

ENGINEERING INVENTIONS.

A car coupling has been patented by Mr. Fred Tiedt, Sr., of Euclid, Minn. It is a double coupler designed to automatically couple with an opposing coupler of like pattern, and with provision for coupling with the ordinary link drawhead without changing the links or interfering with the arrangement of the improvement.

A lubricator has been patented by Mr. Patrick Brownley, of St. John, New Brunswick, Canada. It is adapted for use in connection with the steam chests of locomotive, hoisting, and other engines, and is made not to depend upon suction or the formation of a vacuum for the proper operation of the lubricator valves.

A car coupling attachment has been patented by Mr. Stephen D. Smith, of Spotswood, N. J. It consists of a folding frame carrying a lever, a nose being pivotally mounted within the frame, and arranged to support the free end of the outer coupling link and be held in position by the lever, making a "three link coupling," which may be coupled without trainmen going between the cars.

AGRICULTURAL INVENTION.

A planter and drill has been patented by Mr. Russell Brock, of Gladstone, Ohio. This invention relates to a corn planter designed to open a furrow, clear the soil of weeds in advance of the shovel, provide means for dropping the seed at regular intervals, and cover the seed when dropped.

MISCELLANEOUS INVENTIONS.

A faucet has been patented by Mr. George W. Aldrich, of Brooklyn, N. Y. It has a loose removable and revoluble valve support or seat, of spider like or open work construction, within the adjustable nozzle section of the faucet, and a soft or flexible and elastic ball valve, preferably of rubber.

A key hole guard has been patented by Mr. Alfred J. Uriin, of Missoula, Montana Ter. This invention provides a slide block preventing persons seeing through the keyhole, or the admission of cold air, etc., and also preventing the key from being turned from the outside, or from falling out of the lock.

An explosive compound has been patented by Mr. Lucien G. Heussen, of Paris, France. It is made with coal oil or naphthaline and glycerine, mixed with nitrate of potash or soda, sulphuric acid and sulphate of iron, together with carbonaceous matter, as carbonized tan or sawdust, and also sulphur.

A reel has been patented by Mr. Frederick Eitapenc, of Oneonta, N. Y. It is intended more particularly for holding lead pipe in coiled condition, and safe from injury during transportation or shipment, the invention covering certain novel features of construction and combinations of parts.

A jail window has been patented by Donald McDonald, of Louisville, Ky. Combined with gratings set in grooved stones is a hinged or swinging sash, with connecting rod and operating cord, to prevent tools and other things being handed in to prisoners, while providing for the admission of light and air.

A tablet binder has been patented by Mr. William B. Pearson, of Jacksonville, Ill. Combined with covers and a flexible back is a metallic strip connected to the back and formed with a lug or ear, a folding clip and side clips, it being feasible to use a single binder for a number of tablets in succession.

An oven door has been patented by Mr. John R. Conrad, of Long Pine, Neb. It has a T-shaped opening covered with graduated transparent material, a securing plate and a socket in which is a thermometer, for accurately indicating the heat of the oven, and for inspecting its contents without opening the door.

A pegging jack has been patented by Mr. Nathaniel Kinney, of Amity, Democracy P. O., Ohio. It is made in sections so connected that the upper section carrying the shoe clamp may be raised and lowered to adapt it to different heights, the invention covering various novel features of construction and arrangement of parts.

A longitudinally expanding roller has been patented by Mr. Arnold W. Schlichte, of New York City. It has sheathing plates arranged to be moved backward and forward upon the face of the roller, the plates being gradually drawn outward as the roller moves forward, and rapidly forced inward as they arrive at a certain predetermined point.

An elevator gate has been patented by Mr. Eugene F. Hardin, of Lincoln, Neb. It is fitted to slide in vertical guides fixed to the side posts at the shaft opening, these posts being hollow to receive weights, making a simple and effective safety gate which will be opened automatically by the rising carriage, and closed automatically as the carriage farther ascends or descends.

