

having a knuckle connection. The lower member of each hinge is secured to the upper portion of the door, the upper member of each hinge being attached to the carriage. A rod connects a lift-lever fulcrumed upon the door with the carriage. A bolt held to slide and rock upon the door is provided with a lateral cam projection adapted to engage the door when the bolt is rotated. A keeper is provided for the bolt independently of the door and also a locking device for the bolt. The device is applicable to freight cars, barns, refrigerators, etc.

Designs.

ANTI-RATTLER PLATE.—Charles T. Redfield, Glen Haven, N. Y. The leading feature of this design consists in arranging an upright wing at an angle slightly less than a right angle to the lower or base wing, which is tapered toward its free end. At its upper end the upright wing is provided with a lateral forked extension.

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

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.

Marine Iron Works. Chicago. Catalogue free.
"U. S." Metal Polish. Indianapolis. Samples free.
Gasoline Brazing Forge, Turner Brass Works, Chicago.
Yankee Notions. Waterbury Button Co., Waterbury, Ct.
Schwaab Stamp & Seal Co., Milwaukee. Send for cat'g.
We buy patents on specialties, or manufacture on royalty. V. P. Van Horne & Co., Dayton, Ohio.
Gasoline Engines and Launches. Free catalogue. Geo. H. Gere Y. and L. Works, Grand Rapids, Mich.

Neuhaus & Pauer, Vienna, Austria. Importers of new machinery and novelties. Best American references.
FERRACUTE Machine Co., Bridgeton, N. J. Full line of Presses, Dies and other Sheet Metal Machinery.

Improved Bicycle Machinery of every description. The Garvin Machine Co., Spring and Varick Sts., N. Y.

The celebrated "Hornaby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS.

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 This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question. **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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

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

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7461) **M. R. B.** asks how to prepare a drill for making holes in glass. A. A flat drill, made of new steel and heated to a dark red and plunged in the ordinary zinc chloride soldering solution, will drill glass readily. The drill must be sharpened before it is hardened.

(7462) **R. A. C.** says: 1. How can a fine telescope lens be cleaned without injuring it? A. A very soft old linen handkerchief is best; if greasy, wipe with a little tissue paper wet with weak alkali. Lenses should be cleaned as rarely as possible; use old linen, not silk. 2. How can ranges of vision at sea, from different elevations, be estimated? A. You will find a full description of range finders in our COAST DEFENCE SUPPLEMENT. Mailed for 25 cents.

NEW BOOKS, ETC.

THE STORAGE BATTERY. A Practical Treatise on the Construction, Theory and Use of Secondary Batteries. By Augustus Treadwell. New York: The Macmillan Company. 1898. Pp. xix, 257. Price \$1.75.

In pursuing his work with storage batteries the author found himself greatly hampered by the lack of any compact data concerning the construction of many cells which have been and which are on the market and by the paucity of reliable discharge curves. Believing that a book containing such data and curves would prove valuable, not only to the student and manufacturer, but also to all who are interested in storage batteries, he began the compilation of the book and has succeeded admirably. American and foreign patents are cited at the bottom of the pages.

A TREATISE ON MAGNETISM AND ELECTRICITY. By Andrew Gray. In two volumes. Vol. I. London and New York: Macmillan & Company. 1898. Pp. xvi, 472. Price \$4.50.

The author of the present work deals with the subject largely from a mathematical standpoint. The work is

not a treatise on the mathematical theory of electricity only, but successfully brings theory and practice together. Some elementary acquaintance on the part of the reader with electrical phenomena and their laws is presupposed, and a considerable knowledge of mathematics is also needed. By those who can understand a work of this kind it will be warmly welcomed.

COAL CATECHISM. By William Jasper Nicolls. Philadelphia and London: J. B. Lippincott Company. 1898. Pp. 218. Price \$1.50.

The "Coal Catechism" is intended for a great number of intelligent readers who have no technical training and yet who prefer to seek knowledge by reading special subjects rather than fiction. A large proportion of them have neither time nor inclination to peruse the great geological and statistical reports of the coal industry of the United States or to study the subject in technical works. Information is conveyed in the popular question and answer form. It is rather a good idea to have a series of books on similar subjects, and it is to be hoped that this volume may be the precursor of many others dealing with similar subjects. The book is attractively printed and bound and is provided with a comprehensive index.

