

ENGINEERING INVENTIONS.

A railroad rail fastener has been patented by Mr. Charles Netter, of New York City. It consists essentially of a clamp plate formed with a recess in one edge, in combination with a keeper of novel form having enlarged lower end and inclined side recesses, for fastening the rails to metallic or other ties.

A rotary engine has been patented by Mr. James I. Friar, of Pascagoula, Miss. It is made with a cylinder having a concentric longitudinal opening and a cam held on such opening at each side of the cylinder, in combination with a piston traveling in the opening, and gates adapted to slide radially in the piston and carrying friction rollers traveling on the cam.

A car coupling has been patented by Mr. Thomas J. Eddleman, of Fort Worth, Texas. The link has a lateral hook and vertical perforation, while a laterally swinging gate extends part way across the mouth of the drawhead, the invention also covering other novel features, whereby the car may be uncoupled from the sides, and a car provided with this coupling may be coupled to one having the ordinary link and pin coupling.

MISCELLANEOUS INVENTIONS.

A portable house has been patented by Mr. Drummond Welburn, of Orlando, Fla. The invention covers novel features of construction and combinations of parts, the principles of which may be employed in building two-story houses, or in the building of outhouses and houses for birds and beasts.

A thill coupling has been patented by Messrs. Enoch F. Drake and Alfred C. Wait, of Salina, Kansas. This invention covers a novel construction and combination of parts designed to overcome all rattling, and to effectively and securely hold the thill or pole against accidental displacement or detachment.

A water wheel has been patented by Mr. Selden B. Lard, of Waterville, Kansas. It is made with a series of overlapping leaves or buckets pivoted a little at one side of their center, and with a series of loosely pivoted and sliding catches for engaging the leaves or buckets when folded, to lock them closed.

A hand truck has been patented by Messrs. Wiltshire Sanders and John B. Rafferty, of Reno, Nevada. It is especially designed for handling large boxes and baggage, having a frame located intermediately between the wheels, with a roller having projecting handles supported to turn freely in bearings.

A fire escape has been patented by Mr. Louis P. Santy, of Clements, Kansas. This invention consists principally of three systems of lazy tongs connected together and arranged to be elevated and lowered by a screw mounted in the platform of a truck, to which the device is adapted to be attached for use in streets.

A wrench has been patented by Mr. Joseph G. Hoffman, of Ste. Genevieve, Mo. This invention relates to a socket wrench, the jaws of which are designed to safely withstand torsional strains, and be readily locked to fit nuts or other articles of any given size, or be made self-adjusting to fit articles of various sizes.

A velocipede has been patented by Mr. Francis M. Wolf, of Springfield, Mo. It has two large drive wheels and two small wheels adjusted to a frame of novel construction, being designed as a simple and inexpensive vehicle with which a high rate of speed may be attained on ordinary roads, and which may be readily steered and controlled.

A shoe clasp has been patented by Mr. Herbert S. Pullman, of Rockville, Conn. It is especially adapted for use with arctic overshoes, the object of the invention being to economize in metal and produce a simple, easily manipulated tongue adapted for use in connection with the ordinary form of keeper and in essentially the ordinary manner.

A stove pipe drum has been patented by Mr. Mark J. Liddell, of South Englewood, Ill. It is made with an outer cylinder, an intermediate cylinder, and an inner draught pipe, the latter having near its lower end an opening and a damper, the device being adapted to facilitate the radiation of heat passing through a draught pipe from a stove or heater.

A washing machine has been patented by Mr. Jacob L. Martin, of Leo, Ind. The machine is of that class in which one washboard is reciprocated with its face in proximity with the face of another washboard, to secure durability and easy operation of the machine, and holding the articles to be washed to the action of the washboards.

A well boring apparatus has been patented by Mr. Benjamin Andrews, of New Orleans, La. Combined with a non-rotating well tube is a boring head which rotates on the lower end of the tube, and a rube working within the latter and detachably connected with the boring head, so that it may be utilized for rotating the latter, with other novel features.

A shutter worker has been patented by Mr. Franklin W. Kelly, of Vermontville, Mich. This invention covers certain novel combinations of parts and details of construction to prevent the outside gearing from becoming clogged or injured by rain, ice, or snow, to provide for the ready detachability of parts, and to render the clutch mechanism safer to work and more durable.

A line holder for bricklayers has been patented by Mr. Julius C. A. Vogelsong, of Ardmore, Pa. It consists of a flat pin with a shoulder to engage the corner of a wall, a bearer to rest upon the face of the wall, a recess at the inner end of the shoulder, a handle, and guide holes for the line, by which a gauge line may be readily applied when either a corner or flat surface is available.

