

## ENGINEERING INVENTIONS.

A railroad switch has been patented by Mr. John J. Peetz, of Galveston, Texas. It is designed for operation by trip bars on a locomotive or car to open or close the switch, and without injury to the rails or actuating mechanism, or danger of derailing the cars, the invention covering various novel details and combinations of parts.

A car coupling has been patented by Mr. James F. Thornton, of Nicholas Court House, West Va. Combined with a drawhead having a link mortise and a vertical slide bar with a crosshead is a coupling pin, so arranged that the pin may be elevated for the insertion of the link by the contact of the crosshead with grapple hooks or bars, and cars may be coupled or uncoupled without the operator going between them.

## AGRICULTURAL INVENTIONS.

A corn planter has been patented by Mr. Anderson Bussey, of Columbia County, Ark. Combined with a frame, plow, and covering shovel is a corn-dropping box rotating on a shaft held on the frame, the box having supplemental boxes communicating with openings in the sides of the dropping box, and being provided with slides to regulate the outflow of the dropping box.

A check row corn planter has been patented by Mr. August F. Tiede, of Deep Creek, Iowa. It is designed to drop hills of seed in accurate check row irrespective of the contour of the ground surface, while the seed-dropping mechanism may be set independently of the mechanism which drives it, to correct irregular dropping and to assure proper starting of the machine at the end of a field.

## MISCELLANEOUS INVENTIONS.

An inkstand has been patented by Mr. Frederick Mitchell, of Brooklyn, N. Y. It is double, one inkstand serving as a cover for another beneath, the parts being detachable, so that they may be used singly.

A rafter gauge has been patented by Mr. John N. Cruson, of Elizabethtown, Ill. It has adjustable and sliding bevels, and is intended especially for aiding in determining the length and bevels of hip and jack rafters commonly used in hip roofs.

A weather strip has been patented by Mr. Franklin P. Burcaw, of Hazleton, Pa. This invention covers a novel construction and arrangement of parts and details, including flanged strips fitting into channels in moulding all around the door, whereby all bottom, side and top draughts are effectually precluded.

A sign has been patented by Mr. Andrew F. Foans, of New York City. The letters are each attached to a bent and counterweighted rod journaled in a board or other support, so that the motion or jar of a car, stage, or other conveyance will set the letters in motion to attract public attention.

A folding coop has been patented by Mr. William E. Tate, of Weatherford, Tex. The side, end, and top sections and partition are formed of wire or metal frames, with wire netting, making a coop which is strong and rigid in use, and which may be folded in a very compact form for transportation or storage.

A churn cover has been patented by Mr. Anderson B. Cosby, of Richmond, Va. The top edge of the churn body has a marginal metal ring, with upwardly projecting hook-shaped lugs cast upon it, its inner edge being slightly raised to form a bead upon which a wooden cover fits and makes a tight joint, the invention covering various other novel features.

A trotting harness has been patented by Mr. John H. Whitaker, of Davenport, Iowa. It has a shackle strap or collar inclosing the hind leg above the hock, with a yielding connection between the collar and the shaft, which will not impede the travel of the animal, but will act as a restraint causing him to travel with his hind legs wide apart.

A sash fastener has been patented by Mr. Jerome B. Keester, of Clarksburg, West Va. It consists of a gravitating latch pivoted to the sash and adapted to a notch or detent at the window frame, provided at its pendent part with a shoulder, a gravitating lock being pivoted to the window sash and adapted to overlie the latch shoulder, with other novel features.

A display box for neckties has been patented by Mr. John W. M. Uhrig, of New York City. It has side walls provided with longitudinally and inwardly extending wings, designed to support bow portions of the neckties for display, and permit a disposition of the tying strips beneath as a shield from view and also from dust.

A gate hinge has been patented by Mr. Oscar M. Hawley, of Church's Corners, Mich. It is an improvement in that class of hinges in which the gate may be slid back in the hinge, and the hinge turned upon its vertical axis, carrying the gate with it, the device being equally adapted to rail, picket, or wire gates.

A hospital transfer bed has been patented by Elizabeth D. Staples, of West New Brighton, and Hugh E. Ashcraft, of Goshen, N. Y. It consists essentially of an endless carrier belt or mattress, mounted on drums or rollers journaled in the bed frame, for easily transferring patients from one cot or bed to another.