A gate has been patented by Mr. Gus H. Ingersoll, of Franktown, Col. It is adapted to be opened and closed by the wheels of passing vehicles, or may be opened from the vehicle while horses are traveling either way toward the gate, and may be automatically closed behind the vehicle, the invention covering various novel features for the making of a simple and inexpensive gate.

An egg beater and mixer combined has been patented by Mr. Louis Rosenkranz, of Rhinebeck, N. Y. It is so made that as a crank shaft is revolved beaters are carried around a central shaft to cut and agitate the material in the body of the receptacle, elevating it also from the bottom toward the top, the action of the apparatus being such that it not only beats the material, but thoroughly mixes it at the same time.

A numbering head for printing presses has been patented by Mr. John G. Sauer, of New York City. It is made with a main casing and inner frame carrying the numbering disks, arranged to receive an

out and in movement in the main casing from contact with the platen of the press, thus turning the numbering disks for consecutively numbering the sheets as they are printed.

A shutter fastener has been patented by Mr. James B. Kelly, of Canton, Miss. It is an effective fastening both for the blinds and the window, which cannot be tampered with from the outside, and when the blinds are thrown open the device swings with the blinds out of the way, while by it the blinds may be held closed in a convenient manner, both when the window is raised and when closed.

A mouthpiece for speaking tubes has been patented by Mr. Patrick McGunnigle, of New York City. It is composed of two main parts connected together back of the bell by a lap joint, in such way that the shaft and whistle have their axis at the diameter of the mouthpiece, and thus avoid hinges and other details of construction of the ordinary form of mouthpiece.

A machine for sharpening and gumming saws has been patented by Mr. George P. Saltenber, of Hamburg, Ark. It is for use with gin saws, and has reciprocating files which operate simultaneously and are drawn back out of contact with the saw teeth at the moment when the saws are being turned, the device being readily changed from a saw sharpener to a saw gummer, and being very rapid and efficient in operation.

A wagon brake lever has been patented by Mr. George J. Riblet, Sr., of Shinnston, West Va. A lever is fulcrumed on the brake hand lever, engaging with one end a fixed segment, a spring lever fulcrumed on the brake hand lever, provided with a segmental gear wheel arm, meshing into a segmental gear wheel arm formed on the other lever, making a lock for the lever of a wagon brake in which the lever is firmly held in place when the brakes are applied.

SCIENTIFIC AMERICAN BUILDING EDITION.

DECEMBER NUMBER.

TABLE OF CONTENTS.

