

ENGINEERING INVENTIONS.

A car door has been patented by Mr. Thomas G. Ruffhead, of Renovo, Pa. This invention has special reference to mounting or hanging the door, and is designed to maintain a close joint between the door and car, however much the latter may be warped or sprung out of shape.

A wicket dam has been patented by Messrs. Benjamin F. and John C. Thomas, of Louisa, Ky. The dam is pivoted on a hinged post and supported by a prop abutting on a heater of special construction, whereby the dam can be easily raised and placed in position or lowered to discharge the accumulated waters.

A car coupling has been patented by Mr. Thomas Gaskins, of Arcadia, Fla. The coupling hooks have their front faces curved upwardly and pivoted to work vertically, in combination with horizontal bolts, a shoulder of support in front of the bolts for holding the hooks up, suitable drawheads, and other novel features.

A weighing scale for railway cars has been patented by Mr. Elonild Duplessis, of Lake Weedon, Quebec, Canada. This invention provides means whereby a railway ca. can be weighed at any point on the track, and with equal facility when the car is not standing level, the weight being taken at the four points of support.

A compound rail has been patented by Mr. Edward G. Chamberlain, of San Jose, Costa Rica, Central America. It has a central bar with flanged base and side reversible bars bolted thereto, having their lower edges resting entirely on top of the flanges of the central bar, the central and side bars having their upper edges even to form the tread of the compound rail.

AGRICULTURAL INVENTION.

A sheaf carrier for grain harvesters has been patented by Mr. William Bell, of Morden, Manitoba, Canada. It is made with a fork-shaped support or table to hold the sheaves delivered to it from the binding table, so that it may be conveniently operated by the harvester for dumping the sheaves to the ground, thereby preventing waste and saving time and labor.

MISCELLANEOUS INVENTIONS.

A fruit drier has been patented by Mr. Zachens W. Merithew, of Grand View, Ind. It is intended especially for open-air drying, and provides a simple construction for ample scaffold room in good drying weather, and perfect inclosure by means of the scaffolding in bad weather.

A heating drum has been patented by Mr. Walter Markle, of Tonganoxie, Kansas. It is designed to utilize waste heat from below to heat upper apartments, and provides certain improvements whereby air may be drawn from the heated room without admitting smoke or gas.

A combined wardrobe, bureau, and washstand has been patented Mr. Henry F. Wulff, of San Antonio, Texas. This invention covers a novel construction and arrangement of parts in an article of household furniture designed to be substantial, inexpensive, and very conveniently arranged.

A hoisting machine has been patented by Mr. Fridrich H. A. Peters, of Detroit, Mich. An endless rope is employed for operating the hoisting wheel, which is so constructed that the rope will be prevented from slipping, and will also take a hold upon the wheel to assist in hoisting.

A cider mill has been patented by Mr. Charles W. Boyle, of Bradley, Mich. It has pressing rollers journaled on a frame, with an endless belt passed between the rollers and bed rollers inclined toward one end, to facilitate discharge of the juice, the invention covering various novel features.

A sleigh knee has been patented by Messrs. Herman and Henry Wesle, of Medford, Wis. Combined with the runner and the beam is a cylindrical convex casting secured to the beam, with proper bearing plates, being designed to allow the runner to conform to inequalities of surface over which it passes.

A shell fish refrigerator has been patented by Mr. Henry C. Constantin, of Brooklyn, N. Y. This invention provides a receptacle for clams and oysters in the shell for restaurants, lunch rooms, etc., where they may be kept at an even, cool temperature, and readily withdrawn without opening the doors of the receptacle.

A combined slate and ruler has been patented by Louise M. Dyer, of Yazoo City, Miss. The frame has longitudinally and transversely ranging grooves, and a ruler fitted in the grooves at each side of the slate, these rulers being arranged with pencil guiding slots ranging lengthwise and crosswise of the slate.