A bridle bit has been patented by Mr. Oscar R. Gleason, of New York City. It has a mouth piece square in cross section, and side rings with downwardly projecting arms, these rings having upwardly projecting loops or eyes, the latter serving for use with a curb strap passing under the jaw for vicious or unruly horses.

A hay carrier has been patented by Messrs. Lindley and Ellwood Clark, of Cuba, Ohio. The invention covers a novel construction and arrange-

ment of parts in an inexpensive device for carrying hay into hay mows and over the tops of hay stacks, and depositing it in any desired point within the range of the apparatus.

A trace detacher has been patented by Mr. John D. Blakeman, of Smith's Grove, Ky. The whiffletree has a projecting stud, on which loosely fits a collar with a guard arm and an inwardly projecting arm and loosely pivoted lever, which may be operated by the driver to detach the trace in case of accident or if the animal should run away.

A horse detacher has been patented by Mr. Noah Crim, of Galton, Ill. On each end of the whiffletree is a ferrule with spiral spring, socketed eye, and passage for trace-holding bolt spindle, from which flexible connections are guided to a common point, and by drawing upon which all the bolt spindles will be withdrawn at the same time and the traces released.

A grading and ditching machine has been patented by Mr. John C. Sage, of Atlanta, Ga. Combined with a main frame carrying plows is an adjustably connected conveyor to receive the earth from the plows, with power wheels and pulleys, and other novel features, the machine being adapted to be operated by hand power or a traction engine.

A hay press has been patented by Mr. George Ertel, of Quincy, Ill. The invention covers improvements on a former patented invention of the same inventor, whereby the cost of the press is reduced and its length and weight materially lessened, for increased facility in drawing over rough roads, and time and labor are saved in pressing the bales.

A mould for casting loose pulleys has been patented by Mr. John McCaffrey, of Lawrence, Mass. The invention consists in the combination of an internal disk core, an external ring core, with lugs on one of such parts, in a novel manner, whereby each pulley is formed in one piece, provided with a central oil chamber, radial ribs, and lateral openings for the admission of oil to the central opening.

A fastener or holder for paper or other materials has been patented by Mr. Cecil M. Durnil, of Fayette, Mo. It consists of a piece of spring wire bent to form a spring clamping arm, having an inner bent front holding-end portion and rear stiffening coil, the latter terminating beneath the clamping arm in a forwardly extending arm, to be attached to a board or other surface for clamping or holding articles.

A sweat pad fastener has been patented by Mr. Albert Hobt, of Wellston, Ohio. Combined with the collar and collar pad is a cotter-shaped fastening of malleable metal passed through the pad and through the hames crease of the collar, and folded down at its perforating ends within the crease, snugly fitting within the crease, and holding the collar and pad securely together.

A seat or back fastening for furniture has been patented by Mr. John M. Sander, of Bloomsburg, Pa. This invention relates especially to fastenings adapted to secure seats or backs of school furniture to the arms or irons connecting them to the seat arms or standards, dispensing with key or wedge fastenings, and covering novel features of construction and combinations of parts.

A head rest for coffins has been patented by Mr. John McGrath, of New York City. It consists of a base to which is attached a longitudinally curved plate adapted to the contour of the neck or head, a concave plate being transversely attached to the curved plate, with means for vertically adjusting the combined plates over the base, in connection with a detachable chin strap.

A spark arrester has been patented by Messrs. Frederick Bruhn and Jerome Raum, of Fort Shaw, Montana Ter. It consists of a series of spaced and graduated parallel screens and retaining standards, with outwardly projecting upper ends and knobs, to prevent sparks and cinders passing from the chimney stack, and throw them downward to the base of the chimney or stack.

A telephone receiver has been patented by Mr. Alonzo W. Brown, of Evanston, Wyoming Ter. A box is secured between the poles of a permanent magnet, and in the extremities of the magnet are threaded holes into which are screwed inwardly extending polar extensions, the usual diaphragm being replaced by a tongue arranged to vibrate between these extensions in unison with the vibrations of the current.

A safety appliance for elevators has been patented by Mr. Augusto Stigler, of Milan, Italy. It consists of wings pivoted at their outer sides beneath the floor of the cage, and having hook levers, in connection with levers pivoted beneath the end beams of the floor of the cage, with other novel features, whereby, when the elevator descends too rapidly, or the attendant loses control of it, the cage, will be automatically retarded or stopped.

