DEVICE FOR ATTACHING HOOKS, ETC., TO STRAPS. -HERMAN D. DETERT, Faribault, Minn. The device consists of a box casing designed to receive a strap having a longitudinal slot down the center of one side and several holes in the center of the other. A metal tongue with pegs on it a proper distance apart is placed beside the strap with its pegs through the holes in the latter, and the tongue and strap are then slipped into the receiving box. The tongue is grooved on the sides in order to be held firmly on the slotted side of the box, and its pegs project through into the holes on the oppo site side, thus holding the strap securely. A book is fastened to the box piece so as to fasten it to the breast

PENHOLDER.-WILLIAM THURMAN, Denton, Tex. The penholder consists of a hollow barrel with a telescopic upper end formed of two telescopic sections, the larger one of which contains a spring placed between the end of the smaller section and the end of a plunger movable in the main barrel and carrying the pen in its lower end. By this arrangement freedom of movement to the thumb and fingers is secured, and cramping of the hand is avoided.

NAIL.-BERNHARD SCHNITZLER, 10 to 14 Bleecker Street, New York, N. Y. The invention is a T-shaped lath nail, in which the head of the T is about half the length of the shank and slightly curved, so that if the nail is driven in at an angle, there will be no sharp cor ners of the head projecting.

FISH-SCREEN FOR ARTIFICIAL WATERWAYS. -George D. Bird, Gunnison, Col. A cylinder covered with wire gauze is placed across the fiume and is turned by a paddle wheel to which it is connected by a chain. A board is fastened to the bottom of the fiume with its upper edge fitting tightly against the cylinder, so that fish are stopped from going any farther, while leaves or debris are carried over by the revolving cylinder.

PNEUMATIC PROPULSION MEANS.-James C. WALKER, White Cliff Springs, Tenn. The propeller shaft is made hollow to be used as an air tube. The jet of air passes through the propeller shaft, and the air thus discharged will fill any space which may be created directly at the rear of the propeller blades.

STORAGE BATTERY. - CHARLES and HARRY LIN-DENBERGER and WILLIAM B. TEAL, care Lindenberger, Teal & Co., 354 Century Building, St. Louis, Mo. The invention consists of an improved batterycell or box made of hard rubber. A perforated partition is placed inside the cell, which is a low, flat box, and a small space is left between the partition and walls of the cell in which to place the electrolyte. The active material is placed inside the center space in the form of blocks which are pressed into contact with lead plates extending along the top and bottom of the cell. The blocks which form the positive and negative plates are separated by a layer of charcoal wrapped in asbestos paper. The ease with which these blocks can be renewed constitutes the main feature of the battery

THREAD CUTTER.-BERT NEWSOME, Minonk, Ill. This device consists of a circular spring ring to slip over the finger. Pivoted in trunnions on one end of the ring is a short cutter blade which is sprung outward by a slight pressure of the finger in order to be used for cutting thread.

#### Designs.

DESIGN FOR A SAW-BLADE.-DOUGALD MCEA-CHERN, Erie, Canada. The teeth of the blade are very nearly the shape of a boot with a sloping leg portion, and the alternate teeth are tapered on their opposite sides, gradually becoming thinner near their rear ends.

DESIGN FOR A BUFFER-SPRING.-ZERAH H. TATE, Erlanger, Ky. The shape of the spring resembles somewhat a pair of tongs, one prong being bent outward and then parallel with the other and having a rectangular plate fastened to it at the end and the other being slightly curved and having a hole near its outer end.

DESIGN FOR A TICKET BLANK.-FERDINAND KRONENBERGER, 1147 Tinton Avenue, New York, N.Y. The design consists of a rectangular blank having perforated lines extending diagonally across its four corners. 'The four rows of perforations practically form a square, and arranged within this square is an outline rectangular panel, in the center of which is a circular row of perforations.

Note.-Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

#### NEW BOOKS, ETC.

ENGINE ROOM PRACTICE. A Hand Book for Young Marine Engineers. John G. Liversidge, Chief Engineer R. N. London: Charles Griffin & Company. Philadelphia: J. B. Lippincott Company. 1899. Pp. 292. 12mo. Price \$2.50.

The volume before us impresses us as being a really practical book on marine steam engineering. It is filled with valuable information and hints which will probably not come amiss to even the engineer who has actual charge of a marine engine. The diagrams are most of them clear and significant. The tables are also valuable. Although the book is written by an Englishman and is devoted to English practice, at the same time marine engineering is very much the same in vessels of all nationalities.

