

ENGINEERING INVENTIONS.

An injector has been patented by Mr. Ferdinand Brunbauer, of Vienna, Austria. It is so constructed as to be always gradually started, no matter how it may be operated, having a fixed outer steam tube, a concentric endwise movable inner steam tube, forming a ring-shaped passage between them, a valve within the inner tube, and other novel features.

A railway signal has been patented by Mr. Pierson J. Wicks, of Greenpoint, N. Y. The invention relates to electric signals for block systems, and consists of three conductors, of which one is continuous and supplied from a central station, supplying current to the propelling motor and also for operating the electric signal to sound an alarm when two or more trains are in adjacent sections.

A portable switch table and car replacer has been patented by Mr. Arthur Durieu, of New Orleans, La. It is for facilitating the replacing of cars and locomotives on the tracks in case of derailment, and is to be carried on all trains; it consists of simple devices to be placed on the sleepers at the sides of the rails, and firmly clamped thereto, on which the wheels will run up and down, as on an ordinary rail.

A car coupling has been patented by Mr. James H. Davis, of Danville, Ky. The construction is such that the end of the link may be held at any angle, and when the cars come together to be coupled a lever brings the pin instantly to position, locking the link in the drawhead, while the uncoupling may be done from the top or sides, the invention also covering various other novel features.

A water heater for cars has been patented by Mr. William A. White, of Staatsburg, N. Y. A casing of two metallic shells, with a non-conducting filling between them, incloses a fire box with grate bars, upon which a fuel cylinder discharges, a heating chamber located near communicating with the fire box, coils of pipe extending therefrom, and a water boiler located above, with other novel features, making a construction in which it is intended the fire shall be extinguished when the car is upset.

A railroad spike has been patented by Mr. Thomas A. Davies, of New York City. This invention relates to a former patented inventor of the same inventor, and consists in a spike having the under surface of its head formed with two flat faces, adapting the spike to have a broad bearing upon the base of the rail, whether driven vertically or at an inclination in the cross tie, and also facilitating drawing out without bending.

A railway fish plate has also been patented by the same inventor. It is an angle fish plate made to be bolted to the webs of the rails, and to have a bearing at the outer edge of its base flange upon the cross ties, being slotted beyond the edges of the base of the rails, so that there is no lateral contact with the spikes, but the rails themselves are held from lateral movement by the direct contact of the spikes, and the fish plates have what is called "repose bearings."

A rock drilling machine has been patented by Mr. John Jennings, of Canon City, Col. This invention covers an improvement on a former patented invention of the same inventor, in a machine designed to be especially useful in drilling vertically downward, or nearly so, in which case the drill carriage may be lowered at intervals, or left to fall by gravity, as found necessary or desirable.

A car coupling also forms the subject of two patents issued to the above inventor. In one of them the drawhead has spring-actuated anchor bars, which open to receive and close upon the drawbar automatically, as the cars come together, or may be opened to uncouple the cars by an operating cam, which is worked by a shaft supported in bearings toward either side of the car, so that the coupling or uncoupling can be readily effected without going between the cars. In the other patent the coupling hook is pivoted near its rear end within the drawhead, and has its front end formed with a hook proper for engaging a shoulder on the drawbar, the coupling hook being yieldingly held down by a spring, but so as to admit the entry of the drawbar for coupling as two cars come together, there being levers extending to the sides and top of the car for working the device.

AGRICULTURAL INVENTION.

An improved plow jointer, for cutting off the edge of the furrow slice and depositing it in the previous furrow, has been patented by Mr. Thomas Lowden, of Lowell, Mich. The invention covers a simple construction, whereby it is intended that the draught of the plow shall not be sensibly increased, and the jointer will act substantially in the ordinary form, and it is so made that it can be used as an attachment for any form of plow.

MISCELLANEOUS INVENTIONS.

A folding top for camera stands has been patented by Mr. William H. Lewis, of Brooklyn, N. Y. It is so constructed that it may be folded into a vertical position and made to occupy a very contracted space, and so that great stability and strength are secured and great convenience is afforded for attaching and detaching the camera and legs of the tripod or stand.

A stringed instrument holder has been patented by Mr. Rodolphus T. Fiorini, of New York City. It is an internally threaded socket adapted to be fixed to the bottom of the instrument case, with a standard having a fork adapted to receive the neck of the instrument, and a clamping device for holding the same, being especially calculated for holding violins, guitars, etc., and upon music stands used in orchestras.

A remedy for hog cholera has been patented by Mr. George H. Beckwith, of Charlestown, West Va. It consists of mandrake, sulphur, charred coffee, chlorate of potash, and other materials, prepared and administered in a prescribed way, in connection with certain simple details of treatment which the patentee has found highly effective in years of experience.

