

ENGINEERING INVENTIONS.

A rotary engine has been patented by Mr. George Barr, of La Center, Washington Ter. It consists of a hollow revolvable shaft carrying a hollow cross arm or tube, the ends of which are closed, and which has side ports passing through opposite sides of the arm near either end, with other novel features of construction and combination of parts.

A railway plow has been patented by Mr. Frank Nearing, of Schuylkill Haven, Pa. A truck constructed to run upon a railway track has plows connected by means of pivoted side bars to the frame of the truck, so as to run in contact with the ground at either side of the track, and there are means for raising and lowering the plows and of tilting them upon the truck.

A car coupling has been patented by Mr. Donald E. La Lone, of Miles, Iowa. The draw-head is arranged with three independent recesses or sockets, each adapted to receive a coupling link, and has pivoted heavy plates, with their forward ends beveled to assure easy entrance of the link into any of the sockets, with other novel features, whereby high or low cars may be coupled together automatically with an ordinary link.

A steam generator has been patented by Mr. Albert M. Bowers, of Newark, N. J. Combined with a boiler are two or more sets of steam generator tubes, each set connected to end reservoirs common to all the tubes of the series, a supply reservoir, connections between it and the boiler, and between it and the end reservoirs, and between the generator tubes and the boiler, with other novel features, to promote circulation, clear the water of sediment, and economically generate dry steam.

AGRICULTURAL INVENTION.

A combined straw carrier and stacker has been patented by Mr. William C. Buchanan, of Belleville, Ill. It is so made that it can be easily and quickly adjusted on uneven ground, and the stacker can, when the machine is in motion, be swung in any direction, it being generally attached to the rear part of the thrashing machine, but so it can be transported independently thereof.

MISCELLANEOUS INVENTIONS.

An improvement in overalls for the use of artisans and laborers has been patented by Mr. Jesse F. Diggs, of Baltimore, Md. It consists mainly in using a re-enforcing strip on each side, which extends from the seam at the seat around the outside of the hip and down across the knee to the inseam of the leg.

A combined window ventilator and shade has been patented by Mr. Thomas Dean, of Paterson, N. J. Combined with a U-shaped frame pivoted to the lower end of the window casing are folding strips secured to the sides of the casing and to the sides of the frame, a window shade being secured to a roller mounted on the frame.

A portable cooking apparatus has been patented by Mr. Gustav Warnecke, of Frankfort-on-the-Main, Germany. Combined with a cooking vessel formed with a central tube to serve as a fire chamber is a ball bent at its middle to form a grate for the fire chamber, while it can be used in the ordinary way upon a stove or over an open fire.

A photographic paper roll holder has been patented by Mr. Erastus B. Barker, of New York City. The invention includes a movable frame for carrying the rollers and paper, devices controlled by pressure for making and breaking connection with the indicator which controls the measure of the paper as it is unrolled for use, and various other novel features.

An axle box has been patented by Mr. Frederick J. Wiles, of Grassy Point, N. Y. The journal portion of the axle is made hollow to receive oil, and has small orifices for its escape to the surface of the axle, the axle having a collar over which the axle box fits, the latter being held in the hub of the wheel by a nut that closes the end of the hollow axle.

A bottle holder has been patented by Mr. Austin F. Jackson, of Taunton, Mass. It consists of a bottle-shaped body having pins projecting horizontally in opposite directions, with a detachable cup-like base having perforated lugs or sockets, both the body and base being lined with flannel or some other soft material.

A composition of matter for plastering walls, etc., has been patented by Mr. Geo. H. Wooster, of West New Brighton, N. Y. It consists of gypsum, marble dust, and an adhesive material, as glue, gum arabic, or sugar, prepared and combined in a novel manner, and mixed with water to make cornices and other decorations, with a hard finish.

A mosquito net frame has been patented by Mr. Albert C. Lottman, of Houston, Texas. It has two standards with rounded heads, united by a horizontal bar, carrying side bars with a cross piece, all adjustably united, in such way that the frame may be easily attached to a bed and the frame may be frequently taken apart and joined again without damage.

An automatic dam has been patented by Mr. Horace Harding, of Tuscaloosa, Ala. It is so constructed as to give increased waterway over dams in time of freshets, and is an improvement on a former patented invention of the same inventor for that purpose, each valve for the escape of water to be automatically opened as the water rises.

A sleigh brake has been patented by Mr. Edward C. Selle, of Embarras, Wis. This invention covers a novel apparatus for use in connection with any of the ordinary forms of sleigh by which the driver may regulate the speed of the sleigh in going down hill, and, in ascending, it may be readily applied as a stop for the purpose of giving the horses a rest.

A miner's outfit has been patented by Messrs. Edward Williams, Jr., and David E. Keller, of

Centralia, Pa. The invention covers a novel construction of a practical and convenient supply case for carrying squibs, paper, small tools, etc., affording separate compartments and protecting the contents from dampness.

