

ENGINEERING INVENTIONS.

A rotary engine has been patented by Mr. Karl A. Ekman, of Bofors, Sweden. This invention consists of a cylinder body having an elliptical groove in which operate pistons fulcrumed on a revolving cylinder head, which is attached to the main shaft, carrying a disk valve, while there is a fixed cylinder head with inlet and outlet ports and an exhaust.

A driving mechanism for suspended cars has been patented by Mr. John A. Enos, of Peabody, Mass. The supporting truck has wheels resting upon a single rail, combined with an electric motor, the revolving armature of which is rigidly fixed upon the same shaft as the wheels of the suspending truck, the current being taken from the lower rail and passed through the motor to the upper rail, the invention being an improvement on former patented inventions of the same inventor.

MISCELLANEOUS INVENTIONS.

A pumping apparatus for oil wells has been patented by Mr. David T. Lane, of Franklin, Pa. This invention covers a novel combination of parts and details, making an improved apparatus for operating a series of oil wells from a single driving mechanism.

A dental plugger has been patented by Mr. Robert B. Kice, of Richmond, Mo. It consists of a dental engine with a hollow standard and an air pump, the plugger being connected by a flexible tube, and the apparatus being so arranged that the force of the blow will be entirely under the control of the operator.

A banjo has been patented by Mr. Henry Hosens, of Brooklyn, N. Y. Combined with the rim, head, and stick of a banjo is a wire ring, supporting brackets, regulating springs, and an adjusting screw, in a manner intended to increase the strength and clearness of tone of the instrument.

A powder puff has been patented by Mr. William H. Hudswell, of Brooklyn, N. Y. It is so made that the down will be prevented from being matted or felted by the weight of the puffs, and when the puff is applied to the powder the box cover is in place upon the box, so the dust will not be distributed around.

A log turner has been patented by Mr. Robison Shelbourne, of Blandville, Ky. This invention covers novel constructions and combinations, whereby, with devices acting automatically and under ready control, the work of turning logs on the mill carriage may be done by the machinery of the mill and without using cant hooks operated by hand.

A cloth beam for looms has been patented by Messrs. Harrison Underwood and Charles Schweizer, of New York city. It is made in two corresponding semi-cylindrical parts, attachable to and detachable from a revolving shaft, and having an outer casing, the beam being to wind cloth upon as it is woven, and from which it is to be afterward removed.

A head protector for horses has been patented by Mr. Martin F. Corley, of La Salle, Ill. It is formed of felted fabric, having its sides notched, and with attaching cords, being so made as to soon take the shape of the horse's head, and retain and distribute moisture thereon without dripping, to protect horses from the effect of the sun's rays when desired.

A buckle has been patented by Mr. Nils J. Kjellstrom, of East Cambridge, Mass. It is a cam lever buckle, in which the plate on which the strap or band is to be pressed has on its upper surface a series of grooves, whereby a strap can be quickly clamped, the hold being more secure as any strain is increased, and the device being simple in construction.

A dough kneading machine has been patented by Mr. Joseph G. Tonrangeau, of Quebec, Canada. In combination with a supporting frame is a cylinder having a door or opening, and means for raising it, a beater frame within the cylinder and shafts for operating it, whereby the dough may be kneaded and the cylinder raised and rotated to discharge the dough.

A combined plumb, level, and rule has been patented by Mr. John Morrison, of St. Louis, Mo. The rule is made in hinged sections, with a graduated straight edge pivoted to one section, the tool being one which can be used for general measuring or conveniently adjusted for leveling and plumbing, while it can be folded to a size convenient for carrying in the pocket.

A fire escape has been patented by Mr. Daniel B. Kimball, of Syracuse, N. Y. It is portable, and comprises a suitable frame upon which is mounted a series of cog wheels and a clock escapement, to govern the speed of the escape belt from a drum, the belt having a suitable attachment by which a person may be supported while being lowered from a building.