1. Elegant Plate in Colors of a Suburban Dwelling costing about Nine Thousand Two Hundred and Fifty Dollars, with floor plans, specifications, sheet of details, etc.
2. Plate in Colors of a Dwelling erected near Wareham, Mass., at a cost of Twenty-eight Hundred Dollars, with full specifications, floor plans, sheet of details, etc.
3. The Shakespeare Memorial at Stratford-upon-Avon.
4. Perspective view and floor plans of a Residence to cost Eight Thousand Dollars.
5. Engravings of Five Tasteful Residences recently erected at Glenridge, N. J., varying in cost from Four Thousand to Six Thousand Five Hundred Dollars.
6. Perspective view, detail drawings, specifications, roof, and floor plans of a Two Thousand Five Hundred Dollar California House.
7. Engravings showing interior and front view of Chateau de Castelnau. M. Aubry, Architect.
8. Lea Hurst, Derbyshire, the home of Miss Florence Nightingale.
9. Elevations and floor plans of Homes of Factory Operatives at Willimantic, Conn.
10. Bathing House and Saloon at Vittel. Built by Charles Garnier, Architect, of Paris.
11. Floor plans and perspective sketch for a Cottage costing about Five Thousand Five Hundred Dollars.
12. Perspective view and floor plans of a Cottage costing Four Thousand Two Hundred Dollars.
13. Front and rear perspectives, with plans, for a Handsome Stable being erected in Brooklyn, N. Y. Cost, Five Thousand Five Hundred Dollars.
14. Perspective view and floor plans of a Residence for Five Thousand Dollars.
15. Perspective view and plans of a Neat Dwelling costing Four Thousand Two Hundred Dollars.
16. Half page engraving of the John Crouse Memorial College for Women, Syracuse University, Syracuse, New York.
17. Plans for a French Cottage, Hotel de Peintre, Meudon.
18. Miscellaneous Contents: Optical Refinements in Architecture.—Testing the reflecting Compendium.—Our Forestry Problem.—Bamboo Trees.—Fire-proof Structures, illustrated.—Construction of Chimney Flues.—Roadside Plantations of Trees in Belgium.—An Egyptian Temple.—The White Ash.—Ornamental Keystones, three illustrations.—Sawdust, how Utilized.—Fire Bricks.—Improvements in Making Portland Cement.—Typhoid Fever Carried by Well Water.—An Unsafe Church.—Cedar Pavements.—Hemlock for Paying Purposes.—Collapse of Walls of Burning Buildings.—Relative Value of Wire and Cut Nails.—How to Build an Ice House.—Look to your Drain Pipes and Wells.—Arch Construction.—New Form of Chimes for Churches, illustrated.—Painting.—Removal of Chimneys.—The Back Yard.—Pine Woods.—Sketch of Thomas Ustick Walter.—Roribrite, a New Explosive, with illustrations.—Iron Beams in Place of Wood.—Gangways v. Staircases.—How we have Grown.—A Great Building.—Proportions of Rooms.—How a Marble Statue is Made.—The Wainwright Horizontal Feed Water Heater, illustrated.—An Improved Double Surface Planer, illustrated.—How to Make a Cheerful Fireplace, illustrated.—The Sounding Board in St. Paul's Cathedral.—Gleason's Double Surface Planer, illustrated.—The Popular "Fortune" Hot Air Furnace, illustrated.—An Improved Hand and Foot Power Band Saw, illustrated.—Plants for Room Decoration.

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 a host of 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.

Special.

A NEW MINISTERIAL EXPERIENCE.

One year ago last December the pastor of a church in Philadelphia was forced to surrender his pulpit, and, acting on his physician's advice, with his young wife sought the warmer climate of Florida. Both were consumptive, and when it became evident that the young minister must relinquish a future that promised so much, he was broken (in spirit). Together these two afflicted persons traveled toward the milder latitudes. It seemed a journey to death. Nothing more pathetic has been seen since Charles and Mary Lamb set out hand in hand, and with tearful eyes, toward the madhouse to which they had self-condemned themselves. The parting from their friends and parishioners at the railroad station was affecting in the highest degree. Several long, weary months followed, in which the hoped-for improvement was awaited. It came not. Both man and wife gradually grew weaker. The little cottage they had taken at Jacksonville finally began to lack necessary comforts. A small negro servant had to be discharged because she could no longer be paid. Then the despairing young wife took to her bed, and rapidly grew worse. One good lady assumed that death was inevitable, and hoped only to make the end as painless as possible. In her mission of kindness she encountered a hale old gentleman who, after he had given her a ten dollar note, added: "I will do more. I will send that unfortunate woman my Compound Oxygen. I always take it with me to cure sudden colds or throat affections; but I know what it can do even in desperate cases." In a few minutes he was ready, and accompanied the noble hearted lady to the house of suffering. Hot water was readily procurable, and in a brief time the consumptive was inhaling the Compound Oxygen, evolved from one of Drs. Starkey & Palen's Home Treatments. At the end of a week notable improvement in the woman's condition set in. The end of another week's treatment found her seated in a chair on the porch, and she was soon after able to walk about. Meanwhile full advice had been received from Dr. Starkey as to the Compound Oxygen, two Home Treatments had arrived, and the minister began to give some attention to his own case. Friends gathered around them amid the Land of Oranges, and now they are both in a degree of health that enables the pastor to resume his pulpit and his good wife the care of her own home.

