#### RECENTLY PATENTED INVENTIONS. Engineering.

STEAM BOILER FURNACE.—William C. Douthett, Pittsburg, Pa. The grate bar of this furnace is composed of a main section having in its top alternat ing heads and spaces and agitating sections provided with blocks operating in the spaces, and having lateral shoulders by which to engage the main section and limit the downward movement of the blocks. The grate bars are supported by shafts which form parts of rockers, and by rocking the shafts in one direction the blocks of one section of the grate bars are tilted upward, while by rocking the shafts in the other direction the blocks of the other section are tilted upward,

MOVABLE DAM, ETC.—William L. Marshall, Chicago, Ill. This invention relates to dams or sluiceway gates of the bear trap type, and provides a construction whereby sliding friction is avoided, all trouble from drift is obviated, and the greatest possible height of dam in proportion to width of leaves may be obtained, the dam easily closing flat, and being started from rest with the least bead of water. The invention consists in extending the leaf that is effective in forming the dam onehalf or slightly more than one-half of its width above and beyond the line of attachment of the two leaves, to increase the height or lift of the dam relative to the width of base, and at the same time reduce the volume of the hydraulic chamber. 'The two leaves are connected at or just above the center of pressure upon the ex tended leaf.

WELL PUMPING POWER.-George W. Grimes, Bluffton, Ind. An improvement has been devised by this inventor in power devices for operating pump rods or lines for either water or oil wells in great numbers from a central station, the improvement insuring uniform motion and great efficiency in the use of power. A post extends upward from a bedplate and a sleeve rotating on the post has an annular flange at its lower end with a groove registering with a groove in the bedplate, there being anti-friction balls in the grooves and a drive wheel secured to the lower end of the sleeve. A ring plate is mounted on the drive wheel eccentric to its axis, there being a pump line plate on the ring and anti-friction rollers carried by the plate and bearing against the periphery of the ring.

#### Railway Appliances.

GUARD FOR SIGNAL HANDLES. - George M. French, Mattoon, Ill. To prevent the improper handling of train order or block signals, from the neglect or forgetfulnes of telegraph operators and others, this inventor has devised a guard for pivotal attachment to the signal operating handle, the guard being provided with spurs which may be used as a file to receive orders and papers. When in safety position the guard will not interfere with the working of the signal, but when in danger position it prevents the operator from grasping the handle, and so calls his attention to the fact that it must not be moved, the train orders, etc., being brought immediately before the operator when he attempts to operate the signal.

#### Electrical.

BICYCLE LIGHT.-David W. Stinson, St. Louis, Mo. A strong and efficient light is provided by this invention, the electricity therefor being generated by the motion of the wheel, while a governor operates to maintain a steady and uniform power for the lamp. The lamp and generator are preferably held in a casing removably attached to the steering fork. A friction wheel engages the forward wheel of the bicycle, and a friction disk on a vertical shaft engages the side of the friction wheel, this friction disk being raised and lowered, as the speed of the wheel is greater or less, by means of a governor consisting of toggle joints separated by a spring. The vertical shaft rotates the armature within segmental field pieces, a high speed causing the friction disk to move in toward the axis of the fric tion wheel, while with lower speeds it approaches its periphery, thus maintaining the generation of a substan-

Note.-Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.

#### NEW BOOKS, ETC.

STEAM AND HOT WATER FITTER'S TEXT Воок. By Thomas E. McNeill. New York: David Williams. Pp. 140. Price \$1.

A book which contains the substance of a course of lectures delivered at the New York Trade School to young workmen, or those who are fitting themselves to be such, in this special department of labor, ought to be exceedingly plain in its description, and thorough in its attention to details—a character which is fully borne out in this little text book. The contents are arranged in the form of question and answer, and the book has numerous illustrations. Any young plumber, desiring to take up this line of work, cannot do better than make himself master of the information here so concisely and fully presented.