A photographic camera has been patented by Messrs. William H. Lewis and Erastus B. Barker, of New York city. This invention covers novel parts connected with the camera box and bed section, over which the bellows portion of the camera works, also a novel detachable diaphragm for making stereoscopic pictures, and a means for securely holding the camera in its stand, and for its ready detachment.

A "swing back camera" has also been patented by Mr. William H. Lewis, the patent covering novel means of attaching the back, whereby it may be released and fastened on both sides of the camera by operating the fastening device from one side only of the instrument, thereby saving time and being much more convenient.

A secondary battery or accumulator has been patented by Mr. James Pitkin, of Clerkenwell, Middlesex Co., Eng. The element is constructed of a central plate or support of metallic lead, against which the spongy lead or peroxide is held by perforated plates of ebonite, the lead plate having ribs cast on its faces which divide up the faces of the plate into cells into which the active material is packed, the object being to prevent the latter from becoming detached from the plate or support, and to avoid liability of short circuiting.

Special.

"ANOTHER HOUSEHOLD NECESSITY."

In a recent number of this paper we published a reporter's interview with Mr. Joseph Wild, the venerable and estimable head of the firm of Joseph Wild & Co., of 82 and 84 Worth Street, New York, in which he related his experience in the use of the remedial agent known as "Compound Oxygen," administered by Drs. Starkey & Palen, of Philadelphia, which he heartily indorsed. An error in the heading of the article gave to Mr. Wild the credit of being the inventor of "Linoleum," which, as the letter below will show, Mr. Wild hastens to disclaim.

JOSEPH WILD & CO., 82 & 84 WORTH ST. AND 11 & 13 THOMAS ST., NEW YORK, May 13, 1886. DR. STARKEY & PALEN, 1529 Arch St., Philad'a, Pa. DEAR SIR: The article entitled "Another Household Necessity"—Mr. Wild, the inventor of Linoleum, notes a discovery as valuable as his own," published in the SCIENTIFIC AMERICAN of May 8, is misleading, as stating that Mr. Joseph Wild was the inventor of Linoleum. It should have stated that Joseph Wild & Co., 82 & 84 Worth St., New York, are the owners of the patent in the United States and sole manufacturers of Linoleum in the United States. Please insert the above in the papers that have had the mistaken advertisement. JOSEPH WILD.

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 or dealers in wire nail machines address Wilson Hoop Co., West Bay City, Mich. State range of work, capacity, price, and features of importance.

Wanted—A practical and competent man as superintendent of a large sewing machine factory now in operation. State age, experience, and references, and address "Henley," P. O. Box 773, New York.

Wanted.—Party representing and traveling through the West for other interests wants also to represent a firm manufacturing common stove pipe iron. Must be a good grade of cheap iron; no other iron wanted. A No. 1 references. Address B. Y., Chicago Journal of Commerce.

Wanted—A capitalist to take a half interest in or to manage a valuable patent on Automatic Freight Car Brake. A splendid chance to the right man. For further particulars, address R. B. V., Box 607, Iowa Falls, Iowa. Send to the Railroad Gazette, 73 Broadway, New York, for a catalogue of Locomotive, Track, and other railroad books.

Emery Wheels of unusually superior quality for wet grinding. The Tanite Co., Stroudsburg, Monroe Co., Pa.

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

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.

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

The Knowles Steam Pump Works, 44 Washington 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.

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN patent agency, 361 Broadway, New York.

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.

Nystrom's Mechanics.—A pocket book of mechanics and engineering, containing a memorandum of facts and connection of practice and theory, by J. W. Nystrom, C. E., 18th edition, revised and greatly enlarged, plates, 12mo, roan tuck. Price, \$3.50. For sale by Munn & Co., 361 Broadway, New York city.

Hercules Lacing and Superior Leather Belting made by Page Belting Co., Concord, N. H. See adv page 238.

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.

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

Curtis Pressure Regulator and Steam Trap. See p. 142.

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

The Improved Hydraulic Jacks, Punches, 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. 350.

Astronomical Telescopes, from 6" to largest size. Observatory Domes, all sizes. Warner & Swasey, Cleveland, O.