Vorschriften für die Berechnung der Eisernen Brücken der DER EISERNEN BRÜCKEN DER PREUSSISCHEN STAATSKISENBAHN-VERWALTUNG, Hierzu 4 Textabbildungen und 1 Tafel in Steinstich. Mit Einem Anhange vom Eisenbahn-Bauinspector John Labes über die Bestimmung Grösster Momente und Querkräfte für Eisenbahn-Balkenbrücken und die Berechbung der Querträger von Eisenbahnbalkenbrücken. Hierzu 14 Textabbildungen. Berlin: Wilhelm Ernst und Sohn. Price 30 cents.

#### Business and Personal.



#### HINTS TO CORRESPONDENTS.

#### TO INVENTORS

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.	Air compressor, R. L. Dunn	630,495
1	Andiron, grate, and fender, combined, Hickson	
١	& Wood	630,695
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t, I	Bale supporting device for presses, G. A. Lowry,	,
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Business and Personal.	Blow off protector, E. Mather. Board. See Dough board. Boiler. See Steam boiler.	630,386	Filter, heater, and cooler, water, E. S. Clower Fire alarm system, automatic, G. C. Hale
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line for each insertion: about eight words to a line.  Advertisements must be received at publication office	Bottle closing device. J. D. Roche	630,570 630,564 630,737	Fire hose support, C. R. Robinson
as early as Thursday morning to appear in the follow-	Bottles, machine for filling screw stoppered, Ad- cock & Lyle		Fishing reel, H. J. Smith. Flour chest or bin, M. F. Brown Flushing tank, C. J. Ball. Flushing tank, D. D. Buick
ing week's issue.	Bowling device, H. L. Oothout	630,734 630,728	Frushing tank, D. D. Buick. Fruit picker, R. W. Casler. Fuel, apparatus for manufacturing and pressing
Marine Iron Works. Chicago. Catalogue free. "U. S." Metal Polish. Indianapolis. Samples free.			artificial, H. C. B. Forester Fuel. artificial. H. C. B. Forester
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line of Presses, Dies, and other Sheet Metal Machinery. "Criterion" Acetylene Generators, Magic Lanterns &	Burner, See Cactus burner, Gas burner, Hy- droearhon burner, Oil burner,	630,459	Gas burner, a cetylene, E. J. Dolan Gas generating apparatus, a cetylene, H. Daut Gas generator, a cetylene, J. G. Kerr
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Engine is built by the De La Vergne Refrigerating Ma-	Cable coupling, E. S. Decker	630,823	Meyer
chine Company. Foct of East 138th Street, New York.  The best book for electricians and beginners in elec-	Canal, ship, A. Hogeland.  Candle holder for Christmas trees, H. Stolze, Jr. Candrels and the ships W. S. Contagnos	630.423	Gas or vapor engine, H. J. Perkins Gate. See Cattle guard gate. End gate. Lever
tricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y.	Cap, N. Jacobson.  Car coupling, J. J. Caton.  Car coupling, Tailway, L. M. Orosz  Car fender, W. P. Tucker.  Car for ocke, self dumping, J. M. Maris.  Car heating system, J. F. McElroy.  Car railway, J. Nash	63 <b>0,</b> 707 630,655	actuated gate. Gate, W. D. Wilson
18 Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway,	Car coupling, railway, L. M. Orosz	630,817 630,757 630,385	Gear changing mechanism, A. Meyers Gear generating machine, bevel, H. W. Cheney. Gearing, R. W. Jamieson. Gearing, angle, R. W. Jamieson.
New York. Free on application.	Car heating system, J. F. McElroy	630,627 630,552	Generator. See Gas generator. Glass furnace, J. M. Miller
	Car step, extension, Wrede & Saunders	630.764 630.479	thwaite
The atar & Managing	Carriage washing and automatic water level regulating device, combined, W. H. Rawe Carriage windows, means for holding and raising,	630,740	follow
PARTITION OF THE PROPERTY OF THE PARTY OF TH	Carrier, server, and dish unshipper, E. W. Fair-	630,716	Grater, nutmeg, J. B. Baily Grater, soap, J. L. Ryan. Grinder, machine sickle, E. V. Green Grinder, mowing machine sickle, E. V. Green
	banks	630,453	Grinder, mowing machine sickle, E. V. Green Grinding machine, T. Delahay
HINTS TO CORRESPONDENTS.	Caster, Higgins & Oneil	630.696 630,329	Grinding machine, T. Delahay. Grinding machine, drill, L. S. & J. N. Heald Grinding mill, T. L. & T. J. Sturtevant. Guarded can and can guard, H. Bitner
Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.	Centrifugal cooler. W. Muller	630,608 630,727 630,736	Hair picker, J. W. Haines. Hammer, pneumatic, C. K. Pickles. Hammock support, W. F. Parmelee.
References to former articles or answers should	Chains or belts, device for tightening endless, E.		Handle. See Brush handle. Handle for metal ware, T. L. Ferrall
give date of paper and page or number of question.  Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that	Chair. See Revolving chair. Chest. See Flour chest. Churn, J. E. Benjamin.	630,768	Hanger. See Door hanger. Harness, H. R. McDonald