The American Educator, a work in four large quarto volumes, is in course of publication, and announced to be completed about June 1, by the Syndicate Publishing Company, of Philadelphia, whose anno incement will be found on another page. It promises to be a work of great merit, bringing down facts and figures to March 15 of this year. Although designed as a general encyclopedia of universal knowledge, it will give particular attention to the newest subjects, treating fully of the recently threatening bubonic plague : giving plans and details of the proposed new Hudson River Suspinsion Bridge, at New York; aeronautics and balloon voyages; battle ships and cruisers; agricultural chemistry, bacteriology, etc.; the latest electrical experiments, monetary theories, new inventions and discoveries, etc. The work will also be an up-to-date biographical dictionary and gazetteer of the world. Especial inducements are offered to those ordering the work in advance.

#### Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line, Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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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.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department each must take his turn.

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Suecial Written Information on matters of

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Minerals sent for examination should be distinctly marked or labeled.

(7143) L. J G. asks: 1. Could a storage battery be made from some small tumblers with lead plates? A. A storage battery could be made as described. It would be rather small for advantageous results. 2. Are the separate cells connected the same as a number of dry batteries? They are to be charged by eight bichromate of potassium batteries. A. Connect in series for charging. For use connect according to work they have to do. 3. What candle power are these batteries supposed to give? Each one contains 2 carbons and 1 zinc. A. You may allow about one candle power for a quart bichromate cell.

(7144) E. J. B. asks for a recipe for mixing coal tar, and applying it as a roof paint, also if it can be shaded by minerals and how. A. Coal tar for roof or fence painting can be mixed with any common dry mineral paints, such as chrome yellow, oxide of iron or Princes' metallic paint and thinned with naphtha or turpentine to allow of using a brush. The colors cannot be made bright, but will be of dark buff or brownish red.

(7145) A. W. asks how it would do to make the field magnet for the simple electric motor all in one piece of wrought iron 21/2 inches in width by 7/5 inch thick, and also could the armature core be made of an iron ring instead of the winding of the wire; would this give entire satisfaction? A. You can make the field as you specify, but the armature core should be of wire; by no means of solid iron. A solid core will be the seat of Foucault currents and will be a source of waste of power,

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AND EACH BEARING THAT DATE.