THE TRACTION ENGINE: ITS USE AND ABUSE. By James H. Maggard. Revised and enlarged by an expert engineer. Philadelphia: David McKay. 1898. Pp. 128. Price \$1.

A book of instruction for operators of farm engines has been needed for some time, and the present work appears to deal with the subject in a practical manner. First a general description of trucking engines is given, followed by general directions for the proper use of engines and boilers, telling what to do in case of an emergency.

TALES FROM MCCLURE'S: WAR. Being true stories of camp and battlefield. New York: Doubleday & McClure Company. 1898. Pp. 193. Price 25 cents.

A charming series of little books is now being issued by the publishers of McClure's Magazine. The present volume, of almost vest pocket size, contains a number of thrilling stories by Major-General Nelson A. Miles and others.

AMERICAN CEMENTS. By Uriah Cummings. Boston: Rogers & Manson. 1898. 8vo. Pp. 299. Price \$3.

Since the publication of Gen. Gillmore's classic work, many years ago, no book has been produced which deals with the subject of American rock cements. The period since the publication of Gen. Gillmore's treatise has been far the most important in the history of the industry. The changes which have taken place during this time, the marked advances which have been made and the new processes which are being employed and the marvelous growth of the trade resulting from a widening of the markets for the production, clearly present a profitable field for investigation, and furnish many facts worthy of record. In the present book adequate consideration has been paid to the claims and merits of American rock cements. The arrangement of the book is excellent, and it is a fine piece of technical book-making. The subject of cements is treated in all its bearings and special attention is paid to tests of all kinds. Another section of the book is devoted to various cement works, including artistic views of them. There is quite a full list of structures made in American rock cement, giving the location of the various cement works from which the cement was obtained.

OUTLINES OF PRACTICAL HYGIENE. By C. Gilman Currier, M. D. Third edition, revised and enlarged. E. B. Treat & Co. 1898. Pp. 461. Price \$2.

Practical hygiene is one of the most important subjects which the architect or physician has to encounter. The present work appears to be an eminently thorough and practical treatise upon the subject, dealing with soil and climate, clothing, bathing, exercise, occupation, lighting, heating, ventilating, building and streets, foods, diet, water, the disposal of wastes, the disposal of the dead, bacteria, disease and disinfection, longevity, etc. The book does not discuss therapeutical measures, except in so far as they belong legitimately within the domain of hygiene.

A MANUAL OF HYGIENE AND SANITATION. By Seneca Egbert. Philadelphia and New York: Lea Brothers & Company. 1898. Pp. 368, vii. Price \$2.25.

The present work contains a plain statement of the fundamental principles and facts of hygiene and sanitation together with such explanations and details based on American practice as serve to make the work clear and readable. Of all the medical sciences, clearly the most important is that which prevents disease instead of curing it, and which deals with entire communities as well as with individuals. We cannot have too many good books on this subject. The present book appears to be an excellent one and fully up to the times.

HAND-BOOK OF NATURE STUDY. For teachers and pupils in elementary schools. By D. Lange. New York and London: The Macmillan Company. 1898. Cloth, 12mo. Pp. 329. Price \$1.

This work is a valuable primer to natural history and science, and is calculated to afford teachers the means of inculcating their pupils with desirable and essential knowledge regarding the more common plants, trees, birds, insects and quadrupeds, without entailing upon themselves special courses of study. The book is thoroughly practical, and as valuable to the instructed as to the instructor.

THE GENERAL MANAGER'S STORY. Herbert Elliott Hamblen. New York: Macmillan Company. 1898. Pp. 311. Price \$1.50.

We cannot have too many good stories about American railway life, which differs in many respects from that in other countries. The book is very interesting and, at the

same time, gives a great deal of information about rail-roading which the ordinary individual is desirous of acquiring, when he can obtain it with little mental effort. After reading this book, one can discuss learnedly about "broke in two," "flagging" and other mysteries of the rail.

