, W. E. Prall. 475,799 Cooking of cultuary vessel, J. P. Eustis. 476,137	Leaf stripping machine, J. L. Myers. 476,234 Letter box, house door, J. A. Faw 476,139
Copying press, letter, J. W. McCrone. 476,061 Corset, N. E. Miles. 475,882 Cot spring and copying W. Miller 475,788	Lasting machine, C. P. Lawrence 476,206 Latch, A. & F. E. Richardson 476,070 Latch, turret, F. A. Lane 476,205 Leaf stripping machine, J. L. Myers 476,234 Letter box, house door, J. A. Faw 476,133 Letter box, house door, C. H. Scofield 475,810 Lifter, See Transom lifter 475,834 Lifting Jack, E. Garren 475,784 Lighting devices, etc., tape winding mechanism for, C. P. Booth 475,784 Liquor tester, spirituous, K. Taylor 476,093 Liock, See Hasp lock.
Cotton gin attachment, E. C. Scott. 475,987 Cotton gin roll box. E. C. Scott. 475,988	Lifting jack, E. Garren
Coupling. See/Car coupling. Thill coupling. Pipe coupling.	for, C. P. Booth
Grane, Overheau traveling, T. R., Sr., & J. R.	Locomotive ash pan, C. J. W. Johnson. 476,147 Logs, rafting, A. Van Kooy. 476,106
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Damper, fireplace chimney flue, F. McConnell 475,983 Dash bar clip, A. Searles	Mangle, A. Cousen
Cuttry comb. A. C. Decker Miter cutter. Curry comb. A. C. Decker Miter cutter. Bamper, fireplace chimney flue, F. McConnell. 475,98 Dash bar clip, A. Searles. 475,91 Davit, boat, H. E. Bowring. 475,92 Decorticating fiber, be ring plants, machine for, Von Oven & Panknin. 475,79 Dental flask, W. E. Stiles. 476,62 Dental flask, W. E. Stiles. 476,62 Dental flask holder, E. A. Bryant. 476,12 Desk, writing, A. E. Shannon. 476,12 Disholay rack, E. Altman. 476,02 Display rack, P. Meyer. 475,79 Display rack, P. Meyer. 475,79 Display rack, P. Meyer. 475,79 Display stand, S. T. Dickens. 476,13 Door check, pneumatic, C. O. Case. 475,39 Door hanger, Prouty & Turner. 476,08 Door rack, J. L. Pease. 475,94 Dress shield or protector, B. Scarles. 475,94 Dress Shield or protector, B. Ocer. 476,94 Dress Shield or protector	C. Sears. 475,807 Measures, device for repairing tape, C. Kingsbury. 475,944
Von Oven & Panknin	bury 475,944 Measuring vessel, graduated, J. P. Eustis 476,136 Mechanical movement, G. W. Amos 476,112
Desk, writing, A. E. Shannon 475,815 Diamonds and other stones for cuttingpurposes,	Dury 476,948
means for setting, F. Kegel	Metals, purifying, B. Talbot
Display stand, S. T. Di ckens	Mill. See Grinding roll. Windmill. Miter cutter. W. R. Fox. 476.045
Door hanger, Prouty & Turner. 476,06 Door rack, J. L. Pease. 475,94	Mill. See Grinding mill. Windmill. Miter cutter, W. R. Fox. 476,045 Mouldings, apparatus for coating, S. J. Carter. 476,002 Motor. See Hydraulic motor. Railway motor. Motor, G. J. Altham. 475,798 Motor, J. C. Reuter. 415,799 Mower, J. Stephani. 476,134 Mower, lawn. Braun & Deck. 476,194 Mowing macbine cutter, I. F. Bassford. 475,762 Nail machines, die for cut, C. E. Houghton. 475,762 Nails, machine for making hob, J. W. Ells. 476,191 Nut, adjustable spindle, Frazer & Brown. 475,762 Oiler, loose pulley, Richards & Burr. 476,173 Ore cleaning and concentrating apparatus, W. 476,035
Dress shield or protector, B. Scarles	Motor, G. J. Altham
Drill See ROCK Grill Drill Stock, C. H. Platt	Mower, lawn, Braun & Deck. 476,184 Mower, lawn, T. Coldwell 475,976
Electric conductor, C. W. Bassett. 475,92 Electric light shade, etc., H. A. Miner. 476,02	Mowing machine cutter, I. F. Bassford 476,030 Nail machines, die for cut, C. E. Houghton 475,768
Electric machine, dynamo, W. Koedding. 476,15. Electric meter, O. Ericsson. 475,75. Electric terminal H. Sancha 475,175.	Nut, adjustable spindle, Frazer & Brown. 475,762
Electric wire holder, E. L. Lloyd	Ore cleaning and concentrating apparatus, W. Clancy