A vehicle gear has been patented by Mr. Luther Stouffer, of St. Joseph, Mo. Bolster plates or posts are secured to the head block and the rear axle, perches being supported by the bolster plates and secured to the reaches, springs connected with the perches supporting the wagon box or bed, whereby side bars are dispensed with, cross braces may be used, and the wagon wheels can turn under the reaches.

A filling apparatus has been patented by Mr. John C. Collins, of Chillicothe, Ohio. It is for filling hot salt water or other liquids into cans holding corn or other vegetables, and consists of a sliding frame holding a tray, in combination with a stationary reservoir, filling tubes extending therefrom, with valves which can be opened and closed automatically, and other novel features.

An end gate for wagons has been patented by Mr. Charles F. Bassett, of Hillsdale, Ind. It is so made that it may be applied to either or both ends, will act either as an end gate, scoop board, or dump gate, may be held or placed at any desired angle, is capable of being removed or applied at will, will prevent the sides of the wagon from spreading, and also prevents the contents of the wagon from spilling out.

A fruit drier has been patented by Mr. Sylvester Stigler, of Claysville, Ohio. Combined with apartments open at both ends are horizontal partitions with transverse slots and rearwardly and upwardly bent flanges, with drawers having upwardly bent front ends, for drying fruit, preferably by hot water, and also by steam, drying it quickly, evenly, and so that it will retain all that is possible of its fresh flavor.

A weather strip has been patented by Mr. William R. Allan, of Pittston, Pa. It consists of a weather strip hinged to the door, in one end having a roller journaled, so that as the door is closed the roller travels upon the saddle, carrying the weather strip in advance of the door, and as the door latches, the roller drops into place, the weather strip fitting so as to form a complete seal.

A chimney cap has been patented by Mr. Hiram F. Henry, of Gowanda, N. Y. It consists of a section of pipe with outwardly and upwardly projecting branches having their angle of meeting directly over the center, with imperforate deflecting cones, and other novel features, offering the least possible resistance to the smoke and products of combustion, while effectually preventing the entrance of the wind.

A door check has been patented by Messrs. Elver H. Shaw and Justin D. Wixom, of Clay Center, Kansas. It consists of a latch device to be attached to the base board or wall and a catch to be attached to the face of the door, whereby as the door is opened its catch will be automatically engaged by the latch, and may be readily disengaged to allow the door to be closed, the device being simple and inexpensive.

An apparatus for drying and cleaning ramie and other fibers has been patented by Mr. Christian C. Kauffman, of New Orleans, La. It is for use after decortication, and embraces a hot air drying chamber to solidify the gum or sap in the fiber, with cleaners adapted to mechanically remove the solidified material, and feeding devices to pass the fiber through the drying chamber and the cleaners.

The treating of ramie and other fibers also forms the subject of a patent granted to Messrs. Christian C. Kauffman and John Austin, of New Orleans, La. The invention consists in treating the fiber in a continuous manner, first to a decortivating operation, then to a drying one by artificially heated air, and afterward to a mechanical cleaning, all being performed while the fiber is in motion, and saving rehandling.

A portable stationery case has been patented by Mr. Joshua F. Tannatt, of Springfield, Mass. This invention covers a novel construction, combination, and arrangement of parts, in a case forming a general receptacle for articles used by letter writers and others, and adapted for use either on the table or by suspending it from the wall, so that no matter how it is thrown about or handled, the articles will always remain in place.

A spectacle joint has been patented by Mr. Paul Moews, of New Castle, N. Y. The invention consists of end pieces, each having a trunnion formed on its face, a temple disk having a central aperture fitting over the trunnions and a screw for holding the parts together located between the inner ends of the end pieces and the temple disk, being durable, easily manufactured, and giving a fine appearance to the spectacles.

A hand pasting machine has been patented by Messrs. Ezra T. Hazeltine and John J. Benzino, of Warren, Pa., and Frank A. Weld, of Stanton, Neb. It has a sliding table with a swinging paste box, with a disk for distributing paste on a line across sheets held on the sliding table, and arranged that the paste box may be held raised so that the sheets can pass under it during the movement of the table in one direction without receiving any paste.

A system of aerial navigation has been patented by Mr. William Beeson, of Dillon, Montana Ter. This invention covers various novel features of construction and combinations of parts relating to a system of aerial navigation, comprising a balloon and attached propelling or flying sail-suit aerial motors, whereby the influences of wind currents and gravitation may be utilized to good advantage in navigating the air.

An adjustable window screen has been patented by Messrs. Forest M. Sampson and George W. Hogben, of Ripon, Wis. This invention covers improvements on a former patented invention of the same inventors, so that guide pins separate from the springs by which the adjustable strips or plates are forced outward may be dispensed with, and the spring-pressed plates will be held snugly to the face of the main screen frame.