ELECTRIC CATALOGUE OF ELECTRICAL PLANTS AND MACHINERY FOR ELECTRIC LIGHTING, TRANSMISSION OF POWER, ELECTRO-PLATING, DEPOSITING, WELDING, ETC. By Ernest Scott & Mountain, Limited. New-castle-on-Tyne.

The volume before us is a bound collection of catalogues, and is interesting as showing the use of electric power for many purposes. It is handsomely got up and is freely illustrated by wood engravings, half tones and line drawings. It probably illustrates some of the best examples of British engineering practice.

THE DIFFERENTIAL. Published by the Junior Class of Case School of Applied Science. Cleveland, Ohio. Pp. 147, xxxiii.

THE MDCCCXCIX CORNELLIAN. The book of the Junior Class of Cornell University. Vol. xxx. 1898. Pp. 284, 49.

TO INVENTORS.

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 the laws and practice on both continents, and to possess unequalled 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 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, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

JUNE 28, 1898,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Abdominal supporter, S. L. Fowler..... 606,410
Acid and making same, amidonaphtholdisulfide, F. Bender..... 606,437
Adjustable chair, J. J. White..... 606,612
Aerated water fountain or engine, Brake & McKee..... 606,373
Air compressor, F. Richards..... 606,428
Alarm. See Automatic alarm. Burglar alarm. Safe alarm..... 606,405
Alarm system, C. Coleman..... 606,405
Aluminum sild and making same, D. A. Peniakoff..... 606,576
Animal trap setting device, D. Luy..... 606,566
Atomizer, R. W. Prescott..... 606,240
Auger, A. Y. Pearl..... 606,575
Auger, H. G. Watrous..... 606,319
Automatic alarm for protecting crops, etc., L. L. Cubbage..... 606,517
Automatic switch, F. W. Ross..... 606,392
Axle boxes, dust guard for car, J. S. Patten..... 606,232
Back pedaling brake, L. E. Hoffman..... 606,217
Bag holder, seed, C. N. Choate..... 606,274
Bamboo rods, reducing and shaping, Durant & Frichard..... 606,623
Battery. See Voltaic battery.
Bearing, antifriction, J. E. Lawrence..... 606,485
Bearing, ball, S. T. Randolph..... 606,241
Bearing, ball, J. R. Saucier..... 606,491
Bearing, roller, Timken & Heinzelman..... 606,536
Bicycle, roller, Timken & Heinzelman..... 606,536
Bed, invalid, J. M. Scribner..... 606,247
Belt clamp, Carley & Rickards..... 606,512
Belt, endless, A. Christensen..... 606,376
Bicycle attachment, M. Burt..... 606,185
Bicycle attachment, C. S. Morse..... 606,185
Bicycle brake, J. E. Allen..... 606,496
Bicycle brake, J. M. Downer..... 606,334
Bicycle brake, J. Higson..... 606,626