A metallic mould has been patented by Mr. Philip F. Dillon, of Savannah, Ga. It is intended for casting metals and permitting of the shrinkage of the casting without subjecting it to strain, having a contractile core and contractile cope to permit of the shrinkage of the casting in the mould without danger of straining or cracking it.

A secondary battery has been patented by Mr. Ludwig Epstein, of Martinikenfelde, near Berlin, Germany. This invention covers a method of preparing powdered lead for electrodes, consisting in adding sulphate of lead to molten metallic lead and stirring the liquid mass until it has been transformed into a finely divided powder, with other novel features.

A baling press has been patented by Mr. William A. Laidlaw, of Cherokee, Kansas. The plunger has a slot fitted to receive a rope, combined with a shaft and a spring for giving it a rotary tendency, the rope secured to the shaft having a number of knots

whereby its connection with the plunger may be adjusted, thus making a press whose plunger rebounds or springs back after each pressing impulse.

A prop for top buggies has been patented by Mr. Isaac Bateman, of Fern, Pa. It is made of a volute-shaped spring, having a square socket formed on its inner and lower end and curved spring arms on its outer and upper end, the whole being constructed integrally, the volute spring being made thinner in its lower portion than the upper portion, to render it more elastic.

An ice creeper has been patented by Mr. Charles J. Lung, of Jamestown, N. Y. It has a metallic plate with spurs projecting from its under side, a toe strap secured to the front edge of the plate and metal clips secured to its rear corners, in connection with an elastic heel or back strap having rings through which the clips pass and by which the band is secured to the plate, the device being readily applied or removed without soiling the hands.

SCIENTIFIC AMERICAN BUILDING EDITION.

MAY NUMBER.—(No. 31.)

TABLE OF CONTENTS.

- 1. Elegant plate in colors of a double house for two thousand five hundred dollars, with floor plans, sheet of details, etc.
2. Plate in colors of a cottage costing five thousand dollars, with floor plans and sheet of details, etc.
3. Page of engravings giving a general view of the successful operations of moving the great Brighton Beach Hotel at Coney Island.
4. Perspective elevation and floor plans of a house costing six thousand dollars.
5. Design for a house to stand on a knoll or high ground. Perspective and floor plans.
6. Perspective view and ground plan for the Orange Heights Hotel, now erecting on Orange Mountains—Arthur D. Pickering, architect.
7. Half page engraving of the new United States Post Office at Springfield, Mass., and new United States Post Office and Court House at Los Angeles, Cal.
8. Drawing in perspective of the elegant residence of Dr. S. F. Hanse at Minneapolis, Minn.
9. Sketch of a dwelling in Rochester, N. Y., cost about six thousand five hundred dollars.
10. Perspective and floor plans for a country house of moderate cost.
11. Elevations and floor plans for a frame dwelling. Cost about five thousand dollars.
12. Illustrations giving a perspective view and floor plans of a cottage for fifteen hundred dollars.
13. Repairing the foundations of a large grain mill and elevator at Providence, R. I.—Half page engraving.
14. Floor plans and perspective view of a substantial dwelling. Cost eight thousand dollars.
15. A dwelling for two thousand five hundred dollars. Perspective and floor plans.
16. Perspective and floor plans of two modern dwellings, costing eight thousand dollars and two thousand eight hundred dollars respectively.
17. Plans and perspective elevation for a two thousand two hundred dollar house.
18. Illustration showing the beautiful dwelling and grounds of Timothy Merrick, Esq., Elmwood, Holyoke, Mass.
19. Elegant residence of Dr. J. S. Hurlbut, Esq., School Street, Springfield, Mass.
20. Miscellaneous contents: Relative strength of stones and bricks.—Echoes and reverberations in rooms.—Dimensions of the most important of the great cathedrals.—Boston hot water distribution.—Roofs for mills.—Combined rain water cut-off and filter, illustrated.—The genesis of a tornado.—A millstone recipe.—Lumber trade notes.—Warming and ventilating.—Grant memorial competition.—The Arkansas dry kiln.—Paint for fresh cement.—Foreign made joinery.—Floor paints.—Large dams.—Preservation of timber.—How to ornament a vase.—Enemies to varnish.—Filling for floors.—Wooden water pipes.—Ready mixed paints.—The Ridgway refrigerator system, illustrated.—A sanitary heating apparatus, illustrated.—The Prentice patent metallic hip shingle.