A mast hoop has been patented by Mr. Charles S. Mott, of Patchogue, N. Y. It is of that description in which two separate sections are hinged to each other and provided with a spring catch for locking them together, the object of the invention

being to simplify, strengthen, and improve the construction both of the hinge joint and the locking and unlocking joint.

A knockdown box has been patented by Mr. Casbar G. Krikorian, of Smyrna, Turkey. It is preferably made of wood, with sides and ends so hinged to a bottom piece that when thrown up at right angles they will rest on the upper face of the bottom piece, the invention also covering other novel features in the construction of a box specially designed for transporting fruit, etc.

A combined scarf tip and fastener has been patented by Anna L. Seibert, of New York City. Its body has a toothed tongue and a slide, and is also provided with an opening for the reception of a scarf band and a spur for engaging the band, the device effecting a saving of cloth and dispensing with the use of the ordinary pin for engaging the neck band to the shield.

A case for surgical or other instruments has been patented by Mr. William R. Leonard, of New York City. Combined with the bed of the case are sockets or clamps pivoted to the bed to move laterally, and hinged to swing vertically, with other novel features, whereby an instrument may be conveniently and expeditiously extracted or replaced without the fingers coming in contact with the blade.

A music box has been patented by Mr. Emile Bornand, of Ste. Croix, Switzerland. The main spring case has a gear wheel meshing into the pinion of the wind wheel, and a second gear wheel meshing into a pinion on the cylinder shaft, there being also other novel features, by which the cylinders can be easily and accurately placed in position in the box and quickly interchanged.

A ventilator has been patented by Messrs. George and David Lemley, of New Orleans, La. The body has an open upper end, above which is held a conical cap, a series of circumferentially arranged bell-mouthed pipes projecting through the body below the top, and having inclined and converging inner ends, the construction being designed to create an upward draught capable of counteracting any draught having a downward tendency.

Two kinds of plastering composition form the subject of two patents issued to Mr. John H. Fitzgerald, of Frankford, West Va. That to be used for the first coat consists of sand, sawdust, plaster of Paris, slaked lime, sugar, and carbonate of soda, while that for the second coat is made of cream of tartar, pumice stone, sugar, lime, and plaster of Paris, each composition being compounded and applied in proportions and after a manner described.

A double acting force pump has been patented by Mr. Winfield S. Shahan, of Russell, Kansas. At the upper ends of side standards a lever is fulcrumed to which the plungers are pivoted, so that by operating the single lever both plungers are alternately raised and lowered, the lower end of each plunger having a flexible packing formed with a concave cup at its lower surface, so that the pressure of the water in the cup will expand its lower edge and thus automatically pack the plunger.

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.

Pattern letters and figures to place on patterns for castings. (H. W. Knight & Son, Seneca Falls, N. Y.)

Lathes for cutting irregular forms. Handle and spoke lathes. I. E. Merritt Co., Lockport, N. Y.

For Sale—U. S. patent No. 387,364. Book clip. Address, J. W. Nolan, 85 Randolph St., Chicago, Ill.

One steam passenger elevator, "Tufts." Two cylinders, 8' x 10'; car, 7' x 7'; inside finely finished. Lately running in "Butler Exchange," Providence (displaced by two hydraulic elevators). In excellent order. For sale low by Volney W. Mason & Co., Providence, R. I.

A French engineer (of the Ecole Central de Paris) settling in the City of Mexico with his family, desires to act as agent or correspondent for American manufacturing and commercial houses. Address L. Poillon, Hotel Grignon, 21 9th Street, New York.

Teneriffe and its Six Satellites; or, the Canary Islands—Past and Present. By Olivia M. Stone. With maps and illustrations from photographs taken by Harris Stone. In two volumes. Price, \$15.00. Address Munn & Co., 361 Broadway, New York.

All books, app., etc., cheap. School of Electricity, N. Y.

Just Published—Elements of Electric Lighting, including electric generation, measurement, storage, and distribution. By Phillip Atkinson, A.M., Ph.D., author of Elements of Static Electricity. 260 pages; 104 illustrations. Price, \$1.50. For sale by Munn & Co., 361 Broadway, New York.

Pratt & Letchworth, Buffalo, N. Y., solicit correspondence relative to manufacturing specialties requiring malleable gray iron, brass, or steel castings.

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.

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

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

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

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

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

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

Wrinkles and Recipes—Compiled from the SCIENTIFIC AMERICAN. A collection of practical suggestions, processes, and directions for the mechanic, the engineer the farmer, and the housekeeper. Illustrated colored frontispiece. Edited by Park Benjamin, Ph.D. Third edition. Price, \$2.00. 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' Patent Adjustable Four and Six Inch Pocket Wrenches. Billings & Spencer Co., Hartford, Conn.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Hoisting Engines, Friction Clutch Pulleys, Cut-off Couplings. The D. Frisbie Co., 112 Liberty St., N. Y.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv., p. 28.

