

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.

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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., 13th edition, revised and greatly enlarged, plates, 12mo, roan tuck. Price, \$3.50. For sale by Munn & Co., 361 Broadway, New York city.

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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.

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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.

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June 8, 1886,

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