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages; forming, practically, a large and splendid MAGAZINE OF ARCHITECTURE, richly adorned with elegant plates in colors and with fine engravings, illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

The Fullness, Richness, Cheapness, and Convenience of this work have won for it the LARGEST CIRCULATION of any Architectural publication in the world. Sold by all newsdealers.

MUNN & CO., PUBLISHERS, 361 Broadway, New York.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess 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.

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 next issue.

Patent foot power scroll and circular saw, mortisers, lathes. Seneca Falls Mfg. Co., 666 Water St., Seneca Falls, N. Y.

Wanted—10 or 15 ton steam roller, new or not. P. Griffin, Utica, N. Y.

To Inventors—We want patented articles in plain or polished wrought and cast iron or steel, also leather, to manufacture and introduce. Will buy or pay royalties. Address C. I. L., box 778, New York.

Veneer machines, with latest improvements. Farrel Fry. Mach. Co., Ansonia, Conn. Send for circular.

"New Drill Chuck," holding straight taper or square shanks. Address Standard Tool Co., Cleveland, O., mfrs. of twist drills, reamers, and special tools.

Portable grinding mills. Chas. Kaestner & Co., Chicago, Ill.

Steam Pipe Covering, Sectional and Plastic. Write for Pamphlet. Jno. A. McConnell & Co., 119 Water St., Pittsburgh, Pa.

For Sale—Important patent for printing in fast colors on all textile fabrics and in any number of colors at one impression. Being successfully worked in England. For further particulars apply to Worthington, 94 Leadenhall Street, London, England.

Steel name stamps, 15 cts. per letter. Steel figures, \$1 per set. F. A. Sackmann, Cleveland, O.

The Diamond Prospecting Co., 74 and 76 W. Lake St., Chicago, Ill., general agents for the Sullivan diamond prospecting drills.

For the specific purpose for which they are designed, the batteries manufactured by the Partz Electric Battery Co., 1723 Chestnut Street, Philadelphia, Pa., are the best in the world. Catalogue now ready.

Feed grinders. Chas. Kaestner & Co., Chicago, Ill.

For the latest improved diamond prospecting drills, address the M. C. Bullock Mfg. Co., 138 Jackson St., Chicago, Ill.

Barnham's turbine wheel is sold at net price to mill owners. Catalogue free. Address York, Pa.

Nickel Plating.—Manufacturers of pure nickel anodes, pure nickel salts, polishing compositions, etc. \$100 "Little Wonder." A perfect Electro Plating Machine. Agents of the new Dip Lacquer Kristaline. Complete outfit for plating, etc. Hanson, Van Winkle & Co., Newark, N. J., and 92 and 94 Liberty St., New York.

Perforated metals of all kinds for all purposes. The Robert Aitchison Perforated Metal Co., Chicago, Ill.

The Railroad Gazette, handsomely illustrated, published weekly, at 73 Broadway, New York. Specimen copies free. Send for catalogue of railroad books.

The Knowles Steam Pump Works, 113 Federal St., Boston, and 93 Liberty St., New York, have just issued a new catalogue, in which are many new and improved forms of Pumping Machinery of the single and duplex, steam and power type. This catalogue will be mailed free of charge on application.

Link Belting and Wheels. Link Belt M. Co., Chicago.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

The Holly Manufacturing Co., of Lockport, N. Y., will send their pamphlet, describing water works machinery, and containing reports of tests, on application.

Engines and boilers. Chas. Kaestner & Co., Chicago, Ill.

Supplement Catalogue.—Persons in pursuit of information of any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. THE SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Improved fine tools for mechanics.—Manufactured by L. S. Starrett, Athol, Mass. Send stamp for full list.