some answers require not a little research, and, though we endeavor to reply to all either by letter	Churns, washing machines, etc., operating mechanism for. L. H. Nutting	630.398	Harness machine, J. G. Eicholtz
or in this department, each must take his turn.  Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of	Chute, E. L. Messler Cigar bunch making machine, E. Pisko Cigar tip cutter. A. Fornander Cigartette making machine, continuous, J. H.	630,520 630,534	Harvester, Pettingill & Sanders. Hat sizing tanks, strainer for, G. Wells Hay and stock rack, combined, Cook & Shannor Hay press, I. W. Stuart. Heater. See Hot water heater. Heater, R. Bigley Heater N. W.
houses manufacturing or carrying the same.  Special Written Information on matters of	Cigarette making machine, continuous, J. H. Venners	630,786 630,539	Heater. See Hot water heater. Heater, R. BigleyHeel rubber, J. H. Morrow
personal rather than general interest cannot be expected without remuneration.	Venners.  Circuit breaker, automatic, E. M. Hewlett.  Clamp, See Colter clamp. Pipe clamp.  Clamp for pipes, shafts, etc., C. B. Albree.	630,641	Hemp disintegrating machine, P. W. Reinshager Hinge, E. Breuning
Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of	Clasp. See Garment clasp. Clothes rack. W. Wildermuth Clutch, friction, E. V. Faucett		Hinge, B. J. Riley Hoe, M. V. Shoffner Hoof trimming nippers, J. D. Decelle
BOOKs referred to promptly supplied on receipt of price.  Minerals sent for examination should be distinctly	Coffee pot, J. K. Cummings	630,666	Hoon. See Metal hoon.
marked or labeled.	Colter, A. C. Gaylord	630,679	Horse detacher, A. L. Wilkie
(7709) P. H. L. writes: A trolley car is		630.420 630.605	
running on wire notches and the overhead wire becomes he negative and the track positive; what result to the	Convertible case, E. M. Turner. Conveyer, E. S. Decker	630,427 630,804	Incubator or brooder tank, M, M. Johnson Intrenching tool, A. G. Hoffmann Ironing table, A. C. Millard
car or motors? I claim the car will run ahead as before. The other gentleman claims it will reverse and run back-	Concrete gaging and mixing machine, J. W. T. Stephens. Conduit or pipe, H. M. & H. A. Gordon. Convertible case. E. M. Turner. Conveyer, E. S. Decker. Conveyer and bucket therefor, E. S. Decker. Conveyer, endless, E. S. Decker. Conveyer, endless, T. O. Terhune. Conveying apparatus, E. S. Decker. Conking vessel S. Schwartz.	630,799 630,803 630,800	Joint. See Rail joint. Kaleidoscope. D. A. A. Buck.
ward. By deciding this argument you will greatly oblige.	Cooking vessel, S. Schwartz	630,805 630,414	itej. dee waten kej.
A. Reversing the current on the line has no effect on the motor. To reverse the motor, the current must be	Corset fastener, S. R. Mills	630,389	Kiln. See Drying kiln. Kiln or furnace, O'Connell & Hillery Knitting machine, G. E. Stevens
reversed either in the armature or in the field magnet, but not in both. The motorman does this when he backs	Lowry Cotton, wool, etc., press for, G. A. Lowry Cotton, wool, hair, etc., press for, G. A. Lowry	630,369 630,370 630,368	Knobs, machine for securing shanks to carriage
the car.	Cotton, wool, hair, etc., press for, G. A. Lowry. Couch and bath tub, combined, S. J. Smith, Counting and detecting apparatus, F. L. Wilder, Coupling. See Cable coupling. Car coupling. Pilot coupling. Shaft coupling. Yoke har-	630,416 630,578	Label, medicine, F. W. Bates Labeling machine, G. F. Gipner Lamp, electric arc, J. E. Morris. Lamp, electric arc, A. Stuttmann Jamp, electric headlight, H. P. Wellman
(7710) W. B. writes: At what longitudinal point does Sunday begin? A. Sunday like all the			Lamps, vaporizer for hydrocarpon, J. Moscowitz
days of the week begins at midnight following the pre-	Cover and detachable pad, H. S. King Crusher. See Rock crusher. Cultivator A. Wilkingon	630,717	Land roller and pulverizer, R. Newton
ceding day, at the meridian of 180 degrees east or west of the meridian of Greenwich, England. The line is in	Cultivator, A. Wilkinson.  Current motor, alternating, M. Deri.  Current motor, alternating, C. P. Steinmetz.  Currentsystem of distribution, combined alternating and continuous M. Deri.	630,489 630,419	Lawn sprinkler, W. Quayle. Lease rod, F. L. Hammond.
the Pacific Ocean, running from Behring Straits west of the Aleutian Islands and the Hawaiian group and east	Currycomb, J. A. C. Grant et al.	630.686	Leather cutting machine, H. Parsons Lemon squ'eezer, C. Morgan Letter, detachable sign, C. F. Johnson
