

ENGINEERING INVENTIONS.

An automatic attachment for locomotives has been patented by Mr. Norman F. Chase, of Montrose, N. Y. This invention supplies a novel construction whereby certain devices upon the locomotive may be operated by a person on the track or at a station to signal the engineer or stop the locomotive.

A car coupling has been patented by Mr. Noble K. Parks, of Pilot Grove, Ind. By this invention the reversible coupling bar is formed at one end with spring clamping jaws and at the other end with an arrow shaped head to adapt it to be reversed in the drawhead, to present either the clamping jaws or the arrowhead at the forward open end of the drawhead, as may be required.

A freight car door lock has been patented by Mr. James Abbott, of Elmira, N. Y. A shaft with a squared upper end is journaled in the car roof, rods connecting with the inner end of the shaft extend to the sides of the car, and a hasp is pivoted on the roof of the car, and provided with an aperture for receiving the upper end of the shaft, making a simple and safe lock, to be operated from the roof of the car.

A steam engine has been patented by Mr. James S. McCoy, of Brooklyn, N. Y. The slide valve is carried by and within the piston, around which a steam space is formed in the cylinder, so that the piston is rendered almost entirely frictionless, the steam inlet port to the cylinder being immediately below the piston, whereby the pressure of steam will counteract the weight of the piston, with various other novel features.

MISCELLANEOUS INVENTIONS.

A clay tempering machine has been patented by Mr. Frank Middleton, of Richmond, Va. This invention relates to novel construction of the main frame and to the method of transmitting and applying the power, whereby the mechanism is simplified and greater steadiness of frame and machinery obtained.

A vulcanizable gilding rubber has been patented by Mr. Jehu H. Wood, of Lebanon, O. This invention covers, as a new article of manufacture, a sheet of vulcanizable rubber, to which coatings of chloride of silver have been applied, together with a novel process of applying such coating, more especially for use in making dental plates.

A belt clasp has been patented by Mr. George F. Zeltmacher, of Brooklyn, N. Y. This invention covers a novel device, whereby belts can be readily adjusted to an increased or diminished length, so that they will remain securely in place when adjusted, and the device will not disfigure or otherwise injure the belts.

A cotton gin has been patented by Mr. Franklin H. Lummus, of Brooklyn, N. Y. Connected with the saws and brush cylinder is a combined carding brush and fire extinguisher, having a continuous unbroken surface of bristles, so arranged that draught through or between the bristles is prevented and a fire extinguishing surface is produced.

A shank lasting apparatus has been patented by Mr. Frank B. Beyerle, of New York city. It has jaw arms with pivoted jaws, and links pivotally connecting the ends of the jaw arms to allow relative longitudinal movement, with other novel features, the invention being an improvement on a former patented invention of a similar tool.

An apparatus for manufacturing double film photographic sensitive paper has been patented by Mr. Henry J. Newton, of New York city. The apparatus embraces guiding, tension, and wiping devices, supported in bearings adjustable in reverse directions, to regulate their distances apart upwardly and laterally, for evenly distributing sensitive emulsion on both sides of the paper simultaneously.

An anchor for fence posts has been patented by Mr. Jacob V. Higgins, of near Three Bridges, N. J. The anchor base plate has an aperture to receive an iron fence post, there being an upwardly projecting neck around the rim of the aperture, and this plate is intended to be placed so low that the top of the piece will be below the surface of the ground, in which, being loose on the post, it can work up or down with the action of the frost without tilting the post.

A combined latch and lock has been patented by Mr. Joshua B. Hutson, of Richmond, Va. Combined with the sliding bolt of the lock is a sliding frame, intermediate between the knob nut and key and the bolt of the lock, with means for locking the sliding frame, to prevent it from being moved by the knob nut or key, while permitting the free movement of the bolt, the invention being an improvement on a former patented invention of the same inventor.

NEW BOOKS AND PUBLICATIONS.

PROCEEDINGS OF THE DAVENPORT ACADEMY OF SCIENCES. Vol IV. 1882-1884. Davenport, Iowa: Published by the Academy, 1886.