Lockwood's Dictionary of Terms used in the practice of Mechanical Engineering, embracing those current in the drawing office, pattern shop, foundry, fitting, turning, smith's and boiler shop, etc., comprising over 6,000 definitions. Edited by a foreman patternmaker. 1888. Price, \$3.00. For sale by Munn & Co., 361 Broadway, New York.

Planing and Matching Machines. All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

Billings' Double-acting Ratchet Drills. Drop Forgings all kinds. Billings & Spencer Co., Hartford, Conn.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

60,000 Emerson's 1887 Book of superior saws, with Supplement, sent free to all Sawyers and Lumbermen. Address Emerson, Smith & Co., Limited, Beaver Falls, Pa., U. S. A.

Friction Clutch Pulleys. D. Frisbie & Co., N. Y. city.

"How to Keep Boilers Clean." Send your address for free 88 page book. Jas. C. Hotchkiss, 120 Liberty St., N. Y.

Paint mills. Chas. Kaestner & Co., Chicago, Ill.

For Steam Heating—the Dunning Patent Wrought Iron Boiler. Over 13,500 in use. Manufactured by New York Central Iron Works, Geneva, N. Y., U. S. A.

Automatic taper lathes. Heading and box board machines. Rollstone Machine Co., Fitchburg, Mass.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

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

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

May 8, 1888,

AND EACH BEARING THAT DATE.