A sled has been patented by Mr. Jacob H. Nicholson, of Oxford, Md. The rear portion of the seat is adjustable to occupy a plane above the forward portion, or it can be adjusted to form a back, or the two sections of the seat may be adjusted to occupy the same plane, so that the rear portion of the seat may be firmly locked in either of three positions.

A garment supporter has been patented by Messrs. Theodore Gentzsch and Gustave A. Witte, Jr., of Brooklyn, N. Y. It consists of a plate with slotted end, a loop and eye on opposite sides of the slot, a needle-carrying arm being pivoted to the plate, making a cheap and effective device for supporting stockings and shirt sleeves, and for similar uses.

A gate has been patented by Mr. John S. Heaton, of Shelbyville, Ky. This invention relates to that class of gates adapted to be opened and closed by the operation of levers within reach of persons walking, or on horseback, or in vehicles, the gate being simple in construction, and latching automatically in both open and closed position.

A picture frame has been patented by Mr. Michael Hogan, of Pelham, N. Y. The object is to produce a frame in which the picture will be flush with the front surface, the picture being mounted in a depression in the frame, and secured by covering the outer surface and a portion of the outer upper surface of the picture with a flexible material.

A halter trimming has been patented by Messrs. Bion E. and D. Everett Martin, of Sycamore, Ohio. The invention consists of a web-holding device designed more especially for use in web halters, for holding the web and for adjusting it to diminish or increase the size of the halter, any strain upon the web rendering it self-binding in the adjuster or holder.

A defecator for cane juice has been patented by Mr. Leon F. Hauptman, of New Orleans, La. It consists of a vessel having a double steam coil arranged to receive steam from the center and discharge the steam and the water of condensation from the outer ends of the coil, with other novel features for utilizing the waste steam.

A circle scribing attachment for squares has been patented by Mr. William F. Seargeant, of Marshall, Mo. This invention covers an improvement on a former patented invention of the same inventor, making an improved implement for marking weather boards where they abut against the window casings or corner boards, and for other uses.

An apparatus for making and storing gas has been patented by Mr. James J. Powers, of Brooklyn, N. Y. The invention covers a simple apparatus of generator, tanks, and pipes, in connection with a holder, for making chlorine or similar gas by mixing or volatilizing chemicals, and storing the gases to prevent escape by permeation of a liquid seal or evaporation.

An improvement in trousers has been patented by Mr. Aaron J. Shriver, of New York City. Combined with the knee part is a diamond-shaped strip of fabric, secured at two opposite points of its sides only, with a tape attached to the upper edges of the strip and to the trousers near the waistband, the improvement being also applicable to the elbows of dresses and coats, to prevent stretching or bagging out.

A water elevator has been patented by Mr. George W. Mefferd, of Stephenville, Texas. It has a suspended bucket and means for raising and lowering it, a tilting fork receiving the raised filled bucket, with an arm catching under the bucket to tilt it to discharge its contents as the fork is tilted, making a simple and improved device for lifting water from wells or cisterns, etc.

The ornamenting of window shades forms the subject of a patent issued to Mr. Edwin P. Benjamin, of Minnetonka, N. Y. The shade is made of translucent fabric, with designs on both sides, so that at certain times the inner design only will be visible, at other times only the outer design, and at some periods, according to the light within or outside of the room, both designs will show.

A nut lock has been patented by Mr. Benjamin N. Deblieux, of Bay St. Louis, Miss. The nut has a concave spring flange slotted radially, some of the arms being of greater thickness to exert a greater force when under strain, and allowing the expansion or contraction of the bolt or body clamped by the bolt, without danger of breaking or straining the bolt or nut.

A method of subdividing and designing land has been patented by Mr. William A. Baugh, of Melbourne, Fla. It consists of a method of dividing the land into sections, numbered successively, and then dividing each section into four equal squares, each of which is divided into four equal squares, and each of the latter again into four equal squares, all being designated by numerals or letters.

An attachment for hat pouncing machines has been patented by Mr. George Van Wart, of Yonkers, N. Y. It is applicable to all forms of machines employing a revolving roller, combining with the pouncing roller a wood block, bow spring, and metal plate, and other novel features, whereby both surfaces of the material are given a comparatively uniform and similar working at the same time.

A clay press feeder has been patented by Mr. Thomas F. Anderson, of Walker's, Ohio. It consists of a revolvable plate or disk partially surrounded by a cylindrical curb, with an opening leading to a chute to which the clay is delivered by means of a fixed scraper, the chute delivering the clay to a revolvable cylinder arranged to throw the clay into the press, as it may be required to be fed.

A hook attachment for doubletrees has been patented by Mr. William A. Farris, of Hills-

dale, Mich. It is designed to take the place of the usual center clevis, and consists of a swivel hook composed of two hooks on opposite sides of its body, one a close and the other an open hook, combined with a tapering eyebolt on which it swivels, the eye of the bolt freely engaging with a staple that detachably fastens the whole to the doubletree.