Electrical reciprocating tool, W. P. Ca starphen, Jr	Oreans, fresh wind box for plpe, Votey & Wood. 475,832 Organs, fresh wind box for plpe, Votey & Wood. 475,832 Organs, hydraulic motor for, J. W. Johnson. 475,776 Organs, wind chest for pipe, Votey & Wood. 475,870 Packing, J. C. F. Jones. 475,870 Packing receptacle, H. L. Boswell. 476,223
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for, H. Haberlin. 475.83 Engraving machine, pantograph, W. Clegg. 476.18 Eraser, blackboard, L. W. Chase. 475.75 Excavator, hydraulic, W. M. Douglas. 475.75 Excavator, hydraulic, W. M. Douglas. 475.83 Eyeglass or spectacle case, W. Birmingham. 475.93 Fabrics, decorating, H. G. Bunch. 476.16 Faucet, H. S. Park. 476.16 Faucet, G. W. Renton. 476.17 Faucet, registering measuring, C. A. Miller. 475.94 Feed trough, G. F. Robinson. 476.07 Feed water heater, E. R. Stilwell. 476.08 Feed water, W. We bster. 475.94 Fence, J. Baker. 475.95 Fence gate, wire, J. Hult. 475.96 Fence gate, wire, J. Hult. 475.96 Fence pst, metallic, B. F. Randall. 476.08	man 476,294 Paper cutting machine, G. W. Evans 475,763 Paper feeding machine, W. Womersley 475,839 Paper, etc., machine for feeding and cutting, W. G. Chapin 475,831 Paper watting machine I. Lee 475,183
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Faucet, H. S. Park 476,167 Faucet, G. W. Renton 476,177	Paper weight, letter scale, and calendar, combin- ed, J. B. Price
Feed trough, G. F. Robinson	Pegging machine feeding mechanism, J. Hyslop,
Feed water, W. We bster. 475,99 Fence. J. Baker. 476,12	475,883 Photographic camera, R. De Barril. 475,919 Photographic printing frame, F. A. Daly. 476,041 Plano action, repetition, J. C. Anton. 476,115 Plano and organs, me chanical attachment for, J.
Fence gate, wire, J. Hult	Piano action, repetition, J. C. Anton
Fence gate, wire, J. Hult. 475,88 Fence post, metallic, B. F. Randall. 476,06 Fibrous plants, machine for treating, J. L. My ers, 476,160,	Fig. Sec Insulator cin. 476,197
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H. Selkreg	7 Propeiling apparatus, vessel, H. Barcroft
Fraud preventive device for slot machines, J.	Protector. See Trousers protector. Pump, J. Burkholder
Schöfield 475,89 Fruit press, S. Grossman 476,85 Fungel indicating, I. W. Lord 478,87	9 Pump, E. J. Schiller
Schoffeld 475,85 Fruit press, S. Grossman 475,85 Frunnel, indicating, I. W. Lord. 475,87 Furnace. See Hot air furnace. Hot water furnace. Smoke consuming furnace. Furnace. J. Marshall. 475,88 Furnaces, apparatus for conducting and screening gases from metallurgical, M. W. Iles. 475,78 Fuse H. P. Merriam. 475,78	Purifier and separator, J. Mills
Furnace, J. Marshall	4 Race track, R. A. Howard 475,769 Radiator, Humick & Morgan 479,849 Radiator, Humick & Morgan 479,849
Fuse, H. P. Merriam	Railway constiti, electric, Carr & Ferrin 410,123 Railway cross tie, F. A. Byram 475,999 Railway motor, electric, J. F. Shawhan 475,970
runges apparatus for ontuing and access in gases from metallurgical, M. W. Hes. 475,77 Gauge. See Lamp oil gauge. Wire gauge. 476,14 Game apparatus, O. Von Hunersdorff. 476,14 Game apparatus, O. Von Hunersdorff. 476,14 Gate. See Fence gate. 475,64 Gate. See Fence gate. 475,64 Gate. C. Cardwell. 476,14 Gearing, H. L. Shepard. 475,15 Gearing, H. L. Shepard. 475,16 Gearing, J. Thomson Glycerine and salt from spent soap lye, recovering, Domeier & Hagemann. 475,75 Green from spent soap lye, recovering grude. 475,75 Grain adjuster, T. H. Hendershot. 475,75 Grain binder, cord knotter, A. Stark. 475,821, 475,83 Grain separator, J. M. King. 475,75 Grain separator, J. M. King. 475,75 Grinding separator, J. M. King. 475,75 Grinding See Bedstead folding guard. 475,83 Guard. See Bedstead folding guard. 475,85 Guard. See Bedstead folding guard. 475,87 Guard. 475,87 Guard. 500 Gua	6 Railway rail, J. T. O'Shea
Gate. See Fence gate.	Railway tie, F. S. Ketchum
Gearing, H. L. Shepard 475,90 Gearing, J. Thomson 476,10	1 Railway wires, hanger for electric, C. B. Elliott., 476,192 1 Rake. See Hay rake.