This fourth volume of the proceedings of the Davenport Academy of Sciences contains a number of papers of permanent scientific value. Mr. J. C. Arthur continues his "Contributions to the Flora of Iowa," which have already attracted favorable notice in previous volumes. Dr. C. C. Parry has a number of botanical papers; and in his chief contribution, "Chorizanthe," he has undertaken a complete revision of the genus, which has been received by botanists generally, and has been adopted at the Royal Herbarium, Kew Gardens, England. The descriptions of new Blastoids and Crinoids from the Hamilton group are accompanied by fine illustrations. But perhaps the chief interest of the volume centers in its archaeological contributions. Some of these are of more than usual merit. Dr. Hoffman of the Bureau of Ethnology has an illustrated paper on Aborigines in California and Queen Charlotte's Island. An article on the Ancient Pottery of the Mississippi Valley, by Mr. William H. Holmes, of the U. S. Geological Survey, is accompanied

by excellent illustrations drawn by the author, who is a skillful artist as well as archaeologist. Mr. Harrison and Mr. Preston have papers respectively on mound explorations in Iowa and Illinois. The Elephant Pipes and Inscribed Tablets in the Museum of the Academy have been carefully described by Mr. C. E. Putnam. There are in addition a number of biographical and miscellaneous papers, which make a total contents ver creditable to the Academy.

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.

Wanted—Back volumes of SCIENTIFIC AMERICAN. Address N. H., Box 773, New York city.

Blake's Belt Studs are the strongest and best fastenings for Leather and Rubber Belts. Greene, Tweed & Co., New York.

Moneyless Inventors! Capital furnished for procuring your patent for half interest in same. Correspondence confidential. Address "Patent," care W. H. Ohler, 18 Locust St., Portland, Me.

Wanted—Propositions from builders of ice machines, to erect a 25 ton machine for W. H. Howe, Nashville, Tenn.

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 Kristalline. 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.

Cotton Belting, Rubber Belting, Hose, and Packing. All kinds. Greene, Tweed & Co., 83 Chambers St., N. Y.

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.

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.

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.

Grimshaw.—Steam Engine Catechism.—A series of thoroughly Practical Questions and Answers arranged so as to give to a Young Engineer just the information required to fit him for properly running an engine. By Robert Grimshaw. 18mo, cloth, \$1.00. For sale by Munn & Co., 361 Broadway, N. Y.

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

Hercules Lacing and Superior Leather Belting made by Page Belting Co., Concord, N. H. See adv. page 332.

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.

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

Iron, Steel, and Copper Drop Forgings of every description. Billings & Spencer Co., Hartford, Conn.

Greene, Tweed & Co., Railroad and Manufacturers' Supplies, have removed to 83 Chambers St., city.

We are sole manufacturers of the Fibrous Asbestos Removable Pipe and Boiler Coverings. We make pure asbestos rods of all kinds. The Chambers-Spence Co., 419 East 8th Street, New York.

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

60,000 Emerson's 1886 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, 39 John St., N. Y.

Barrel, Keg, Hoghead, Stave Machy. See adv. p. 366.

Brass and Iron Working Machinery, Die Sinkers, and Screw Machines. Warner & Swasey, Cleveland, O.

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

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

"We say at night, 'Would God the day were here,' And say at dawn, 'Would God the day were dead.'" How well Swinburne has emphasized the feelings of thousands of earth's fairest daughters, who are laid prostrate by disease's fell hand. But, instead of the anguish of despair, what a song of joy ascends from the hearts of those ladies who have used Dr. Pierce's "Favorite Prescription," and by its means been restored to the glorious sunshine of health. It is a positive remedy for those derangements, irregularities, and weaknesses so common to our best female population. Price reduced to one dollar. By druggists.

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. Special 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) A. H. M. asks: In a dynamo not using batteries or permanent magnets, where is current of electricity generated that makes the field magnets electro magnets? A. In the armature, and thence part or all the current is carried around the field magnets.

(2) L. J. asks about cleaning petroleum pipes. If a powerful magnet be fixed in the scraper, would a compass passed on the outside not indicate the scraper's position? Is the pipe stoneware or iron? A. The pipe is iron. A magnet in the scraper might to a slight extent deflect or affect a poised iron or steel unmagnetized needle. The compass would be useless, as the metal of the pipe would affect it. Two difficulties in connection with any such plan are: 1. The metal pipe would, by distributing the magnetism, act as a magnetic shield, so that it is questionable if any evidence of its presence could be obtained. 2. A strong magnet, by attraction to the sides of the pipe, would help to obstruct the movement.

(3) J. S. M. asks for description of the Jamin magnet, its form and construction, and the quality of steel used. A. Jamin's horseshoe magnets are made of plates of steel magnetized separately and arranged one within the bend of the other, or concentrically. For tempering, etc., consult SUPPLEMENT, Nos. 302 and 318.

(4) D. B., of Ohio.—A State court has no authority to prohibit the use of a patent pending the action in a suit brought thereon, which necessarily involves the question of infringement.