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79,324 79,459 79,283	Rail joint, J. Downs.	579,472 579,427
79,395 79,170	Railway, electric E. Lachmann Railway, inclined cable, T. E. Brown. Railway rail, W. C. Ferguson Railway signal or whistle blowing attachment for locomotives, J. Pilaud.	579,264 579,281
79,361 79,124 79,430	Railway signal or whistle blowing attachment for locomotives, J. Pilaud. Railway stock guard, Z. Wiggs. Railway, suspension, D. M. Harman. Railway switch, automatic, C. Rudolf. Railway sy stem, electric, G. Westinghouse, Jr. Railway ite plate, B. Wolhaupter. Railway track rails, combined nut lock and joint plate for J. Rutherford	579,507 579,147 579,332 579,527 579,520
79,410 79,153 79,400	Railway ti e, R. P. McRae. Railway tie plate, B. Wolhaupter. Railway track rails, combined nut lock and joint plate for, J. Rutherford	579,520 579,5 <b>09</b> 579,456
79,467 79,121	Railway vehicles, current collecting device for, G. Westinghouse	579,506
79,275 79,258	Reclining chair, J. S. & D. H. Shapira.  Reel and support, C. S. Lord.	579,499
79,319 79,416 79,245	Rein holder and guide, combined, D. G. Webster. Rein holder and guide, combined, D. G. Webster. Riveting machine, H. Fuchs. Riveting machine, A. Parfitt. Roasting furnace, J. E. Gaylord et al. Rubber footwear, J. M. King.	579,247 579,478 579,441
79,477 79,364 79,238		
79,232 79,154 79,254	Safety pin, A. H. Chilton Sash cord fastener, C. H. ©cumpaugh Sash fastener, C. C. A. Bauercamper. Sash fastener, automatic, Wallenstein & ©ettin-	579,440 579,529 . 579,246
79,234 79,375 79,348 79,295	ger. Sash holder, J. B. English. Saw frame, H. L. Morrell. Saw, insertible tooth, J. Coyle	579,476 579,492
79,551	Saw, insertible tooth, J. Coyle. Sawmill tension device, band, T. A. & N. Coleman Saw set, W. H. Chellieu. Saw, surface, W. H. Bendere. Saw swage, A. Carrier.	579,382 579,220 579,417 579,129
79,315 79 <b>,4</b> 19	Sawing machine multiple W M Rarry	579,463 579,550 579,193
79,406	Scale, computing, H. E. Swift. Scale dial, computing, J. H. Swihart. Scale loop, C. G. Strubler. Scraper and leveler, road, J. N. Michaels et al Sealing device, bottle, H. L. Ferris. Separator. See Liquid separator. Steam separa	. 579,192 . 579,404 . 579,518
79,198 79,318	tor. Sewing and welt beveling mechanism, shoe, J. B	579,146
79,378 79,415 79,408 79,554	Sewing machine, electrically operated, J. S. Big.	. 579,223 - . 579,511
79,554 79,237	Shade or globe, J. G. Pennycuick. Sharpener, lawn mower, L. H. Slaght Sheet metal can, automatic sealing, E. Norton Sheet metal tan epening can, J. Zimmerman.	. 579,350 . 579,500 . 579,241 579,46
79,127 79,204	Sheet metal can, automatic sealing, E. Norton. Sheet metal top opening can, J. Zhumerman. Shoe machine jack, E. E. Winkley. Shoe repairing jack, W. Bayhouse. Shoe, turn, G. E. Milner. Shot distributing wad, R. S. Elliott.	. 579,203 . 579,251 . 579,159
11,594 79,414 79,401	Shot, muzzle attachment for scattering, C. J. Sta	. 579,5
79,436 79,287 79,35 <b>6</b>	A. E. Schmidt	. 579,282
79,191 79,487 79,322 79,368	Sifting coal ashes, device for, J. Clench. Sign, illuminated, C. P. Gates. Signal. See Electrically operated signal. Signal handle guard, G. M. French. Signal recording mechanism, A. E. Colgate. Siphon, Smith & Julienne.	. 579,34 . 579,34 . 579,22
79,394 79,513	Siphon, Smith & Julienne. Skeins of silk, support for, P. G. Turner (now by remarriage P. G. Gardner. Skins, machine for treating P. N. Down	. 579,50 7 . 579,52
79,513 79,178 579,533 579,297	Skirt supporter, A. A. Watts	. 579,14 . 579,47 . 579,50
579,535 579,303 579,313	Slat holder and adjuster, J. C. Byxbe	. 579,53 . 579,42 . 579,54 . 579,20
79,291 79,493 79,409	Sole machine die or former, E. E. Winkley	. 579,14 . 579,20 . 579,51
579,188 579,325 579,202	Spooling machine, C. S Lord. Stairway, B. J. Danielson. Stail, cattle F. Jarrett. Staple setting instrument, J. P. Hasty. Staple setting machine, G. Hay. Steam gage alarm attachment, W. J. & H. C	. 579,485 . 579,135 579,48 579,53
79,212 79,486	Staple setting machine, G. Hay	. 579,14