from New Zealand.	Curtain pole, M. A. Harter	630,348	Lemon squ'eezer, C. Morgan Letter, detachable sign, C. F. Johnson Lever actuated gate, J. M. Bell Lifter. See Kettle lifter.
TO INVENTORS.	LUVELES, STESCHING INDSEING DUMPS TO, R. KEIG	h3U.5h1	Lightning rods, machine for making, W. Dodd Limb. artificial, M. E. Rice Linotype machine, B. Nadall
An experience of fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand	Cylinder, headed, W. E. Hill. Desk lid support, E. F. & F. D. Pooley. Dies, forming, H. F. Blackwell, Jr Digger. See Post hole digger.	630,739 630,771	Linotype machine, B. Nadall. Liquid cooler, G. A. Cless. Lock. See Bolt lock. Nut lock. Lock B. Luckonach
for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess	Disinfecting by means of formaldehyde, A. Schmidt	630,782	Lock, R. Luckenbach. Locomotive engine, C. J. Mellin. Loom shuttle, A. Aube. Lubricator. See Automatic lubricator.
the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere A synopsis of the patent laws of the United States and all foreign countries may be had on application, and per-	Door binder, • H. Kingsland. Door check, S. Wilson.	630.811 630.762	Machinist's tool, J. Beach
sons 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	Door hanger and track, R. Ohver	630,610 630,733	ducing magnetism in, C. Steinmetz. Mail bag or pouch, D. R. Hering. Mail pouch fastener, W. E. Griffin. Marker, stock, J. H. Harvey.
Address MUNN & Co., office Scientific American.	Draught equalizer, J. Kramer.  Drawer, furniture, Bankmann & Gebhard	630,362 630,314	Measuring and registering device, E. S. Clayton.
631 Br oadway. New York.	Drawing and doubling machine, lap, J. T. Meats Drill. See Disk drill. Pneumatic drill. Dropper. See Seed dropper.	630,813	Mechanical movement, S. C. Houghton
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for the Week Ending	Douglas & Sundh Electric cables or wires, protective casing for, A.	630,599	Sickel & Riebl. W. D. Herschel. Mortising machine, W. D. Herschel. Motor. See Current motor. Electric motor. Motor, G. M. Stock.
AUGUST 8, 1899,	Sundh	090,091	Nail, B. Schnitzler. Necktie fastener, A. F. James. Nut lock, B. F. Keyser.
AND EACH BEARING THAT DATE.	Electric machine and operating same, dynamo.		Oil burner, A. J. Blackford Oil can, non-explosive, G. A. Mentel. Oiler, air pump piston rod, W. Cooper. Ore roasting furnace, J. F. Keiper. Pag. See Wax pag.
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A nimel tran C 11 Hell 630 246	Electric wires, metallic conduit for, E. T. Green- field. Electrical conducting main, Highfield & Cater Electrically driven spindle, Sawyer & Robb. Elevator, W. F. Smith Elevator, H. R. Tracy Elevator safety device, Terry & Grissom Embossing machine die plate, J. Eberhard. End gate, wagon, J. W. Brubaker. Engine. See Gas or vapor engine. Locomotive engine. Pump engine. Reciprocating engine. Rotary engine.	630,424 630,672	Davis. Petroleum, cleansing purifying agent employed
Anvil. D. Buel. \$30,523 Arc rupturing device, E. J. Berg. \$30,523 Autographic register, Egry & Schirmer \$30,601 Atomizer, C. O. & E. E. Billow \$630,301	Engine. See Gas or vapor engine. Locomotive engine. Pump engine. Reciprocating engine.	100,001	in purifying, H. Frasch. Phosphate, apparatus for mining, transporting wasbing, and drying pebble, L. R. McLain Photographic developing apparatus, J. K
Automatic fubricator, J. H. Fiburn	Engine igniter, gas, Morse & Hobart	630,624	Photographic developing apparatus, J. K. Graeme.  Photographic shutters time regulator for H.
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Battery   See Storage battery   Bearing   Axle   1. Osgood   630,556   Bearing   Axle   1. Osgood   630,556   Bearing   end thrust   V. Belanger   620,581   Bearings   means for supporting   S. C. Davidson   630,529   Bedstead   folding or collapsible   J. Russell   630,748   Beehive   J. Hartman   630,828   Beet puller   1. Goble   630,532   Bedstead   C. S. Amphyster   630,832   Biorola   C. S. Amphyster   630,438	Fencing. etc., maching for spooling and taking up wire for, J. W. Sanderson.	630,745	Plow and cultivator, J. L. Hodges
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beusteau, Jointy or Companie, J. Russell       500,742         Beehive, J. Hartman       630,828         Beet puller, I. Goble       630,538         Bicycle, C. S. Ambruster       630,436         Bicycle, L. De Rango (reissue)       11,764         Bicycle or D. F. A. Brigge       500,610         Bicycle or D. F. A. Brigge       500,610         Bicycle or D. F. A. Brigge       500,610	File box, cashier's, J. T. Hicks.	630,487 630,5 <b>0</b> 5	Post hole digger, R. W. Brooks
Dievale orin F A Priore	Pile A M Vanna	000.070	rower uriven tool, W. F. Barrett

