

ENGINEERING INVENTIONS.

A car heater has been patented by Mr. Palmer J. Gurnee, of Roundout, N. Y. It is designed to act as a heat generator, the car being heated through a drum or coil of pipe, while the construction of the generator is such that it is capable of sustaining great shocks, and yet has ample means to retain the fuel in the heater in the event of accident.

A car brake has been patented by Mr. Lawrence J. Zimmermann, of Brooklyn, N. Y. The brake consists of shoes, more or less rectangular in shape, adapted to be positioned opposite the outer peripheral surface of each wheel, to act directly upon the track, making an auxiliary brake, quickly applied and positive in its action.

A relief valve for engine cylinders has been patented by Mr. Walter Vielhaber, of Altoona, Pa. Its construction is such that when water accumulates in the engine cylinder the pressure exerted on the valve causes it to open automatically, while it can also be opened from the cab of the engine by the usual hand lever or rod.

A balanced valve has been patented by Messrs. William A. Short and Eusebe Lalime, of Malone, N. Y. The invention consists of a cage placed in the steam chest, and having a vertical motion, a cylindrical slide valve operating in the cage, the valve being simple in construction and being completely balanced when the engine is reversed.

A foot guard for railway switches, etc., has been patented by Mr. Edward P. Edwards, of Webster City, Iowa. It is made of sheet iron or other material, of different shapes, to fit openings of different widths between the rails, and adapted to be readily fastened in place, so as not to interfere with the working of the car wheels, while protecting the feet of those stepping on the rails.

A safety base for flues has been patented by Mr. Frank Anderson, of Union Springs, Ala. It is designed to prevent the wood surrounding the lower part of the flues in houses from becoming overheated, and consists in a perforated metal casing surrounding the lower part of the flue, and having a central metallic pipe extending upward and built into the brickwork.

A car coupling has been patented by Mr. Philip Riley, of Marion, Iowa. It is designed to allow cars to couple automatically as they come together, or to be coupled by the operation of a hand lever at the side of the car, the coupling being fitted with a brake attachment preventing the withdrawal of the entered coupling link, thereby assuring the dropping of the pin through the link.

A hydraulic lift has been patented by Mr. Thomas Pownall Ford, Jr., of London, England. The invention consists in the employment of means of controlling the inlet and outlet of water to and from the two ends of a cylinder simultaneously and to the same extent, avoiding hissing noise, and, with such valves operating simultaneously, employing a column of water to partially counteract the pressure of water entering through the inlet valve, with other novel features.

AGRICULTURAL INVENTIONS.

A cotton chopper and cultivator has been patented by Mr. Horace N. Sibley, of Midway, La. Its construction is such that the machine may be used as a chopper to remove surplus plants and accurately define the row, and may be subsequently adjusted to operate as a cultivator for the plants as they increase in size.

A spring hoe attachment for cultivators, seed drills, etc., has been patented by Mr. Charles R. Hartman, of Vincennes, Ind. It consists of a locking device to hold the shovel of the implement to which it is attached with the requisite rigidity under ordinary strain while at work, but so as to yield to too great strain, to prevent breakage of the shovel or hoe.

MISCELLANEOUS INVENTIONS.

A belt shifter has been patented by Mr. George H. Lowe, of Middletown, N. Y. It consists of a suitable frame provided with rollers to receive the belt from the pulley, and one or more rollers being adapted, under a novel form of construction, to be tilted for shifting the belt back upon the pulley.

A leather skiving machine has been patented by Messrs. Fritz Engel, of Worms on the Rhine, and Carl Wagner, of Offenbach on the Main, Germany. It is for thinning the edges of leather, and is especially adapted for the use of saddlers, trunk makers, bookbinders, etc., the invention covering various novel details and combinations of parts.

A billiard cue chalker has been patented by Messrs. Samuel Clare and Edward W. Smith, of Winnipeg, Manitoba, Canada. It consists of a spirally slotted tube containing a cylindrical chalk case, with spiral spring, and other novel features, whereby the chalk dust is retained, and the tips are kept round and uniform in shape.

An egg beater has been patented by Mr. La Fayette Wikidal, of Salem, Oregon. This invention covers a novel construction and combination of parts of an egg beater that is designed not only for whipping up eggs, but which may be used for beating up batter and other substances, or for mixing ingredients of any kind used in making cake or bread.