A loom for weaving tufted fabrics has been patented by Messrs. John J. Devitt and John Corcoran, of Yonkers, N. Y. The invention consists of improvements in the construction and operation of the shuttle race and carrier, the tension device for the weft thread, the nippers that draw the tuft yarns down through the warp, the knives that cut the tufts, and the comb that lifts the tuft yarns up through the warp, in looms more especially designed for weaving moquette carpets and similar fabrics.

An equalizer for drawers has been patented by Mr. Joseph H. Knaus, of Fayette, Mo. It is to enable furniture drawers to be drawn out evenly, without cramping and binding, for which purpose a shaft is journaled in the drawer, around which is wound at each end a cord, one end of the cord being attached to a stationary part of the drawer casing at the back, and at the other to the front part of the casing, the pulling out of the drawer winding and unwinding the cord upon the shaft.

Metallic alloys form the subject of four patents issued to Mr. Charles Auguste Paillard, of Geneva, Switzerland. The materials composing the alloys are palladium, copper, nickel, gold, platinum, silver, steel, and iron, some of the alloys having only a few of these ingredients, and all of them being in varying proportions, with special methods for their combination. The object sought by this invention is to make metallic alloys especially adapted for different parts of clock, chronometer, and fine watch work, which shall be neither oxidizable nor magnetic, with small capabilities of dilatation, and having hardness and elasticity, and more or less of the properties of steel, according to the particular use to which the alloy is to be put, and the grade of watch, clock, or chronometer to be made therewith.

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 Herbing, 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 Palace.
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 Cour es. 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 amp 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 Auditerations.—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.—Painting 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.

Special.

KEEN AS A SURGEON'S KNIFE.

On the Chicago Limited Express, one of those splendid trains that leave New York over two of the great trunk lines of this country and make the dash to the metropolis of the West with such remarkable speed, an elderly gentleman was, a few days ago, seized with a violent attack of asthma. He had been a sufferer for many years, and his efforts to breathe were dreadful to witness. A physician was found on the train, but relief seemed impossible. Everything was done for the comfort of the passenger, but he speedily grew worse. His face assumed a livid hue, and it appeared that he had only a few minutes to live. Suddenly a lady in the car seized the porter by the arm, sent him flying to the range in the dining car for boiling water, while from a satchel she drew out one of Drs. Starkey & Palen's Compound Oxygen Inhalers. By the time the porter had returned with a salad bowl filled with boiling water, the lady had the corks out of the bottle, the glass tubes fitted, and, in less time than it requires to tell it, the inhaler was immersed in the heating liquid. A moment more and the ozone began to evolve and the inhaling tube was placed in the sufferer's mouth. He was so exhausted that he could only breathe the gas in a spasmodic manner, but at the end of a minute his inhalations became more lengthy and regular, and at the end of five minutes the wheezing ceased, and he was able to rest easily. Of course the sufferer was greatly weakened, but he had no recurrence of the attack. The entire train rang with praises of Compound Oxygen during the balance of the journey.

Apropos of this case, J. B. Kenyon, a merchant of Bedford, Ohio, writes to Drs. Starkey & Palen, September 11, 1886:

"Your Compound Oxygen has worked wonders with me; has made a new man of me. I have not had an attack of asthma since using it, though I was in very bad shape when I began. I would not do without the 'Compound Oxygen' for ten times its price. On retiring at night I go to sleep at once, and never rested better in my life than I do now. Shall recommend it to all my friends."

A complete and interesting treatise on the cures effected by Compound Oxygen will be sent, postage prepaid, to any one curious to know its valuable properties. Address Drs. Starkey & Palen, 1529 Arch Street, Philadelphia, Pa.

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.

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.

Wanted—Foreman for machine shop. Address, with references and experience, to St. Louis Malleable Iron Co., St. Louis, Mo.

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 1/2 in. shaft; in also 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 Bental & 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.

Power, 113 Liberty St., N. Y. \$1 per yr. Samples free.

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

Vener Machines, with latest improvements. Farrel Fdry. Mach. Co., Ansonia, Conn. Send for circular.

Hoisting Engines. D. Frisbie & Co., New York City.

Curtis Pressure Regulator and Steam Trap. See p. 253.

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

Rod, pin, and dowel machines, 1,000 to 3,000 lineal feet per hour. Rollstone Machine Co., Fitchburg, Mass.

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

NEW BOOKS AND PUBLICATIONS.

THE ECONOMIC THEORY OF THE LOCATION OF RAILWAYS. By Arthur Mellen Wellington. New York: John Wiley & Sons and the Engineering News. Pp. xx, 930. \$5.

This is a greatly enlarged edition of a volume put forth by the same author ten years ago, which was received with great favor at the time, and has since been considered among the standard works upon the subject. In this volume there is much new matter. The theory