Rollstone variety lathe—bores, beads, and turns at the same time. Rollstone Machine Co., Fitchburg, Mass.

Belting.—A good lot of second hand belting for sale cheap. Samuel Roberts, 369 Pearl St., New York.

Duplex Steam Pumps. Volker & Felthousen Co., Buffalo, 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.

SCIENTIFIC AMERICAN BUILDING EDITION.

NOVEMBER NUMBER.—(No. 37.)

TABLE OF CONTENTS.

- Elegant plate in colors of two cottages costing from twelve to fifteen hundred dollars, details, etc.
- Elegant plate in colors of two residences at Springfield, Mass.
- A villa at New Rochelle, N. Y., recently built at a cost of eight thousand six hundred dollars. Perspective and floor plans.
- Full page illustration of the new "Times" building, New York City.
- A Queen Anne house at Richmond Hill, N. Y., costing five thousand dollars, complete. Plans and perspective.
- A residence at Orange, N. J., costing thirteen thousand three hundred dollars complete. Perspective and floor plans.
- A small house or office costing one thousand dollars. Floor plan and perspective.
- A Queen Anne cottage at Richmond Hill, N. Y. Cost about seven thousand five hundred dollars. Plans and perspective.
- Pavilion of the Republic of Chili at the Paris Exposition of 1889.
- Sketch of John Bunyan's pulpit, formerly in the old meeting house at Lambeth. Sketch of old meeting house at Lambeth.
- A residence at Worcester, Mass. Perspective and floor plans. Cost about eight thousand dollars.
- Design for a Hotel at Richmond, Va.
- The New Municipal Buildings, Glasgow, recently opened by Her Majesty.
- The Glasgow Exhibition—view from under the central dome.
- Perspective and floor plan of the Episcopal Church at Richmond Hill, Long Island, built at a cost of four thousand dollars.
- A Barn and Carriage house for eight hundred dollars. Plans and perspective.
- Miscellaneous contents: Decoration of windows.—The atrium in Roman houses.—Interesting experiments with Portland cement.—Shavings as a filling.—Idaho streams that vanish.—The practical limit of speed.—Ventilation of cow stables.—Polishing granite.—Substitute for white pine.—The hardy blue passion flower, illustrated.—Ivy on buildings.—Petrified wood in Texas.—Roman tessellated pavement at Box, England, illustrated.—Slow-burning construction, illustrated with three figures.—Hedges of flowering plants.—The squares of Paris.—The Hartman inside sliding window blind, illustrated.—A new woodworking machine, illustrated.—The M. H. Jacobs portable warm air furnace, illustrated.—An improved self-draining floor for stalls, illustrated.

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.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

October 30, 1888,

AND EACH BEARING THAT DATE.