# Vehiele light and governor for same, D. W. Stinson. 579,190 Son. 579,190 Vehicle safety step, J. T. Cole. 572,133 Vehicle was hing apparatus, W. H. Phelps. 579,242 Vehicle wheel, C. E. Tomlinson 579,350 Velocipede, Rubel & Naylor 579,351 Velocipede, G. A. Skarin 579,370 Velocipede, ice, P. Bieth 579,370 Vending machine, coin controlled, J. W. Peterson 579,320 Weighing machine, automatic grain, H. W. Mosher. 579,240 Weighing, packing, stamping and labeling machine, R. L. Patterson. 579,240 Wheel. See Bicycle wheel. Gear wheel. Grinding wheel. Vehicle wheel. Grinding wheel. Vehicle wheel. 579,180 Wheel. B. F. Rittenhouse 579,460 Window, W. W. Wilbur. 579,460 Wiring device, house, H. R. Young 579,217 World, cotton waste, etc., and apparatus therefor, degreasing and cleansing, F. N. Turney. 579,524 Woven fabric, T. McAuliffe. 579,180 Woven fabric, T. McAuliffe. 579,180 Woven fabric, T. McAuliffe. 579,183 Writing machine platens, facing for, H. O. Canfield. 579,128

#### DESIGNS.

Bell frame, electric, N. H. Raymond	26 706
Bicycle parcel carrier, F. Yunck	96 705
Boiles of the state of the transfer of the tra	20,130
Boiler setting, steam, E. S. T. Kennedy26,802 to	26,805
Braid, V. Schuck	26,814
Braid, V. Schuck. Can dle shade, J. Vanderbilt	26.788
Carpet, A. M. Rose	26.815
Carpet, E. G. Sauer	26 817
Carriage body, W. R. Connor.	26,011
Checkrein guide loop, S. H. Hull.	20,001
Checkiell guite 100p, S. H. Hull	20,793
Cigar boxes, ornamental print for, N. Witsch	26,785
Desk, J. Gramelspacher	26,813
Desk, J. Gramelspacher	26,810
Ewer, w. 11. Grindley	25. (89
Fence, E. W. Buch	26,800
Grooving machine frame, H. S. Grannis	90,000
Hook cornet Davis & France	20,000
Hook, carpet, Davis & Evans	20,192
Hook, coat, J. R. Hirsh	26,791
Jar or bott le, J. Ruppert.	26,790
Kettle scraper, M. K. Norton	26.798
Lamp, bicycle, W. S. Hamm	26 794
Nut lock, A. W. Spear	96 901
Puzzle, G. L. Heugel	26 704
Razor handle, M. C. Lefferts	20,104
Wage in a control of Letterts	20,783
Waffie iron support, Griswold & Hollands	26,797
Wagon body, delivery, Z. T. Rickards	26,808
Well strainer, A. D. Cook	26,800
	,000

#### TRADE MARKS.

INADE MARKS.	
Agricultural machines and implements and their	
parts, Osborne & Company	29,719
Kutz Fiber Company	29,727
Beer, lager, F. Feil	29,737
liquid products layer Otto Huber Browers	29,736
Cement and asphalt, Schillinger Brethers Company & Schillinger Brothers.	29,733
Chemical preparations, McKesson & Robbins	20 720
Chemical preparations, C. Raspe. Cocoa for drinking or cooking, pewdered, S. L.	29,728
Bartlett. Cotton goods, especially sheetings and drillings,	29,740
Tata & Company	29.714
Tata & Company	,
Kelly Fertilizers, J. J. Turner & Company	29,726 29,734
Food, stock, C. R. Love	29,735
caster Mills	29,713
Caster Mills	
Medicines, laxative, Tarrant & Company	29,717
Mineral waters. natural, estate of B. Doolittle Nipples for nursing bottles, Meinecke & Company.	29,739
Packing, steam and hydraulic piston, J. M. Wat t's	29,722
Sons Paints, ready mixed, Harrison Brothers & Com-	29,721
pany	29,732
pany.  Paper, metal roofing and fabric roofing, building, Kansas City Metal Roofing and Corrugating	
Company	29,720
Periodicals, fashion, Butterick Publishing Com-	29,712
Pumice stones for grinding purposes, H. Bender &	•
Company	29,731 29,718
Stethoscopes or instruments for rendering andi-	
ble sounds in the human body, M. Wallach Surgical instruments and appliances, Kny-Scheerer	29,723
Company	29.724
Whisky, W. M. Fliess & Company	29,738
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Company	40,100

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