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Domeier & Hagemann	Refrigerator, R. C. Simmons. 475,816 Refrigerator building, D. P. Edgar. 475,851 Registers. Index hand for counting, R. Cart-
Grain blider, cord knotter, A. Stark475,821, 475,82 Grain separator, J. M. King475,77	Registers, lindex hand for counting, R. Cart- wright. 476,129 Registers, pointer and dial for counting, J. 476,129
6) Grate, A. J. Hull	6 Thomson 476,105 Rheostat, F. W. A. Schneider 475,888 Rosster and baker C. McConslogue 475,988
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	Ropeway, wire, W. S. Hall 475,766
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lowering, W.M. Holmes	2 Screen frame. adjustable, G. J. Rothan
W. F. St. impson	22 Sheet metal trimmer and cutter, P. Rohan 475,916 22 Sheet metal trimmer and cutter, P. Rohan 476,075 2 Shutter fastener R Rernstein 476,001
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Holsting apparatus, M. J. Paul. 475,8 Holder. See Candle shadel holder. Dental flask	8 Skate, roller, T. W. Bryant
holder. Electric wire holder. Sleeve and cuff holder. Soap holder.	Smoke consuming furnace, automatic, M. J. Lynn
Hollow articles, apparatus for forming or snap- lng, F. Moorfield	Snap hook, F. White
Hoof expander, J. G. Ripley 475,8 Hook. See Coupling hook. Snap hook.	1 Soap holder, C. S. Hissins
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6 Hot air furnace, W. W. Relsey 476,22 Hot water furnace, E. S. Manny 476,83	0 Spinning mule doffing attachment, G. D. Secor 475,898 8 Spinning spindle Support. H. F. Woodmanev 475,994
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2 Hydrauliem ctor, W. H. Robinett	475,922 4 Sprinklers, device for controlling the water jets 7 of street, C. M. Collins.
Ice chipping implement, E. W. Flynn. 475,37 Lee cream freezer, C. L. Bellamy. 475,78	Smoke consuming furnace, automatic, M. J. Lynn. 475,876
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Journal bearing, A. E. Smith 475,95 Journal bearings, bushing for, F. Latnlip 475,95	0 Swimming attachment, R. P., Jr., & W. N. Cafferty 476,000 3 Swimming equipment, P. Curran
of Journal Pox of Bearing, S. S. Motton	o Syrinke, T. B. Wilcox
7 Knitting machine, M. A. Semler	9 Telegraphy, T. Gothorpe. 475,936 0 Telephone, E. M. Harrison. 476,200
5 Knob, sheet metal, A. T. Matthews	U Telephone, S. F. Sherman
Ladder, extension, D. H. Crews	175,684 55 Thill coupling, Nunamaker & Blanchard
7 Lamp, H. E. N. Mason	55 Tie. See Railway tie. Railway cross tie. 37 Tile stand, G. Holt
4 Lamp, vet Rauge, T. A. McGovern. 475,9 3 Lamp, pocket, J. H. Fawkes. 476,0 2 Lamp, vehicle bracket, S. J. Roofv 475,7	Stelland, wheat, F. A. Evans. 16,138
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