Bicycle handle bar, adjustable, W. C. Dayhoff..... 606,192
Bicycle saddle, B. S. Seaman..... 606,393
Bicycle seat, W. H. Thomas..... 606,514
Bicycle seat support, J. M. Glenon..... 606,455
Bicycle steering guide, Dunning & Ba row..... 606,525
Bicycle support, P. Metzarth..... 606,487
Bicycle support, P. Person..... 606,578
Bicycles, etc., carrier for, W. M. Tegart..... 606,367
Billiard table frame, J. Dockstadter..... 606,196
Bladder for sheet metal, etc., H. E. Veit..... 606,434
Block. See Wood block.
Boiler. See Sectional boiler.
Boiler attachment, steam, A. Griese..... 606,354
Boiler grate, steam, Davy & Edey..... 606,191
Book cover, writing, C. H. Ainsworth..... 606,180
Book, manifold, H. Whitfield..... 606,321
Book, wall, G. R. Pease..... 606,233
Bottle cap, Scholch & Schrader..... 606,588
Bottle, non-refillable, E. C. Bowne..... 606,507
Bottle, non-refillable, J. McCafferty..... 606,238
Bottle, non-refillable, H. Strawson..... 606,508
Bottle, non-refillable, J. A. Trimble..... 606,238
Bottle stopper, N. Lindbergh..... 606,230
Box. See Folding box.
Brace. See Excavation extension brace.
Brake. See Bicycle brake. Car brake. Wagon brake.
Brake beam, W. A. Pungs..... 606,298
Brake for holists or similar apparatus, A. Boizani..... 606,268
Brake pipe connection, C. W. Vaughan (reissue)..... 11,673
Brush, J. T. Burnip..... 606,184
Brush, clothes line, D. F. Gallagher..... 606,482
Brush machine cage device, M. Young..... 606,371
Buckle, D. E. Hipwell..... 606,627
Buckle, D. E. Lawrence..... 606,629
Buckle for trace carriers, back band, M. Dallas..... 606,518
Burglar alarm, S. B. & M. Daniels..... 606,519
Burner. See Coal burner. Gas burner. Hydro-carbon burner.
Button, A. S. Crane..... 606,277
Cabinet, photograph, T. F. Adams..... 606,325
Cake turner, M. D. Good..... 606,205
Camera focusing attachment, D. E. Sharretts..... 606,394
Camera, photographic copying, H. Stender..... 606,593
Can head, key opening, B. W. Morfoot..... 606,471
Car brake beam, railway, Simpson & Handiges..... 606,308
Car brake, electrohydrostatic automatic, Buchel & McGloin..... 606,330
Car coupling, G. T. Rohn..... 606,583
Car coupling, A. Ruscher..... 606,245
Car coupling, J. Timmer..... 606,603
Car draught rigging, railway, J. Conrath..... 606,447
Car driving gear, motor, W. Sydenham et al..... 606,311
Car side bearing, railway, C. F. Huntoon..... 606,345
Carriage rocker attachment, baby, G. L. Morgan..... 606,569
Carrier. See Parcel carrier.
Chair, See Adjustable chair.
Chair and bed, combined, B. Murtagh..... 606,488
Chimney cleaner, A. Messenger..... 606,567
Chlorine derivatives of toluene, making, P. P. Monnet..... 606,470