(5) O. J. S. asks (1) if coal gas decreased in bulk one-half will develop double the pressure. A. It will. 2. How many cubic feet of coal gas would be contained in a reservoir 15 inches diameter and 3 feet in length, at a pressure of 200 pounds per square inch? A. 49.2 cubic feet.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. In addition to our facilities for preparing drawings and specifications quickly, the applicant can rest assured that his case will be filed in the Patent Office without delay. Every application, in which the fees have been paid, is sent usually to the Patent Office the same day the papers are signed at our office, or received by mail, so there is no delay in filing the case—a complaint we often hear from other sources. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted,

June 8, 1886,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Adding machine, L. W. Swem..... 343,506
Air and steam brake, automatic, E. J. Cosgrove..... 343,230
Animal shears, J. J. Harrell..... 343,240
Axle box, H. R. Underhill..... 343,350
Axle, wagon, N. L. Holmes..... 343,272
Axles, roller bearing for, C. S. Simpson..... 343,237
Bag holder, L. B. Bar & Patton..... 343,210
Balcony, A. S. Cuff..... 343,226
Bar. See Culm bar.
Beehive, J. F. Walker..... 343,212
Belt clasp, G. E. Zeltmacher..... 343,415
Bicycles, luggage carrier for, C. H. Ross..... 343,549
Billard cue tip, J. Fleming..... 343,235
Billiard register, automatic, J. J. Gleason..... 343,169
Blackboard and perforated desk top, combined, F. E. Eller..... 3,164
Board. See Game board. Wagon shoveling board.
Boat. See Portable boat.
Boiler. See Locomotive boiler. Steam boiler.
Boiler or other furnace, steam, Blanchard & Jones..... 343,531
Boilers, water feeder for, J. Austin..... 343,529
Book covers, paper back for, J. A. Crane..... 343,438, 343,439
Book, index, A. L. Baer..... 343,420
Boot, felt, W. H. Kimball..... 343,460
Boot or shoe lasting machine, W. C. Cross..... 343,440
Boot or shoe soles, machine for trimming the lips of channeled, E. S. Harris..... 343,452
Boot or shoe soles, machine for turning up the lip of channeled, E. S. Harris..... 343,453
Bottle, show, G. L. Keefer..... 343,179
Bottle stopper, E. C. Boughton..... 343,292
Box. See Axle box.
Brake. See Air and steam brake. Car brake. Sled brake. Wagon brake.
Bread cutter, H. V. Harts..... 343,311