## NEW BOOKS AND PUBLICATIONS.

JOURNAL AND PROCEEDINGS OF THE ROYAL SOCIETY OF NEW SOUTH WALES FOR 1886. Sydney: Charles Potter. 1887. Pp. liii, 396.

Mineralogy, meteorology, language, anthropology, and similar subjects, form the matter of this volume, testifying to the wide range of the society's work. The book is well printed, and is a valuable record of the scientific life of the antipodes.

THE AMERICAN ANTHROPOLOGIST. Published under the auspices of the Anthropological Society of Washington. Vol. I., No. 1. January, 1888. Pp. 96.

In this very elegantly printed publication, various topics of anthropology are treated by different essayists. We welcome the appearance of the new journal, and wish it every success in its important field.

NEW APPROVED METHOD OF ZINC ETCHING OR PHOTO-ZINC ENGRAVING. By John Gast, 297 Adelphi Street, Brooklyn, N. Y. Price \$1.

In a few pages this little work gives practical instructions how to make zinc relief plates. The method

is said to be especially adapted for half tone reproductions or photo-nature engraving. It gives a concise and clear statement of the author's process.

A PRACTICAL MANUAL OF MINERALS, MINES, AND MINING. Comprising suggestions as to the localities and associations of all the useful minerals, full descriptions of the most effective methods for both the qualitative and quantitative analyses of these minerals, and hints upon the various operations of mining, including architecture and construction. By Professor H. S. Osborn, LL.D., author of the "Metallurgy of Iron and Steel." Illustrated by 171 engravings. 8vo. Pp. 367. Philadelphia: Henry Carey Baird & Co., 810 Walnut Street. Price \$4.50. By mail, free of postage, to any address in the world.

We have here not only a very handsomely gotten up book, but a treatise which to us seems to fill a want in American technical literature. It covers a wide field, and covers it well. It not only contains a large amount of information in reference to the localities and associations of the useful minerals, especially in the United States, but is replete with very condensed information in practical mining, illustrated with great detail and elaboration. We know of no American book of its size, if of any size, which gives so many and such happy illustrations of the miner's practical work. It is calculated to prove a useful handbook to prospectors, analytical chemists, assayers, the owners of mineral lands, and miners. Like all of the publications of this house, it has a capital table of contents, which gives a compend of the matter which is in the book, and an exhaustive index, which together render every subject of importance in the volume easy of access.

Any of the above books may be purchased through this office. Send for new catalogue just published. Address MUNN & Co., 361 Broadway, New York.

## SCIENTIFIC AMERICAN BUILDING EDITION.

MARCH NUMBER.—(No. 29.)

## TABLE OF CONTENTS.

- Elegant plate in colors, showing perspective elevations and floor plans of a cottage of moderate cost, together with full specifications, sheet of details, etc., etc.
- Plate in colors of a handsome suburban residence, costing about Twelve Thousand Five Hundred Dollars, with floor plans, specifications, sheet of details, etc.
- Elevations and floor plans of two dwellings of moderate cost.
- Perspective view and floor plans of a house for Six Thousand Dollars.
- Floor plans and elevations of a substantial residence at Tuxedo Park.—James Brown Lord, architect.
- Perspective and two plans of a Cape Cod cottage of moderate cost.
- Plans and perspective of a double house, costing about Six Thousand Five Hundred Dollars.
- Elevation and plans of an alteration of a dwelling on Long Island.
- Sketch of a one story residence erected at Birmingham, Ala., at a cost of Four Thousand Five Hundred Dollars.
- Floor plans and perspective view of a neat cottage for Seventeen Hundred and Fifty Dollars.
- Plans of an English country house.
- Sketch of a handsome double house at Cleveland, Ohio. Cost, complete, Six Thousand Dollars.
- Illustration of a house costing Three Thousand Dollars.
- Designs of two substantial churches, costing about Four Thousand Dollars each.
- Elevation and floor plans of a brick residence at Newark, N. J. Cost, complete, Seven Thousand Six Hundred and Seventy-five Dollars.
- Sketch of the hall and stairway of a luxurious English dwelling.
- Design for a carriage house and stable. Cost, Fifteen Hundred Dollars.
- Plan of an old plaster ceiling, South Quay, Yarmouth.
- Architectural Suggestions.—A Stairway in the Hotel Cluny.—A Stairway in Rouen.
- Miscellaneous Contents: Ancient Water Works.—Making the House Water-Tight.—Mahogany.—Vibration of Buildings.—Building Accidents.—The Column Vendome, Paris.—Learning to Design Buildings.—Non-Inflammable Wood.—Large Redwood Boards.—An Experiment on the Expansion of Iron in Buildings.—Ornamental Hedges.—The Acoustics of Buildings.—Suggestions on House Painting.—Right and Left in Landscape Painting.—Furniture Woods.—Range Boiler Explosion, with illustrations.—Plastering of Walls, Westminster Hall.—Notes on Bricks.—Mineral Wool.—The Jackson Ventilating Grate, illustrated.—The Spencer Hot Water Heater, illustrated.—The Alsop Furnace, 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.