"Backward, turn backward, O Time in your flight, Make me a child again, just for to-night," is the exclamation, in thought, of many a man who has suffered through a long life from some distressing disease, that he might have cured with a few bottles of medicine like Dr. Pierce's "Golden Medical Discovery," which cures all blood and skin diseases, as well as consumption or scrofula of the lungs. If he were "a child again," he would know enough to have a bottle of the Discovery "to-night," and in old age would not implore Father Time to "fly backward" for his special benefit. Hence, "Be wise to-day, 'tis madness to defer." Get a bottle of the nearest druggist.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all, either by letter or in this department, each must take his turn. Social Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(1) B. A. W. asks: 1. Why are boilers tested with cold water and pump? A. Because it is convenient and safe. 2. Will a boiler be safe at more pressure of steam than it was tested with by cold water? A. No; it should not be used at more than 50 per cent of the test pressure. 3. Which is best—a square box boiler or a cylindrical one? A. Cylindrical boilers are generally best, cheapest, and most durable. 4. Does a tub of water weigh any more with a live ten pound fish in it in suspension than with no fish in it? A. Weighs the same, provided the tub is brimming full in both cases.

(2) A. C. desires a receipt for a preparation to restore the gloss of elegant bindings in different colors. A. Take of Canada balsam and clear white resin, of each six ounces, oil of turpentine 1 quart, dissolve.

(3) L. M. asks: Is there any cheap way of making white a straw hat which loses its whiteness from wear, and how do the straw hat makers bleach their hats, or the straw of which the hats are made? A. The following receipt is a simple and inexpensive one: Obtain a deep box, air tight if possible; place at the bottom a stone; on the stone a flat piece of iron red hot, or a pan of charcoal, on which scatter powdered brimstone; there should be hooks in the box on which to hang the hat; close the lid, and let the hat remain a night. Another receipt for bleaching straw is to soak the goods in caustic soda and afterward to use on them chloride of lime or javelle water. The excess of chlorine should be removed by hyposulphite of soda, called anti-chlor. In first method, the hat should be moistened, as a dry fabric will not bleach.

(4) N. N. C.—So-called paste diamonds and other imitations of precious stones are made in much the same way as glass. Cape May diamonds are simply crystals of quartz cut and polished. Yellow stones are sometimes dipped in a dilute solution of aniline violet to make them appear bluish white.

(5) L. O. K. asks: What rate of speed can I expect from a stern wheel pleasure boat 32 feet by 6 feet, two engines each 3 1/2 inches bore by 24 inches stroke, 150 pounds pressure. Draught of hull 12 inches, with sharp bow, well proportioned. Engines work direct (not geared). A. You will get a speed of 6 to 7 miles.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted May 18, 1886, AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.] Abdominal supporter, I. W. & A. Fox..... 342,294 Air compressor, E. Swartz..... 342,310 Alarm. See Clock alarm. Amalgamator, B. Tyson..... 342,272 Ammonia, obtaining, J. Van Ruymbeke..... 342,237 Anchor, J. Barton..... 342,572 Animal shears, S. D. Paxton et al..... 342,129 Annunciator and fire alarm, electric, A. T. Hess..... 341,909 Axle, C. H. Rich..... 342,136 Axles, machine for turning, J. N. Spencer..... 342,048 Banjo, H. Hoseus..... 342,068 Bar. See Toe talk bar. Barrels, machine for the manufacture of veneer, J. R. Allgire..... 341,968 Basket, truck, J. Ridgway..... 342,137 Bath house, floating, W. T. Lorimer..... 342,023 Belt protect or guide, M. Stansel..... 342,269 Bicycle pedal, E. A. Richardson..... 341,946 Blind sash adjuster, J. Naylor..... 342,124 Bolt. See Flour bolt. Bolt blank machine, W. E. Ward..... 341,970, 341,971 Bolting reel, H. P. Cavanaugh..... 342,288 Book holder, A. C. Hafely..... 342,006 Book, pad, J. W. Cummings..... 342,286 Boot or shoe and making the same, Knipe & Wadleigh..... 341,920 Boot or shoe jack, A. Wicks..... 342,155 Boot or shoe tree foot, O. I. Howe..... 342,238 Boots and shoes, machine for stamping soles of, C. S. Fifeid..... 342,192 Boots or shoes, crimping machine for, S. W. Jamieson..... 341,913 Bottle stopper, C. M. Hanson..... 342,089 Bottle stopper, G. L. Waitt..... 342,057 Bottles, machinery for securing corks or stoppers in, R. J. Howard..... 342,015 Box. See Post office box. Box former, M. F. Wilson..... 341,978 Box nailing machine, Smith & Doig..... 342,230, 342,268 Bracket. See Shingling bracket. Brake. See Vehicle brake. Wagon brake. Brick, iron coated fire, J. P. Comins..... 342,066 Brick machine, A. Marlor..... 341,928 Brick machine, hydraulic, F. S. Baldwin..... 342,061 Bridge gate, J. Starke..... 342,270 Bridge gate, P. Winkler..... 341,979 Brush for bolting reels, H. P. Cavanaugh..... 342,284 Brush knots or tufts of bristles, manufacture of, R. C. Fellows..... 342,248