A carding engine has been patented by Messrs. Benjamin A. Dobson and William J. Brom-

ley, of Bolton, Lancaster County, Eng. This invention is designed to provide improved means, where the revolving flats travel upon flexible bands, for one or both bands to be adjusted separately or simultaneously, and also to provide for automatically adjusting the front and rear carrier shafts or rollers around which the flats pass when the flexible bands are adjusted, so that the flats may be accurately adjusted at all points with reference to the main cylinder.

Interlocking bolts form the subject of two patents issued to Mr. Thomas J. Bush, of Lexington, Ky. The inventions relate to former patented inventions of the same inventor, in the first place covering straight bolts, notched to interlock, in a tie having diagonal intersecting holes, and blocks against which the nuts of the bolts bind, being especially adapted for railway ties and rails, bridge timbers, scaffolding, etc., and in the other case the improvement consisting in so forming the interlocking recess and the lower portion of one member of each pair of bolts that they shall intersect in the same plane and be locked by imparting a quarter turn to one of the pair, they being then tightened by means of screw nuts at their outer ends.

A fiber cleaning machine has been patented by Mr. Arthur W. Savage, of New York City. The material is drawn by an upper gripper from a delivery chute to a carrier belt continually advancing toward a macerating roller, and after the material has been acted upon by the roller it is drawn back against the action of the roller, the cleaned ends being caught by a lower set of gripper fingers, and the uncleaned ends thrown over upon the endless carrier belt to be advanced thereby to the macerating roller; these ends having passed between the roller and its bed, the material is again drawn back against the action of the roller and automatically dropped from the machine, while a second lot of material is drawn from the chute to be operated upon.

SCIENTIFIC AMERICAN BUILDING EDITION.

MAY NUMBER.

TABLE OF CONTENTS.

- 1. Plate in Colors of a Country House, in perspective, enlarged and improved at moderate expense, with floor plans, also sheet of details, specifications, bills of estimate, etc.
2. Plate in Colors of a Dwelling at Orange, N. J., with plans, sheet of details, description, etc.
3. The Queen of England's Cottage at Cannes, with half page engraving.
4. A Twenty-five Hundred Dollar Cottage. Page engraving, showing perspective, and floor plans.
5. New Apartment House in Brooklyn, with perspective view and floor plans.
6. A Two Thousand Dollar House, with three-quarter page engravings, including perspective and floor plans.
7. An Eastlake Cottage, with elevation and floor plan.
8. The New Law Courts Birmingham, page engraving—a splendid example of recent architecture.
9. Design for Local Offices. Half page engraving.
10. A Double Cottage of Moderate Cost, two pages of engravings, with elevations, floor plans, and partial specifications.
11. A Thirty-five Hundred Dollar Cottage, with elevation and floor plans.
12. New Hotel at Mentone, page engraving, showing perspective and plans.
13. A Dwelling of Moderate Cost, page engraving, perspective and floor plans.
14. Design for a Seaside Cottage, perspective view and plans.
15. A Country Church costing \$5,000, a picturesque design in perspective with floor plan.
16. A Church in Stone, to cost from \$20,000 up. An elegant design, with plans.
17. Shopp Fronts in Birmingham, a suggestive and elegant design.
18. The Ponce de Leon Hotel, at St. Augustine, Fla. An elegant and unique specimen of architecture; two engravings.
19. Mode of raising and Repairing the old U. S. Court House at Boston, with three engravings.
20. The Arch of Triumph at Karlsruhe. Designed by Prof. Gotz. Half page engraving.
21. Design for a Monument and Mausoleum to Gen. Grant, by George Matthias; half page engraving.
22. Miscellaneous Contents: Heating by Hot Water, illustrated.—Architectural Wood Turning, illustrated.—Ruling and Section Lining, illustrated.—Iron Ceilings, with illustrations.—Rose covered Porches, with engravings.—Thin Roofing, with an engraving.—Planing Mill Construction, with diagrams.—Reservoir with Automatic Valve, engraving.—How to make Good Roads.—How to make a Cold Room for Eggs, etc.—New way of building Concrete Walls under Water.—How to remove Plaster.—Embossed Wood, how made.—Knitting, and Its Uses.—Strength of Plaster of Paris.—Water Back Explosions.—Stone Fitters.—Experiments in Drying Woods.—Shrinking of Seasoned Timber.—Cement Buildings.—The Acropolis of Athens.—Architectural Excellence.—Artificial Rubies.—Gelatine Moulds for reproducing Carvings.—Paper Roofs.—Floors and Ceilings, Ancient and Modern, by C. Powell Karr.—Built-up Doors.—Staining Wood.—Shelter Belts and Hedge Screens.—Building Constructions under Water.—How to Finish in Natural Wood.—Best Arrangement of Plumbing.—Bursting of Lead Pipes.—Costs of Different Kinds of Walls.—Imitation Stone.—How to Grain Walnut.