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509 500 577 197 159	Garment clasp. W. G. Bertram Garment fastening device, M. L. Perrottet Gas apparatus, E. Gobbe	630,516 630,683 630,683
553	Game, A. O. Browne. Game, W. K. Clark. Garment clasp. W. G. Bertram Garment fastening device, M. L. Perrottet Gas apparatus, E. Gobbe Gas burner, a cetylene, E. J. Dolan. Gas generating apparatus, acetylene, H. Daut. Gas generator, acetylene, J. G. Kerr Gas generator, acetylene, Mace & Gerard. Gas lighting device, automatic electrical, S. M. Meyer	630, 97 630, 834 630,722
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653 465 745	picker. See Fruit picker. Hair picker. Pilot coupling. Teal & Mc Pherson. Pipe case, smoker's, J. H. Tierney. Pipe clamp, H. A. Wahlert. Pipes by freezing, apparatus for preventing planter by freezing, apparatus for preventing planter. Planter corn, H. L. Dooley. Planter, potato, A. J. Colburn. Plow, W. F. Hartig. Plow, Muehr & Frerich. Plow and cultivator, L. Hodges. Plow and cultivator, L. Hodges. Plow and cultivator, L. L. Lovett. Plow and cultivator, L. T. Lovett. Plow and cultivator, L. T. Kissam. Post the digreg, L. W. Brooks. Post hole digreg, L. W. Brooks. Pot. See Coffee oot, W. F. Barrett. Power driven tool, F. H. Cathcart. Press. See Hay press. Printing press.	630,456 630,816 630,355 630,367
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(Continued on page 186)

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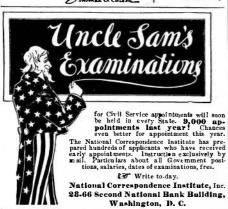
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