Brushes, machine for boring, Crowell & Gesswein..... 342,285 Brushes, etc., cementing tufts of fibrous material in bored stock for the manufacture of, R. C. Fellows..... 342,247 Buckle, L. Hewitt..... 342,092 Buckle, N. J. Kjellstrom..... 342,110 Buckle, T. Mitchell..... 342,120 Buckle attachment for straps, W. Smith..... 341,958 Buckle, suspender, C. C. Shelby..... 342,047 Buckle, suspender, J. Spruce..... 342,145 Bung, Collins & Weatherhead..... 342,184 Burner. See Gas burner. Button, J. T. Rich..... 342,268 Button, M. D. Shipman..... 341,952 Button attaching device, R. G. Lewis..... 342,023 Button fastener, T. R. Hyde, Jr..... 342,301 Button fastener, G. W. Prentice..... 341,944 Button fastener, J. F. Thayer..... 341,965 Butt on fastener, safety, R. T. Chew..... 342,182 Buttonhole loop, safety, F. C. Churchill..... 341,879 Button, sleeve, F. H. Gladding..... 341,901 Camera. See Photographic camera. Cameras, inst antaneous shutter for, E. E. Collinson, Jr..... 341,887 Can. See Sheet metal can. Can filling apparatus, A. Cerruti..... 341,996 Can opener, G. H. Tansley..... 341,908 Cane, machine for slicing sugar, A. Stromberg..... 341,959 Car coupling, W. W. Bays..... 342,108 Car coupling, F. Miller..... 342,028 Car coupling, P. J. Norton..... 342,262 Car coupling, Williams & Dewert..... 342,276 Car, railway, A. B. Harris..... 342,090 Car, ventilator, Emert & Hill..... 342,000 Car ventilator, T. B. Howe..... 342,069 Car wheel, J. C. Beach..... 342,169 Cars, draw bar for railway, C. E. McIntosh..... 341,932 Cars, driving mechanism for suspended, J. A. Enos..... 342,246 Cars for cable railways, grip for, T. Wright..... 342,312 Cars, grain door attachment for railway, T. Hoadeley..... 341,910 Cars, safety device for cable, Van Wagenen & Goddu..... 342,273 Carriage spring, J. E. Simmons..... 341,958 Cash register, W. Aldrich..... 342,059 Cement for brush making and other purposes, R. C. Fellows..... 342,191 Chain link, ornamental, J. Bush ee..... 341,983 Chair. See Exercising chair. Rocking chair. Chairs, clamping device for reclining, E. Kelsey..... 342,019 Change receptacle and satchel or bag, combined, T. J. Ford..... 341,898 Charcoal, apparatus for the manufacture of, L. S. Goodrich..... 342,201 Charcoal kiln, L. S. Goodrich..... 342,202 Chart, anatomical, J. T. White..... 342,154 Chromosphere or optical toy, H. A. Plimpton..... 342,264 Churn motor, S. C. Bandler..... 341,945 Churn power, J. R. Douglass..... 341,893 Clamp, C. W. Cornell..... 342,187 Clasp, L. Mandie..... 342,214 Clay tempering mill, R. Willing..... 342,277 Cleaning tool, C. L. B. Perkins..... 341,938 Clock alarm, L. Hubbell..... 342,206 Clock, electric pendulum, F. & O. Haenichen..... 342,086 Closet. See Water closet. Cloth folding machine, J. D. Elliot..... 342,190 Clutch coupler, automatic, J. B. Pugh..... 342,088 Coffin, S. E. Baker..... 