A center board for vessels has been patented by Mr. Thomas R. Brough, of Gananoque, Ontario, Canada. The center board case contains a series of blades arranged to swing on a common pivot, with cam slots in the blades, and other features, whereby the free ends of the blades may be projected from the center board casing as desired.

A lamp filling can has been patented by Mr. John A. Kendall, of Maysville, Mo. This invention relates to that class of oil cans having an air forcing apparatus by which the oil is discharged through a suitably arranged outflow pipe into the lamp by producing an air pressure, the can being simple in construction and very effective.

A bob sled has been patented by Mr. Joseph P. Kramer, of West Branch, Mich. Its construction is such that there is a slight rocking movement between the runners and the bench, to allow the runners to change position slightly in rising over obstructions in the road without imparting a jolt or jerk to the superstructure.

A standard for logging cars has been patented by Mr. Edmund J. Minnock, of Baker, Texas. It is a pivoted standard connected by links to a lever a short distance from its pivot, which can be readily turned down out of the way when loading, and which when turned up into position will be firmly and securely held.

A copy holder has been patented by Mr. Irvine J. Adair, of Dallas, Texas. It is a novel device intended to hold the paper to be copied almost the same as one would hold a book in reading, all the lines being held the same distance from the eye, and a spring serving to hold the leaf in place when used to copy into a record book.

A thimble skein has been patented by Mr. John E. Young, of America City, Kansas. It is for wooden axles, and has one or more holes through its sides to permit the passage of oil or lubricating material to the wood within to preserve it, and having also near its inner end an internal peripheral groove to receive a packing ring.

A logging sled has been patented by Mr. John Wisdom, of Moose Lake, Minn. It consists of a peculiarly formed runner or shoe, in combination with a cross bar or bolster for supporting the log, and an arrangement of chains for lashing the log to the bolster and for receiving the evener to which the horses are hitched.

A joint for extension handles has been patented by Mr. Charles A. Bartliff, of Memphis, Tenn. It comprises a socket with longitudinal extension and transverse adjustable bands or wires connected at their ends to opposite side edges of the extension, the improvement being more especially intended for use with brooms, brushes, and mops.

Ornamental strips for picture frames form the subject of a patent issued to Mr. Edward Brodhag, of New York City. The strip consists of a solid flexible core or band, as of strip brass, on which is cemented a soft inclosing covering of plush or other soft and fluffy material, this compound strip to be bent as desired, and retaining its shape, for ornamenting purposes.

A grate for stoves and furnaces has been patented by Mr. Pillsbury C. Dolliver, of Augusta, Me. The grate has two oppositely pivoted grate sections, the longitudinal and cross bars of one section being in the same plane and the longitudinal bars of the other section being above its cross bars, one of the sections having support from the other section, in combination with novel operating devices.

A spectacle joint has been patented by Mr. Frederick Scheidig, of New York City. The invention consists in making the temple from a blank formed with oppositely projecting ears adapted to be bent parallel with each other and embrace the eye on the end piece, and with a lug arranged to strike the stop shoulder on the end piece, making a simple, strong, and easily attachable joint.

A galvanic battery has been patented by Mr. Horatio J. Brewer, of New York City. It consists of a porous cup having a flange resting on a shoulder formed in the jar, means for holding the cup and zinc bar in place at the bottom of the jar, and a zinc bar passing through the side of the jar, the invention being designed to prevent evaporation of the liquid and save a considerable amount of zinc.

A combined egg tester and register has been patented by Messrs. Charles J. Mikesh and Homer W. Conant, of Sheldon, Iowa. The object of this invention is to provide a cheap, durable, and convenient device, with the parts so arranged that as the eggs are tested their number will be automatically indicated by a simple mechanism, not liable to become disarranged.

A releasing device for use in connection with horse stables has been patented by Mr. Mortimer M. Shelley, of Brooklyn, N. Y. The invention provides a novel construction and arrangement whereby, in case of fire, all the horses in a given row of stalls may be released at the same time, and will be driven from their stalls by water automatically dashed in their faces from apertures in fixed pipes.