## Special.

## "OBSTINATE."

This lady was not obstinate, but the disease which vexed her was. For ten years she had a weary and broken-down feeling, with neuralgia and internal troubles, among which were heart palpitation and stomach disorders, accompanied with great pain in the head. Her first report after beginning to take Compound Oxygen showed but little improvement, but she kept on cheerily and hopefully until steady gain rewarded her patient efforts. A month later she noted the temporary disappearance of most of her symptoms. For a while they troubled her by occasional return. In a few weeks she wrote: "The most obstinate symptom is the head trouble. Other symptoms not so severe." Again: "I am now on the third treatment. My stomach and pain in the heart have not troubled me at all since the first three or four days of using it. I am steadily increasing in flesh and strength. You cannot imagine how much I have improved in my looks." Thus do the most obstinate maladies yield to the Compound Oxygen treatment; and sufferers who have hardly dared hope to be well have been refurnished with vigor and vitality.

This is a deeply interesting subject. Would you learn more about it? Write to Drs. Starkey & Palen, 1529 Arch Street, Philadelphia, Pa., for books, which will be sent free, and will tell all you ask to know.

## 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.

A Perfect Engine—Syracuse water motor, for driving light machinery. Turck Water Meter Co., Syracuse, N. Y.

A reliable firm of good business ability, with capital, wants New York State agency for some good patented article. Murgendorff Bros., room 14, 229 Broadway, N. Y.

For best forges, blowers, exhausters, hand and power drills address Buffalo Forge Co., Buffalo, N. Y.

For Sale Cheap—Valuable patent for measuring pocket calipers. Will register all diameters accurately. Address "Calipers," P. O. box 773, New York.

Wanted—10' and 15' shapers universal miller, 30' gear cutter, 96' and 36' pulley borers, 60' pulley lathe. 400 lb. drop hammer. Address, giving maker's name, condition, and lowest price, Henry G. Adams, 94 Liberty St., New York.

For Sale—One-half interest in Leightham's steam boiler. See SCIENTIFIC AMERICAN, Feb. 18, 1888.

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

The Dieble Manufg. Co., Philadelphia, Pa., manufacturers of the Challenge Emery Grinding and Polishing Machinery, invite correspondence with all needing this class of machinery. Catalogues and prices on application.

Wanted—A practical tool maker. An experienced mechanic, capable of managing that department in a hardware manufactory, may apply for situation to "Hardware," P. O. box 773, New York.

Patent button fastener, No. 376,497, for sale, or placed on royalty. Address A. L. Winn, Hillsboro, Ark.

The Diamond Prospecting Co., 22 W. Lake St., Chicago, Ill., general agents for the Sullivan diamond prospecting drills.

Foree Bain, 76 Market St., Chicago, designer and constructor. Electrical apparatus, fine and special machinery, etc.

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.

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 96 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.

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.

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. Lathes for cutting irregular forms a specialty. See ad. p. 62.

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 425 East 8th Street, New York.

Curtis Pressure Regulator and Steam Trap. See p. 77.

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

Drills, 1, 2, 3, and 4 spindle, driven by endless belt. Something new. Dwight Slate Machine Co., Hartford, Conn.

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

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

The sole builders of "The Improved Greene Engine" are the Providence, R. I., Steam Engine Co.