342,242 Collar pad, horse, F. Burkhardt..... 341,922 Coloring compound, A. M. Jacobs..... 342,207 Coloring matter, production of yellow azo, F. Bender..... 341,991 Compressor, J. A. Gaboury..... 342,198 Cooking vessel, A. G. Stanton..... 342,050 Cooling room and disposing of noxious gases therein, F. Hainsworth..... 341,906 Cornice, F. Mankey..... 342,024 Corset, nursing, B. Baldwin..... 341,870 Corsets, manufacturing, B. Baldwin..... 341,869 Coupling. See Car coupling. Pipe coupling. Thill coupling. Crusher. See Ice crusher. Crushing and grinding mill, J. F. Winchell..... 342,158, 342,311 Cultivator, straddle row wheel, A. Cox..... 341,889 Curtain, window, C. Darland..... 341,998 Cutlery handles, manufacture of, Jeralds & Lawton..... 341,915 Cutlery scourer, T. W. Hines..... 342,094 Cutter. See Straw cutter. Veterinary incisor cutter. Veterinary molar cutter. Cutting instrument, C. R. Heizmann..... 342,258 Dental mouth tube, T. W. F. Rowney..... 342,042 Dental plugger, R. E. Kice..... 342,107 Dentistry, mechanical, W. D. Mayfield..... 341,929 Diaper, L. S. Samuel..... 342,048 Digger. See Potato digger. Dikes and dams, apparatus for repairing, G. Dembrun..... 342,077 Disinfectant, M. Souvielle..... 342,231 Ditching machine, Phumb & Wise..... 341,941 Door check, G. W. Randall..... 342,224 Doubling and winding machine, Briggs & Webb..... 342,063 Drier. See Fruit drier. Drum, snare, G. W. Bemis..... 342,062 Egg boiler and steamer, W. L. Chipley..... 341,878 Ejector for vacuum brakes, E. D. Eames..... 341,894 Electric circuits, device or means for making and breaking, V. Willis..... 342,157 Electric circuits, indicator for, O. F. Jonsson..... 341,918 Electric machine, dynamo, C. Batchelor..... 341,990 Electrical conduit, J. R. Burdick..... 342,230 Elevator. See Tobacco elevator. Engine. See Gas engine. Multi-cylinder engine. Rotary engine. Exercising chair, J. M. W. Kitchen..... 342,020 Fabrics, making textile, E. Maerens..... 341,927 Farm gate, L. C. Hunter..... 342,299 Farm gate, J. A. Lease..... 342,113 Faucet for beer and other liquids, A. Stover..... 342,052 Faucets, extension attachment for oil tank, G. P. Saunders..... 342,138 Feed roll, A. Rodgers..... 342,228 Fence, G. Busing..... 342,232 Fence, B. A. Rogers..... 342,208 Fence machine, J. Williams et al..... 342,240 Fence machines, tension device for, M. C. Henley..... 342,010 Fence, metallic, H. M. Walker..... 341,959 Fence post, W. W. McCallip..... 342,027 Fences, machine for weaving, Cook & Burt..... 342,069 Fertilizer, J. Van Ruymbeke..... 341,968 Fertilizer from tank waste, making a, J. Van Ruymbeke..... 342,238 Fibrous and porous ware, treating, H. Carmichael..... 342,179 File, letter, A. H. Green..... 341,903 File or holder, paper, J. H. Stull..... 341,900 Filter, J. T. Walls..... 342,151 Fire escape, D. E. Kimball..... 342,108