A vehicle top has been patented by Mr. Thomas B. McCurdy, of Lancaster, Texas. Its construction is such that the side curtains may be forced upward to positions beneath the top proper, there being strips to serve as guides upon which the curtain frames slide, and other novel features, the invention being an improvement on a former patented invention of the same inventor.

A door jamb has been patented by Mr. Christian Henricson, of Ashland, Wis. It consists in a facing supported and guided by horizontal rods and pressed forward into contact with the edge of the door by springs, making a door jamb which compensates for the swelling or shrinking of the door and designed to always rest in contact with the edge of the door when the latter is closed.

A saw filing machine has been patented by Mr. John H. Sodee, of Seattle, Washington Ter. The invention consists of an improved form of

file and file holder, and improved form of mechanism for cleaning off the burr made in sharpening the saw, with other novel features, the machine being designed for sharpening or filing either circular or gang saws, and requiring but slight adjustment for use for saw gumming.

An apparatus for aerial photography has been patented by Mr. James Fairman, of New York City. Combined with a camera-carrying balloon are guy ropes for steadying it, the suspended camera having a funnel-shaped shield with its apex attached to the suspension link of the camera, and extending down to partly inclose the sides and top of the camera, the device being designed for locating the camera and taking views from a great altitude.

A feed regulator for roller mills and purifiers has been patented by Messrs. John W. Edwards and Chauncey L. Becker, of Waterloo, N. Y. Combined with the hopper are valve straps pivotally connected with the valve, a hinged spring arm and plate being also applied to the hopper, with other novel features, whereby the pressure of the material in the hopper will act upon the valve to automatically regulate the discharge by the feed roll.

An extractor for pulling roots, weeds, etc., has been patented by Mr. Robert L. Shaw, of Franklin, Pa. It consists mainly of two grasping jaws and a stock or handle to which they are connected, the jaws being of novel shape and pivoted together by a strong bolt, and a chain being connected at opposite ends to the handle and the inner end of a fulcrum bar, limiting the extent to which the points of the jaw may be opened.

SCIENTIFIC AMERICAN BUILDING EDITION.

AUGUST NUMBER.

TABLE OF CONTENTS.

1. Elegant Plate in Colors of a Four Thousand Dollar Residence at Flushing, N. Y., with floor plans, specifications, sheet of details, bills of estimate, etc.
2. Plate in Colors of a Twelve Hundred Dollar Double House, with plans, specifications, sheet of details, bills of estimate, etc.
3. Page engraving of an Elegant Residence corner Eighth Avenue and Berkeley Street, Brooklyn, N. Y.
4. The new United States Court House and Post Office, Montpelier, Vermont. Half page engraving.
5. Half page engraving showing Competitive Design for Carnegie Free Library, Allegheny City, Pa., Jas. W. McLaughlin, Architect.
6. The National Agricultural Exposition Building at Kansas City. Quarter page engraving.
7. Drawing in perspective, with floor plans, of a Forty-five Hundred Dollar Dwelling.
8. Engraving of the Cogswell Polytechnic College, San Francisco, with description.
9. Illustrations of an English Double Cottage of moderate cost.
10. Design for a Marble Fireplace. Half page illustration.
11. Perspective view, with floor plans, of a Handsome Cottage of moderate cost.
12. Design for a Church of moderate cost. Half page illustration.
13. Two elevations and a floor plan of an Austrian Country House.
14. Engraving of Tomb of Colonel Herbinger, Mont Parnasse Cemetery, Paris.
15. Selections of Carved Work from the New Hotel De Ville, Paris. Page of illustrations.
16. Two large views of Engine Room at Ferguslie Mills, Paisley: Decoration in Burmantofts Faience.
17. A French Villa at Enghien-les-Bains, France. Two perspective views and four figures showing floor plans.
18. The College of the City of New York: The Technical Courses. Eleven views of different Departments.
19. Perspective view of City Residence of Herr Windesheim, at Halle, Germany.
20. The Home of Milton. Full page of views.
21. Quarter page engraving of a Continental Cottage.
22. Miscellaneous Contents: Useful Items for Builders.—A Woodpecker's Sugar Bush.—Preservation of Woodwork.—Sand in Plaster.—One Safe Theater.—A Portable Scaffolding, illustrated.—How to Increase your Wages.—Good Water Promotes Good Health.—Etruscan Tombs.—Floors and Ceilings, Ancient and Modern. By C. Powell Karr, C.E., Consulting Architect. Three illustrations.—Apparatus for Testing Lime and Cements, two figures.—Whitewash as a Fire Extinguisher.—Why Pipes Burst.—How Lamp Chimneys are Made.—The Largest Vase in the World.—Description of an English Laundry.—Mud Architecture in Persia.—How Window Glass is Made.—Use of Basswood.—Painted Plate Glass Mirrors.—Flour Adulterations.—Cubic Contents of the Chinese Wall.—A Waterproofing Process for Stone.—Paper Car Wheels, how Made.—Blistering of Paint and Varnish.—Artificial Asphalt.—Staining and Finishing Common Woods.—Plumber's Trap, illustrated.—Improved Bevel, illustrated.—Naval Architecture during the Last Half Century.—Best Effects in Paper Bedroom Decoration.—Planting of Trees and Shrubs.—"Hydrofuge" Floors, illustrated.—Laddering a Tall Chimney.—Adamant Wall Plaster.—Temporary Bridges, with illustrations.