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

- Air brake, automatic, R. Solano..... 382,667
Alarm. See Burglar alarm.
Album clasp, T. M. Hass 382,302
Alumina, obtaining, K. J. Bayer..... 382,508
Axle lubricator, W. Co. e, Jr..... 382,456
Back band, H. C. Johnson..... 382,365
Badge, designation, R. H. Lee..... 382,367
Bale tie, T. T. Wells..... 382,396
Barrel for outhouses, T. W. Carrio..... 382,510
Barrels, device for moving E. H. Mott..... 382,618
Batteries, automatic switch for secondary, C. A. Faure..... 382,599
Batteries, plate for storage, C. D. P. Gibson..... 382,358
Battery. See Secondary battery.
Bed bottom, W. F. Ade, Jr..... 382,501
Bed bottom, W. C. Bailey..... 382,401
Bed bottom, spring, W. A. Mooney..... 382,486
Bed bottom, spring, F. Spoehr..... 382,496
Bed, folding, G. W. Cook..... 382,460
Bell, alarm, R. J. Whitson..... 382,348
Belt fastener, H. C. Herr..... 382,305
Belt tightener, J. H. Bringold..... 382,587
Bird cage spring, E. Wagner..... 382,571
Board. See Multiple switch board. Wash board.
Boiler. See Hot water boiler. Steam boiler.
Boilers, apportioning furnace draught for batteries of steam, N. W. Pratt..... 382,459, 382,490
Boilers, removing impurities from steam, J. Binks..... 382,508
Book, check, Carmichael & Townsend..... 382,457
Boot or shoe soles, dieing-out machine for, Cree & Clough, Jr..... 382,294
Boot or shoe sole fitting machine, W. Avery..... 382,631
Bottle stopper, J. Conner..... 382,459
Box. See Knockdown box.
Bracket or support for shelves, desks, and tables, C. Eggleston..... 382,396
Brake. See Air brake. Car brake. Vehicle brake.
Brick and marking thereon the grade or color thereof, apparatus for gauging, J. C. Anderson..... 382,503
Bricks with relation to their color and grade, assorting, J. C. Anderson..... 382,504
Buckle, G. F. Eberhard..... 382,516, 382,545
Buckle, tug, H. C. & L. C. Minard..... 382,545
Buckles, loop for suspender, D. L. Smith..... 382,494
Buggy boot, P. Bosche..... 382,349
Buggy prop, top, I. Bateman..... 382,584
Burglar alarm, W. E. McIntosh..... 382,484
Burglar alarm, W. L. Swan..... 382,609
Burglar alarm, electric, H. C. Roome..... 382,439
Burglar alarm, electric, G. F. Taft..... 382,444
Burner. See Vapor burner.
Burnishing machine, C. J. Addy..... 382,581
Bustle, C. O' Day..... 382,378
Button fastener, C. E. Vreeland..... 382,342
Button setting machine, J. H. Vinton..... 382,341
Button setting machines, die for, J. H. Vinton..... 382,340
Button, sleeve, Mook & Headley..... 382,485
Cable road and machinery for operating the same, E. J. Weston..... 382,575
Calipers, beam, C. E. Billings..... 382,348
Can bodies, apparatus for forming sheet metal, F. M. Leavitt..... 382,537
Can heading machine, F. M. Leavitt..... 382,538
Can heading machine, J. Solter..... 382,567
Cane and chair, combined, J. H. Kamerer..... 382,308
Car brake, J. Kilpatrick..... 382,310
Car coupling, T. Gaskins..... 382,602
Car coupling, J. B. Sampson..... 382,390
Car heater, W. P. Bending..... 382,507
Car, railway, H. Niehoff..... 382,434
Car, stock, Bernard & Rhodes..... 382,405
Car, stock, J. B. Calkins..... 382,456
Cars, electric motor for railway, W. M. McDougall..... 382,483
Cars, steam heating apparatus for railway, J. Emerson..... 382,566
Cars, steam heating pipe connection for, J. Emerson..... 382,597
Carburetor, C. Benz..... 382,565
Carding machines, mechanism for stripping the top flats of, A. Falls..... 382,598
Carpet stretcher, L. R. Dey..... 382,295
Carriage, child's, G. Rixinger..... 382,491
Carriage top spring, S. W. Cately..... 382,293
Carrier. See Sheaf carrier.
Cartridge reloading implement, W. Mason..... 382,482
Case. See Show case.
Cash indicator and recorder, Heady & Patterson..... 382,647
Cash indicator and register, J. H. Patterson..... 382,552
Cement, hydraulic, J. Murphy..... 382,376
Chain attachment, watch, H. M. Stroud..... 382,627
Chain, detachable link, R. F. & J. H. Redick..... 382,564
Chair. See Dental and other chair.
Chairs, etc., canopy attachment for, A. A. Smith..... 382,493
Check rein holder, F. Snyder..... 382,392
Churn, H. Doty..... 382,639
Churn, J. Richards..... 382,387
Cider mill, C. W. Boyle..... 382,406
Cigar bunching machine, J. R. Williams..... 382,449
Cigar fillers, mould for measuring and partly shaping, S. Henry..... 382,008
Cigar perforating machine, A. P. Neff..... 382,543
Clamp. See Hose clamp. Soldering clamp.
Clasp. See Album clasp.
Clasp, S. M. Limes..... 382,480
Clod crusher and land roller, combined, C. L. Jensen..... 382,612
Clothes drier, H. Heine..... 382,422
Coal, chain conveyor for handling, J. M. Dodge..... 382,638
Collar fastener, horse, G. Marshall..... 382,540
Colters, attaching, J. F. Packer..... 382,485
Cooking utensils, steam, J. O. Egerton..... 382,595
Corn husker, J. Spence..... 382,563
Corset, J. Koon..... 382,478
Cotton sweep, T. W. Knight..... 382,533
Coupling. See Car coupling. Hose or pipe coupling. Pipe coupling. Thill coupling.
Cradles, fan attachment for, J. Rau..... 382,386
Crane, portable, J. A. Huth..... 382,307
Crank bending machine, G. H. Howe..... 382,426
Creamer, centrifugal, H. F. Beiming..... 382,506
Crusher. See Clod crusher.
Cup. See Filter cup.
Current regulator, alternating, E. Thomson..... 382,536
Curtain fixture, C. Buckley..... 382,509
Dam, wicket, B. F. & J. C. Thomas..... 382,395
Dental abrading disk, C. W. F. Holbrook..... 382,609
Dental or other chair, H. D. Justi..... 382,473