Bread knife, J. Wagner..... 343,509
Brick, machine for making pressed, J. C. Pietz..... 343,396
Bridge, C. F. T. Kandler..... 343,377
Bridge, draw, J. G. Johnson..... 343,522
Broom holder, S. C. Dayan..... 343,302
Burner. See Lamp burner.
Butter carrier, S. A. Currier..... 343,301
Button, N. F. Palmer..... 343,277
Button fastener, G. W. Prentice..... 343,199
Button fastener packing case, F. H. Richards..... 343,493
Button setting instrument, F. H. Richards..... 343,546
Buttons and other articles, die for making, J. P. Halstead..... 343,309
Cable system traction, C. H. Bowen..... 343,293
Calipers, G. W. Jopson..... 343,178
Calipers, micrometer, D. McArthur..... 343,473
Calipers, spring, C. S. Rogers..... 343,342
Camera shutter, J. R. Froome..... 343,367
Car brake, J. W. Stark..... 343,502
Car brake and starter, F. Thompson (r)..... 10,733
Car brake, automatic, G. Shone..... 343,504
Car coupling, P. A. Aikman..... 343,528
Car coupling, P. Brinkerhoff..... 343,294
Car coupling, F. A. Casey..... 343,235
Car coupling, J. C. Clay..... 343,434
Car coupling, J. C. Mitchell..... 343,478
Car coupling, F. S. C. Norris..... 343,486
Car coupling, N. K. Parks..... 343,488
Car door lock, freight, J. A. Abbott..... 343,356
Car, dumping, J. J. Souder..... 343,205
Car heater, W. C. Dunn..... 343,445
Car roof, freight, C. B. Hutcheson..... 343,173
Car seat, C. H. Woodmansee..... 343,414
Cars, device for operating street, M. C. Tully..... 343,311
Cars, registering door for street, H. B. Comer..... 343,229
Carbon black, apparatus for manufacturing, J. T. Dysart..... 343,446
Cards and cardboard, machine for beveling the edges of, A. H. Postel..... 343,337
Carpet stretcher, Britton & Truesdale..... 343,433
Carpet stretcher, Lane & Hale..... 343,462
Carpet stretcher, E. B. Willis..... 343,412
Carrier. See Butter carrier. Cartridge carrier.
Cartridge carrier, W. Spitt..... 343,259
Cartridge for blasting, water, M. Settle..... 343,497
Case. See Button fastener packing case.
Cash carrier, T. M. Kenney..... 343,539
Cash carrying device, automatic, Hayward & Simonton, Jr..... 343,455
Casing cap and tubing tester and cleaner, combined, W. V. Hardman..... 343,239
Cask stand, Bishop & Down..... 343,267
Caster, stove, L. A. White..... 343,511
Casting metal, chill for use in, J. J. Carr..... 343,559
Casting traps, mould for, C. F. Carr..... 343,221
Cement, manufacture of hydraulic, H. Mathey, 343,182 to 343,184
Chair. See Easy chair. Surgical chair.
Check row wires, anchor for, R. Faries..... 343,306
Chemical engine, H. A. Hutson..... 343,217
Chimney cap, E. Mignault..... 343,186
Chuck, lathe, J. H. Westcott..... 343,411
Cigar bunching machine, Thurnau & Hampe..... 343,349
Circuit closer, H. H. Hoffman..... 343,372
Clay tempering machine, F. Middleton..... 343,472
Cleaner. See Cotton cleaner.
Clevis, R. Montfort..... 343,474
Clothes drier, W. A. Waldron..... 343,555
Cock, stop, W. Swabel..... 343,283
Cock box, stop, Adee & Smith..... 343,416
Collar for horses, breast, A. W. Tourgee..... 343,210
Color on wall paper, cloth, etc., compound for producing, J. H. Lange..... 343,378
Colter, plow, G. Stevens..... 343,503
Comb. See Curry comb.
Conduit, underground, A. Wyckoff..... 343,354
Converter for making Bessemer metal, H. I. Gantt..... 343,443
Cooking utensil, J. Farrell..... 343,234
Copying apparatus, N. C. Stiles..... 343,506
Corn meal, etc., packing and preserving, F. Dorsey..... 343,163
Corset, A. Rammoser..... 343,538
Corsets, forming and finishing the edges of the front sections of, F. M. Baker..... 343,421
Cotton gin, I. F. Brown..... 343,438
Cotton gin, F. H. Lummus..... 343,380
Cotton gin attachment, Stone & Platt..... 343,280
Coupling. See Car coupling. Lamp coupling. Pipe coupling.
Cracker machine, A. Ruger..... 343,343
Crane, hydraulic, H. Aiken..... 343,417
Cross head, G. R. Cullingworth..... 343,300
Crusher. See Rock crusher.
Culm bar, S. M. Hess..... 343,370
Cultivator, corn planter, rake, and roller, P. P. Gardner..... 343,168
Cultivator, distributor, and planter, D. M. Johnson..... 343,275
Curry comb, T. J. Johnson..... 343,323
Curtain fixture, W. N. Buckley..... 343,160
Curtain fixture, T. McGuire..... 343,483
Cutter. See Bread cutter. Pipe cutter. Rotary cutter.
Dental vulcanizer, F. W. Seabury..... 343,495
Dentist's vulcanizing apparatus, automatic regulator for, C. F. Scattergood..... 343,255
Derricks, stay for oil well and other, G. H. Anderson..... 343,264
Digger. See Potato digger.
Door check, J. Conn..... 343,298
Door roller, P. E. Gansz..... 343,368
Door roller, M. Gansz..... 343,301
Doubling and twisting yarns, machine for, W. W. Taylor..... 343,208
Drier. See Clothes drier.
Drill. See Rock drill.
Dust collector, W. Richardson..... 343,400
Dust collector attachment, W. Richardson..... 343,543
Easy chair and sofa bedstead, combined, W. P. Bean..... 343,265
Edger, gang, Smith & Myers..... 343,405
Electric circuits, reverse current interceptor for, A. G. Holcombe..... 343,373
Electric meter, J. R. Grove..... 343,450
Electric motor, J. Doyle..... 343,444
Electric motor, E. T. & D. High..... 343,176
Electric motor, H. M. Paine..... 343,487
Electric motors, system for regulating and controlling, J. M. Pendleton..... 343,388, 343,394
Electric switch, A. Bernstein..... 343,266
Electrical communicating system, A. G. Holcombe..... 343,374
Electrical conductors, underground conduit for, G. S. Hull..... 343,456
Electrical coupler, G. D. Burt n..... 343,515
Elevator, R. Smith..... 343,404
End gate, D. S. Morrow..... 343,384
Engine. See Chemical engine. Rotary engine.
Engines, automatic stop for, B. J. Roberts..... 343,397
Engines, reverse gear for, F. M. Rites..... 343,494
Extension table, F. Goldbach..... 343,307
Faucet, A. Habernicht..... 343,451