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.

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.

The new "Trautwines" contain two new tables of circles to four decimal places, and in larger type than the older table. One of these gives the diameters in units and tenths, and the other in units and twelfths, as in feet and inches.

Hydraulic Press Wanted (second-hand).—In good condition, about 28 x 36. Send particulars, with price, to J. M., P. O. box 3413, New York City.

Stationary and boat engines, boilers. Best and cheapest. 1 to 10 H. P. Washburn Engine Co., Medina, Ohio.

Bennett's Lubricator is giving universal satisfaction. Send for circular. Bennett Mfg. Co., Chicago, Ill.

Timber Gaining Machine. All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

Accurate Counting Machines for all kinds of machinery. 10,000 and 100,000 sizes. Send for circulars. G. R. D. Hubbard, New Haven, Conn.

Press for Sale—Quick acting. Hole in bed 8x5; punches to center of 13 in. sheet; 2 1/4 in. shaft; also four spindle Drill. A few second-hand engines in first-class condition. B. W. Payne & Sons, Elmira, N. Y.

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.

Woodworking Machinery of all kinds. The Bentel & Margedant Co., 116 Fourth St., Hamilton, O.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. \$100 "Little Wonder." A perfect Electro Plating Machine. Sole manufacturers 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.

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.

Curtis Pressure Regulator and Steam Trap. See p. 253. Iron, Steel, and Copper Drop Forgings of every description. 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.

Pat. Geared Scroll Chucks, with 3 pinions, sold at same prices as common chucks by Cushman Chuck Co., Hartford, Conn.

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

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

Safety Elevators, steam and belt power; quick and smooth. D. Frisbie & Co., 112 Liberty St., New York.

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

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

Iron and Steel Wire, Wire Rope, Wire Rope Tramways. Trenton Iron Company, Trenton, N. J.

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

NEW BOOKS AND PUBLICATIONS.

THE CREMATION OF THE DEAD. By Hugo Erichsen. Detroit: D. O. Haynes & Co. Pp. 264. \$2.

The sanitary and economical arguments usually adduced in favor of disposing of the mortal remains of human beings by incineration, with a selection of facts and sayings touching the subject from far back in ancient history to the present time, are here brought together in a unique volume. The book is embellished with illustrations of many crematories, and gives with some detail the particulars as to the organization and work of the principal societies formed in recent years to advocate cremation and afford facilities therefor. The author is an ardent advocate of the general introduction of cremation as a means of disposing of the dead instead of by burial, and the volume is a plea to the public, calling for a more active interest in the subject, which, it is conceded, the people must be educated up to before it can become popular.

THE GRAPHICAL STATICS OF MECHANISM. By Gustav Herrman. Translated by A. P. Smith, M.E. Pp. vii, 158. New York: D. Van Nostrand. 1887. Plates.

Starting with the simpler problems of the equilibrium of machines, the graphic method is applied to the treatment of all the ordinary problems of mechanics. To all except those peculiarly conversant with the higher mathematics, much of the advance of the last few years in mechanics are of little avail. But by the system so intelligibly explained and illustrated in this work, these higher problems are attacked by graphic methods, that for accuracy, simplicity, and practical utility leave nothing to be desired. Professor Herr-