Chute and crib, revolving coal, R. T. Darrab..... 606,520
Clear tip cutter, T. A. Cole..... 606,377
Cigarette, H. Goldenfarb..... 606,537
Clamp. See Belt clamp. Fence clamp. Sewing machine presser clamp.
Clea, pivot, H. Braatz..... 606,509
Clock, carriage, H. W. Mitchell..... 606,568
Clothes drier, E. A. Williston..... 606,401
Clothes line, P. Sinnott..... 606,363
Clutch, friction, Worrall & Leaperance..... 606,534
Coal burner, pulverized, G. W. Prescott..... 606,239
Coal support, J. T. Stevens..... 606,477
Cock, stop and waste, J. H. Glauber..... 606,535
Coin operated mechanism, J. D. Kneidler..... 606,463
Collar blanks, etc., machine for forming and folding, A. D. Fenwick..... 606,526
Combs, apparatus for drawing off in circle, Long & Foster..... 606,564
Cooking utensil, A. F. Humphrey..... 606,552
Corn binder bundle carrier, Fridmore & Johnston..... 606,579
Cot, folding, C. F. Moore..... 606,355
Counter cutting machine, D. L. Chandler..... 606,375
Coupling. See Car coupling. Pipe coupling. Thill coupling.
Cows from kicking, device for preventing, C. A. Eidsmo..... 606,481
Crotch or lace holder, W. O. Hill..... 606,215
Cross tie, metallic, W. F. Penner..... 606,577
Crushing roll, A. Pesant..... 606,224
Current meter, T. W. Varley..... 606,369
Curtain fixture, J. B. Bullis..... 606,442
Curtain fixture, A. S. Lord..... 606,468
Curtain folding machine, J. Heselwood..... 606,341
Cutter. See Clear tip cutter. Meat or vegetable cutter. Pipe cutter. Potato cutter.
Cycle, J. A. Wronski..... 606,323
Dental base plate, W. R. Evans..... 606,198
Dental matrix retainer, J. W. Ivory..... 606,460
Dental mouth mirror, C. Harnden..... 606,456
Desk attachment, W. H. Carrier..... 606,514
Disinfecting apparatus, F. Glizl..... 606,536
Display rack, H. D. Wells..... 606,610
Distance traveled by cars, etc., mechanism for indicating, J. H. Whiting..... 606,258
Double or compound fork, E. M. Bradley..... 606,372
Dress guard attachment, W. Shirley..... 606,492
Dress shield, B. F. Sutton..... 606,251
Drier. See Clothes drier. Glove drier.
Drill. See Electric drill.
Drills, etc., machine for shaping or forging and sharpening rock, S. P. Quick..... 606,390
Dye and making same, blue, B. Heymann..... 606,212
Dye and making same, blue, azin, Ott & Kroeber..... 606,235
Dye and making same, blue, tertrazo, J. Bammann..... 606,181
Dye and making same, dark blue, tertrazo, J. Bammann..... 606,246
Dye, blue, F. Bender..... 606,436
Dye, blue black, F. Bender..... 606,438
Dye, green, F. Bender..... 606,438
Dye, yellow brown cotton, R. Demuth..... 606,193
Electric drill, portable, E. Holmes..... 606,549
Electric machine, dynamo, R. S. Dobble..... 606,407
Electric motor, J. G. Truman..... 606,605
Electrical communication, system for, A. T. Brown..... 606,620
Electrical distribution system, Scott & Lammie..... 606,589
Electromotive force, regulation of rotary transformer direct current, B. G. Lammie..... 606,540
Elevator safety device, R. Paroselli..... 606,489
Engine. See Explosive engine. Gas engine. Hydraulic engine. Locomotive engine. Rotary engine. See Lubricating engine.
Engine muffler, G. L. Gardner..... 606,280
Engines, electric lighter for gas, A. J. Tackle..... 606,312
Envelope, J. A. Lefferts..... 606,349
Envelope, G. Southard..... 606,366
Envelope fastener, W. Barnard..... 606,456
Envelope opener, W. Yates..... 606,281
Excavation extension brace, J. K. Murphy..... 606,631
Explosive engine, S. Bouton..... 606,504
Fabrics, apparatus for applying liquids to textile, F. Girard..... 606,454
Farm gate, T. C. Lippitt..... 606,467
Faucet, automatic, H. E. Knottner..... 606,249
Feed water regulator, L. Dery..... 606,527
Fence, I. N. Feltenberger..... 606,527
Fence, Flesher & Crisler..... 606,530
Fence clamp, wire, F. Johnson..... 606,461
Fence compensator, wire, S. C. Bowen..... 606,506
Fence machine, A. L. Kitzelman..... 606,430
Fence post, L. E. Ketchum..... 606,558
Fence spacer, wire, C. Baxter..... 606,182
Fence stay weaving device, Baxter & Schrader..... 606,266
Fence tightener, wire, S. C. Bowen..... 606,505
Fencing, woven wire, A. L. Kitzelman..... 606,421