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 Fulness, 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.

THE TEST BY RESULTS.

When George Stephenson, the inventor of the locomotive, was about to start out on his first trip, he declared that the water in his boiler carried a power that would revolutionize the carrying trade of the world. The same test which decided the merits of the claims for the powers of steam is a fair one for to-day. One of the most striking of these developments is Compound Oxygen. For a while it also met with incredulity. The idea that it could be stored in water and transported long distances met with the same doubt that had greeted every other new statement as to the powers in nature. But the same perseverance that had in so many fields won success led to patient endurance of the test by results; and they have made it an accomplished fact that oxygen in a compound form can be stored away for future use, to be drawn upon as may be required. Tens of thousands are now living witnesses of this truth. The letters received and on file in the office of Drs. Starkey & Palen, No. 1529 Arch St., Philadelphia, from their patients, report cures in asthma, bronchitis, catarrh, dyspepsia, eczema, epilepsy, dropsy, cancer, hay fever, heart disease, diseases of the eye, of the ear, consumption, rheumatism, diseases of the kidney, headaches, and other diseases. Nervous prostration from mental strain and overwork has in many cases given way to renewed powers and enjoyment of life.

These reports are numbered by thousands, and come from men and women in every position in life. A college president in Vermont writes that though he is well on in years, his voice has been restored so that he can give his lectures and addresses without inconvenience, after for a long time having been a sufferer from throat disease. When such widespread agreement as to results is witnessed, there can be no doubt as to Compound Oxygen. A well prepared digest of the history and working of this remarkable revitalizer, in the form of a two hundred page brochure, will be sent free by addressing Drs. Starkey & Palen, No. 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.

Fine Models. Haven, 211 Mulberry St., Newark, N. J. To Let—Part of large store, 43 Dey St., New York.

Wanted—A thorough mathematical instrument maker. Address P. O. box 1543, Philadelphia, Pa.

Rare Chance.—For sale, the malleable iron Samson jack and press patent. These are the only rack and ratchet machines in the world. They received the first prize in the American Institute and in Atlanta, Ga.; the patent having ten years to run. Call or address John Paar, No. 356 E. 4th St., New York.

Stationary and Boat Engines, Boilers, best made, cheapest price. Address Washburn Engine Co., Medina, Ohio.

For the latest improved diamond prospecting drills, address the M. C. Bullock Mfg. Co., 138 Jackson St., Chicago, Ill.

Just Published.—A new and enlarged catalogue of scientific hooks, furnished free of charge on application by addressing Munn & Co., 361 Broadway, N. Y.

For Sale—Machine shop plant, in operation. Best tools. Address Chas. W. Griggs, 175 Dearborn, Chicago.

Steam Yacht for Sale—48 ft. length, 1 1/2 ft. beam. Price, \$1,800. Address Wm. Stein, Blue Island, Ills.

The Australian-American Trading Co., 20 Collins St., West Melbourne. Sole agencies for American novelties desired. Correspondence solicited. Care of Henry W. Peabody & Co., Boston.

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. The Railroad Gazette, handsomely illustrated, published weekly, at 73 Broadway, New York. Specimen copies free. Send for catalogue of railroad books.

Protection for Watches. Anti-magnetic shields—an absolute protection from all electric and magnetic influences. Can be applied to any watch. Experimental exhibition and explanation at "Anti-Magnetic Shield & Watch Case Co.," 18 John St., New York. F. S. Giles, Agt., or Giles Bro. & Co., Chicago, where full assortment of Anti-Magnetic Watches can be had. Send for full descriptive circular.

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

Woodworking Machinery of all kinds. The Bentel & Marzedant 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 Laquer 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.

Catalogue of books on civil and mechanical engineering, electricity, arts, trades, and manufactures, 116 pages, sent free. F. & F. N. Spon, 35 Murray St., New York.

Guild & Garrison's Steam Pump Works, Brooklyn, N. Y. Pumps for liquids, air, and gases. New catalogue now ready.

Planing and Matching Machines. All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

Power, 113 Liberty St., N. Y. \$1 per yr. Samples free. Packer Ratchet Drills are drop forged from Norway iron and bar steel. Billings & Spencer Co., Hartford, Conn. Pat. Geared Scroll Chucks, with 3 pinions, sold at same prices as common chucks by Cushman Chuck Co., Hartford, Conn.