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

Addressing machine, automatic, Brooks & Beal.....	392,088
Alarm. See Burglar alarm.	
Album, picture, H. Boussemaere.....	391,558
Augers, twisting, M. Hardsock.....	392,119
Axle lubricator, M. W. Brown.....	391,942
Axle lubricator, car, A. W. Wright.....	392,142
Backband loop and terret, combined, J. McFadden.....	392,058
Bag. See Paper bag.	
Bag machine, L. D. Benner.....	391,936
Baling press, A. Swab.....	392,081
Baling press, A. Wickes.....	392,085
Bed bottom, E. A. Cleveland.....	392,009
Bed, folding, J. H. Hiscock.....	391,848
Bell ringing apparatus, W. Schouren.....	392,072
Bells and annunciators, detachable circuit closing device for electric, J. D. Randall.....	391,917
Bench. Wash bench.	
Blast apparatus, sand, H. A. & H. A. House, Jr.....	391,971
Blast pipe, H. Appleby.....	391,981
Boat. See Ferry boat.	
Boats, outrigger for row, H. E. Campbell.....	391,944
Boats, rolling seat for row, J. R. Breese.....	391,959
Boit, bar, etc., O. R. Butler.....	391,879
Book and index, combined, H. G. Razall.....	392,066
Book covers, manufacturing, F. H. Lieker.....	391,977
Book holder, A. J. Gibbs.....	392,115
Books, binding for blank, Miles & Haas.....	391,810
Boot and shoe tree, S. Mawhinney.....	391,978
Boring and tapping tool, G. W. Buck.....	391,777
Boring mill, A. C. Stebbins.....	392,170
Bottle cleaner, W. D. Butz.....	392,102
Bottle stopper, J. H. Corey.....	391,948
Box. See Letter box. Paper box.	
Brace for holding bits or other tools, J. T. Pedersen.....	392,062
Bracelet, S. Cottle.....	391,883
Bracket. See Curtain roller bracket.	
Braiding machine, F. L. Veerkamp et al.....	391,929
Brake. See Car brake. Pressure brake. Sled brake.	
Brewing, apparatus for preparing yeast for use in, N. Bradley.....	391,775
Bridge, L. Barnes.....	392,094
Broom, whisk, M. C. Howard.....	391,796
Brush attachment for machines for uniting knit fabrics, N. H. Bruce.....	392,005
Brush, marking, S. S. Harman.....	391,964
Buffing apparatus, G. Westinghouse, Jr.....	391,997
Burglar alarm and sash lock, combined, A. B. Caudle.....	391,881
Burner. See Gas burner. Oil and gas burner. Petroleum burner.	
Camera. See Photographic camera.	
Can filling machine, J. B. Hodapp.....	391,795
Canal lock, A. L. Blackman.....	392,002
Cane and stool, combined, W. Leisner.....	391,901
Canister, F. Reil.....	392,068
Car brake, G. P. Campbell.....	391,837
Car brake and starter, T. Rhoads.....	391,818
Car coupling, Carolan & Lee.....	392,104
Car coupling, T. J. Eddleman.....	391,962
Car coupling, M. J. Lorrain.....	392,044
Car coupling, F. B. Von Alten.....	391,993
Car coupling, J. P. Weber.....	391,823
Car for electric railways, motor, I. W. Heysinger.....	391,793
Car heater, C. S. Dean.....	392,147
Car, tram, O. Blessing.....	391,774
Cars, running board for, Deyell & Watkins.....	392,015
Carbon filaments, flashing apparatus for, J. W. Packard.....	391,816
Carding machines, drawing attachment for, J. Cheyne.....	391,781
Cards, binding, J. F. Tapley.....	391,988
Carpet stretcher, J. A. Boice.....	392,047
Cart, road, L. Burg.....	391,836
Cart, road, B. F. Rix.....	391,863
Case. See Show case.	
Case for exhibiting decorative art, H. W. & T. L. Kraatz.....	392,038
Casting printers' rollers, apparatus for, D. J. Reilly.....	392,166
Ceiling, metallic, L. L. Sazendorph.....	391,821
Cellars or basements, waterproof device for, L. Ritter.....	391,662
Chain link, F. Egge.....	392,149
Chair. See Folding chair.	
Chair, E. E. Koken.....	392,174
Chair, A. W. Stewart.....	391,822
Check hook, P. McFaddin.....	391,910
Chinch trap, R. H. Wilson.....	391,930
Churn, O. E. Davidson.....	392,012
Churn, S. Friend.....	391,787
Churn, Pratt & Parker.....	392,165
Churn, L. Snyder.....	391,924
Churn attachment, Loth & Ziebler.....	392,045
Cigar bunching machine, Browning & Logan.....	392,100
Cigar bunching machine, E. A. Kitzmiller.....	391,976
Cigar bunching machine, J. E. Smith.....	392,076
Circuit closing mechanism, C. E. Ongley.....	391,855
Clasp, F. Armstrong.....	391,772
Cleaner. See Bottle cleaner.	
Clock, alarm, A. M. Lane.....	391,802
Clock, electric self-winding, V. Himmer.....	391,969
Clock, rewinding, C. E. Emery.....	391,886
Clock, springs, clamp barrel for, C. E. Emery.....	391,885
Closet. See Dry closet. Water closet.	
Cloth, machine for rolling and unrolling, S. Moritz.....	392,055
Cloth stretching roll, G. W. Miller.....	392,051
Coal washer, S. Stutz.....	391,926
Coffins or caskets, machine for forming corners of, T. D. Hammond.....	392,118
Collar, horse, C. F. Allen.....	391,872
Colter clamp, S. Landauer.....	392,156
Compound or expansive engine, A. G. Brown.....	391,941
Conduits, machine for making, G. Richardson.....	392,069
Cork extractor, R. B. Gilchrist.....	392,116
Coupling. See Car coupling. Pipe coupling. Whiffletree coupling.	
Cultivator tooth, T. H. Noxon.....	392,090
Cup. See Oil cup.	
Cup holder, T. L. Chapman.....	392,105
Curling iron heater, F. A. Frick.....	392,155
Curtain roller bracket, sash lock, etc., S. H. Scott.....	391,922
Cut-off, automatic, Brown & Edgington.....	391,877
Cutter. See Paper cutter.	
Damper, isothermal, J. H. Haldeman.....	391,844
Dental tool, J. P. Carmichael.....	392,066
Dial, medicine, M. B. Wesson.....	391,996
Dish washing machine, Cochran & Kirtch.....	391,782
Draught and dust excluder, T. J. Porter.....	392,065
Draught regulator, M. A. Despeisis.....	392,014