File and locking mechanism, card indexing, H. Hamilton..... 606,286
File, letter, C. C. Boykin..... 606,508
Filter, W. H. Hull..... 606,218
Filter, O. H. Jewell (reissue)..... 11,672
Filter, J. Wilson..... 606,260
Filter, water, H. Baile..... 606,437
Filtering apparatus, G. G. Fryer..... 606,453
Firearm sight, S. E. Fischer..... 606,452
Fire hydrant, N. Barry, Jr..... 606,500
Fireproof mask, P. Dallinger..... 606,379
Fireproof partitions, skeleton structure for, P. Kuhne..... 606,348
Fireproof plastering support, A. Kuhne..... 606,387
Flashlight powder apparatus, A. Hensley..... 606,340
Fluid meter, prepayment, H. Green..... 606,625
Fluid pressure motor, P. Schlachter..... 606,304
Fodder bundler, H. J. Kester..... 606,287
Folding box, A. Hubard..... 606,337
Food compound and making same, W. Gebhardt..... 606,624
Fork. See Double or compound fork.
Fountain. See Aerated water fountain.
Fruit picker, Drysdale & Raburn..... 606,524
Fumigator, J. T. Comross..... 606,416
Furnace, Stuebeline..... 606,294
Furnace, F. E. Swift..... 606,234
Garbage from buildings, apparatus for disposing of, I. C. Goodridge..... 606,435
Gas burner, R. Momand..... 606,225
Gas compressor, J. Sedlacek..... 606,430
Gas engine, T. H. Hicks..... 606,386
Gas forming apparatus, D. Cleghorn..... 606,189
Gas generating apparatus, acetylene, Grenier & Grand..... 606,539
Gas generating gas fixture, J. F. Williams..... 606,435
Gas generator, acetylene, H. Schneekloth..... 606,305
Gas tip, acetylene, L. K. Bohm..... 606,441
Gate. See Farm gate. Railway safety gate.
Gate, C. D. Bell..... 606,502
Gate, S. Stout..... 606,250
Generator. See Gas generator. Smoke generator.
Glass worker's tool, L. Friedrich..... 606,200
Glove, L. A. Gray..... 606,339
Glove drier, J. W. Hull..... 606,628
Governor, explosive engine, H. P. Maxim..... 606,425
Grading and ditching machine, C. F. Hinman..... 606,216
Hame or collar fastener, C. J. D. Strohecker..... 606,598
Hammer, power, C. A. Vaughn..... 606,370
Hammer lock frame, A. A. Young..... 606,616
Hanger. See Shaft hanger.
Harrow, rotary, R. Rakestraw..... 606,300
Harvester, potato, J. N. Cocker (reissue)..... 11,674
Hat guard, W. Lord..... 606,486
Heating or vulcanizing apparatus, G. W. Slater..... 606,364
Heel, J. E. O'Neill..... 606,429
Hinge, lock, W. H. Hotelling..... 606,415
Hoof pad, C. J. Horton..... 606,343
Hook. See Nail hook. Whiffetree hook.
Horse detacher, C. F. Kinchloe..... 606,419
Hub, vehicle, W. T. Lewis..... 606,350
Hydraulic engine, J. Gill..... 606,327
Hydrocarbon burner, liquid, G. W. Prescott..... 606,238
Incandescent burner protector, J. W. McKnight..... 606,226
Incandescent lights, mantle or hood for Welsbach or other, J. Moeller..... 606,224
Indicator. See Cash indicator. Current indicator. Station indicator. Valve indicator.
Ink, printing, F. E. Hall..... 606,542
Iron, making planished sheet, J. Stephens..... 606,595
Ironing table, W. E. Harriman..... 606,210
Jar. See Fruit jar.
Jar and can opener, fruit, J. J. Schairer..... 606,587
Jewelry, article of, F. X. Zirkilton..... 606,617
Kite, J. F. Cooley..... 606,622
Knitting machine, circular warp, A. E. Lindner..... 606,353
Knob attachment, J. H. Shaw..... 606,530
Label, druggist's and medicine, Harris & Stahl..... 606,457
Labeling machine, can, T. C. Northcott et al..... 606,227
Ladder, extension, F. Heine..... 606,438
Lamp, R. D. Cody..... 606,445
Lamp, acetylene gas, G. E. Hesse..... 606,385
Lamp, acetylene gas generating, H. Oehl..... 606,228
Latch, H. E. Russell..... 606,246
Latch and lock combined, O. Holmes..... 606,550
Lid for pots, etc., J. W. Strother..... 606,589
Lifter. See Shaft lifter.
Liquid conveyer, W. J. York..... 606,615
Lock. See Seal lock.
Lock, J. A. Gray..... 606,282
Locomotive engine, compound, G. S. Strong..... 606,633
Locomotive, burning, G. W. Prescott..... 606,237
Loom, and Hutchinson..... 606,237
Lubricator, McNeil & Rogers..... 606,294
Malt stirrer, J. A. Saladin..... 606,586
Manhole cover, T. P. Greger..... 606,206
Meat or vegetable cutter, L. P. Buckles..... 606,511

(Continued on page 30)