A valuable and interesting pamphlet on the methods of manufacture and of treatment by Compound Oxygen is sent free to all who desire it, by Drs. Starkey & Palen, 1529 Arch Street, Philadelphia.

Special Notice.

The following is a copy of a testimonial received by the Star Machine Co., of Buffalo, N. Y.:

Navy Yard, New York, July 5, 1887.
SIR:—In obedience to your order of the 9th of June (a copy hereunto attached), to make a careful and thorough test of the Star Machine Co.'s Improved Portable Forge, the Board met on June 28 and proceeded to carry out said order.

Forge No. 8, as per circular appended, was the one chosen for trial, it being best suited for purposes under the cognizance of the Bureau of Steam Engineering, for use on board of vessels.

After a fire had been well under way, two pieces of iron, two inches in diameter, were brought to a welding heat in five (5) minutes and a clean, smooth weld made. The blast is excellent and continuous; the frame of the forge well braced, and set screws are so arranged as to take up the lost motion of the shaft and other parts. In conclusion, we beg to state that it is the best Portable Forge that has come under our notice, and we therefore recommend it for use in the Naval Service. Very respectfully,

[Signed] JOHN L. D. BOTHWICK,
Chief Engineer, U. S. N.
J. J. BARRY,
Passed Ass't Engineer, U. S. N.
F. C. BOWERS,
Ass't Engineer, U. S. N.

To Commodore Bancroft Gherardi, U. S. Navy, Commanding U. S. Navy Yard, New York.

A copy of the original report can be seen at our office, Nos. 198 and 200 Terrace, Buffalo, N. Y.

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.

Manufacturers' Advertising

in the Manufacturing, Scientific, and Commercial Papers of America and Foreign Countries at combination rates. General newspaper work in all its branches.

Manufacturers' Advertising Bureau and Press Agency, 111 Liberty Street, New York.

Benj. R. Western, Treasurer. Best of references. The Sturtevant Mill (a rock crusher and pulverizer combined) is specially adapted to grinding phosphate rock, cement, ores, and all kinds of refractory material, and is meeting with ready sale in this country and in Europe. Full information, with circulars, etc., can be had by addressing Sturtevant Mill Co., 89 Mason Building, Boston, Mass.

Engine lathes, chucks, planers, drills, shapers, presses, shears, etc. Machine and blacksmith shop equipment a specialty. Send for special prices and cuts, stating exactly what is required. W. E. Drew, agt., S. C. Forsaith Mch. Co., Manchester, N. H.

Air compressor, rock drills. Jas. Clayton, 43 Dey St., New York.

LINK BELTING (malleable iron, detachable).—Used for transmission of power and in improved appliances for handling any material in bulk or package. Send for catalogue. Link Belt Machinery Co., Chicago.

2 1/2 H. P. engine, \$75.00. 2 H. P. engine and boiler complete, \$135.00. 2 to 50 H. P. engines and boilers a specialty. American Machinery Co., Cleveland, O.

Very thick walrus, hippopotamus, giraffe, elephant, and buffalo leather for polishing metals. Greene, Tweed & Co., 83 Chambers St., New York.

The Milwaukee Cement Co., Milwaukee, Wisconsin, have recently erected a 20' Sturtevant Mill for grinding their cement, which is doing wonderful work. Full information, with circulars, etc., can be had by addressing Sturtevant Mill Co., 89 Mason Building, Boston, Mass.

Woodworking machinery, planers and matchers, moulders, scroll and band saws, tenoners, mortisers, saw, clapboard and shingle mills, saws, belting, shafting, and mill supplies. Send for catalogues and obtain our prices. W. E. Drew, agt., S. C. Forsaith Mch. Co., Manchester, N. H.

Among the fertilizer works using the Sturtevant Mill for pulverizing phosphate rock may be mentioned the Pacific Guano Co., Woods Holl, Mass.; Walton & Whann Co., Wilmington, Del.; Etiwan Phosphate Co., Charleston, S. C.; Bowker Fertilizer Co., Elizabethport, N. J., all of whom are greatly pleased with the work done, and consider it the best and most economical process that can be adopted.

Large and small punch presses and machine tools. S. M. York, Cleveland, O.

Saws—How to straighten and gum all kinds. See p. 381.

Wanted by a Brick Manufacturing Co.—A good draughtsman. Also a first class mechanic as foreman. Address box 87, Lancaster, Pa.

Silver Plating without a battery.—Silver held in solution. No acids, no quicksilver. Quick, sure, cheap. Send for circular. R. T. Ladd, 46 Beekman St., New York.

For combination lathe chucks, with bodies and jaws ground true; two spindle machines, for drilling and reaming centers of shafts 3' and less diameter; taps, dies, thread tools, small bench drills, for amateurs and machinists; and for reliable automatic grain weighers, address the Pratt & Whitney Co., Hartford, Conn., U. S. A.

Latest Success! Marion Waltz. Send for copy. Price, fifty cents, postpaid. H. M. Western, 111 Liberty St., N. Y.

The American Engineer, Gaff Building, Chicago, Ill.

Send for sample copy and premium list for 1888.

Manufacturing establishments desiring a Chicago purchasing agent for machinery and supplies should write to Fred A. Rich, 23 South Canal St., Chicago.

Engines and boilers, port. and sta., hor. and vert. Any power required. Send for bid, stating exactly your wants, that you may consult our prices before spending a dollar in this line. W. E. Drew, agt., S. C. Forsaith Mch. Co., Manchester, N. H.

The Kansas Coal and Mining Co., Kansas City, Mo., have recently erected a 12' Sturtevant Mill for grinding cement rock, and express themselves as highly pleased with it, considering it the best machine made for this work.

A tried business man, one familiar with the sale of machinery, is wanted to take entire charge of a large and growing business in a thriving city on the Pacific coast. An applicant possessed of capital would be offered an interest in the house. The position will be given to a suitable person without capital if such a one applies. Address, with references and full statement of qualifications and experience, "Machinery," P. O. box 773, New York.

Boilermakers' tools. Hand and foot power machinery. Fred A. Rich, 23 South Canal St., Chicago.

Working drawings of mach'y and factory plants, buildings included. Indicator tests of steam and gas engines. J. H. Muller, eng., 319 B'dway, room 10, N. Y.

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.

Burnham's New Improved Turbine. Sold at cost of manufacturing and advertising. Address York, Pa.

The St. Louis Smelting and Refining Co., St. Louis, Mo., are using a 12' Sturtevant Mill for grinding their ores, mattes, etc., and report that they get a product of ten tons per hour from the mill to pass a 10-mesh screen.

Lacquers.—Zapon, Brilliantine, Brassoline, Opaline, and other lacquers and special varnishes. Brilliant, hard, durable. Send for catalogue. The Fredk Crane Chemical Co., Short Hills, N. J. N. Y. agent, Horace Van Sands, 733 Broadway.

Wanted—A foreman for a foundry job shop. About 40 moulders employed. Address, stating age, reference, and salary expected, Foundry, box No. 3143, Boston, Mass.

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

For the latest improved diamond prospecting drills, address the M. C. Bullock Mfg. Co., 138 Jackson St., 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. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

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

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.

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

Curtis Pressure Regulator and Steam Trap. See p. 364.

Billings' Patent Breech-loading Single Barrel Shotgun. Billings & Spencer Co., Hartford, Conn.

We are sole manufacturers of the Fibrous Asbestos Removable Pipe and Boiler Coverings. We make pure asbestos goods of all kinds. The Chalmers-Spence Co., 419 and 421 East 8th Street, New York.

Universal & Independent 2 Jaw Chucks for brass work, both box & round body. Cushman Chuck Co., Hartford, Ct.

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

Friction Clutch Pulleys. D. Frisbie & Co., N.Y. city. Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N.Y. See illus. adv., p. 28.