

ENGINEERING INVENTIONS.

A car coupling has been patented by Mr. Milton W. Coddington, of Rutherford, N. J. It is designed as an automatic coupler, in which the star cam is used for retaining the connecting link, the invention covering a novel construction, arrangement, and combination of parts.

A car coupling has been patented by Mr. George J. Ferguson, of Greenville, Tex. This invention covers a novel construction and arrangement of parts of a continuous drawbar, the bars extending to the middle of the car, and forming connections between the ends of the car, with other novel features in automatic car couplings.

A gate valve has been patented by Mr. William Jackson, of Allegheny City, Pa. Combined with a valve casing having guiding recesses, with a screw stem, is a two-part gate, consisting of two rings, having on their inner edges a double screw-thread-like curve, each having a lug moving in a recess of the valve casing, with other novel features, whereby, when closing, the valve seats itself automatically and firmly.

A lubricator has been patented by Messrs. Thomas Davis and Henry H. McDonough, of East Boston, Mass. It is of that class used to supply oil to the valves of locomotive or hoisting engines, where the live steam is often shut off from the cylinder, and provides a simple and inexpensive device whereby oil will be fed to the engine valve by exhaust action only.

An automatic continuous rail frog and switch has been patented by Mr. Casper Buhrer, of Cambridge City, Ind. A curved wing rail is elevated above the main track, pivoted at one end at the side of the track, and connected to a crank rod operated by one or more pressure bars pivoted to the side of a switch, so a train will force the bars down and operate the crank rod, to throw the wing rail in position for the siding or switch.

A compound locomotive engine has been patented by Messrs. William B. and John A. Johnson, of Wigan, Lancashire Co., Eng. It has two cylinders on each side, the high pressure cylinder being fed directly from the boiler, and each high pressure cylinder exhausting into two steam chests made common to the two low pressure cylinders, which are connected by a cross pipe, the pistons both being on one rod, the valves being operated by a link motion with a link to each cylinder.

AGRICULTURAL INVENTIONS.

A hay carrier has been patented by Mr. Edwin Woodward, of Stryker, O. The invention consists of a novel construction and combination of various parts of a transferring mechanism for hay carrier guide pulleys, for transferring hay from one end of the barn to the other, so that it can be done easily and quickly and without any climbing.

A corn harvesting and husking machine has been patented by Mr. John A. Hillbert, of Carroll, Iowa. Combined with a stalk cutting mechanism and an open endless stalk carrier is a supplemental or ear cutting mechanism for severing the ears from the stalks, with other novel features, the machine being designed to cut the stalks, separate the ears from the stalks and husks, and deliver the husked ears into wagons drawn at the sides of the machine.

A corn planter has been patented by Mr. Ernest H. Kormeyer, of Evansville, Ind. In connection with a suitable frame and various novel features of construction, the seed dropping tube is combined with a cutter having a forked rear edge, whereby a channel is opened in the ground and the seed conducted thereto, the machine being susceptible of adjustment, so that the cutter will enter the ground to any desired depth, while it can be raised and secured above the ground for convenience in passing obstructions, etc.

A seed planter has likewise been patented by the same inventor, with various novel features of construction and arrangement of parts, in which, by properly handling the valves, the hills may be made at any desired distance apart, thus adapting the machine both for drilling and planting.

MISCELLANEOUS INVENTIONS.

A funnel stand has been patented by Messrs. James and John C. Colburn, of Altoona, Pa. It is to be placed upon the counters in groceries, to receive and hold the funnels, and is so made that it does not have to be held while pouring the substance to be done up from the scale pan through the funnel into a paper bag or other package.

A hub attaching device has been patented by Mr. Walter A. Clark, of Chicago, Ill. It is applicable to the ordinary form of vehicle wheel axle, with but slight changes to adapt the axles and hubs to the improved attachment, the object being to prevent the accidental displacement of the wheels, and supply means whereby the retaining nuts upon the ends of the axles may be removed when desired, while the axle will be thoroughly protected from sand and grit.

A pendant stem for watches has been patented by Mr. Fredrick W. Schimmel, of Murray, Idaho Ter. Combined with an internally threaded pendant is an externally threaded collar, placed movably on the stem, and fitted to the threaded portion of the pendant, the collar being notched on opposite sides, and the stem being provided with pins for engaging the notches, the device being durable and intended to prevent dust from entering the movements.

A camera obscura has been patented by Messrs. Frank Sharpe and Harry E. Blake, of North Adams, Mass. It is designed for the use of artists in taking from small pictures correct outlines enlarged to any desired extent, or for taking enlarged outlines of flowers, leaves, fruit, etc., and the apparatus has a mirror, a focusing slide, a lens, a dark chamber, an adjustable swivelling lamp, and a curtain, with various novel details of arrangement and combination of parts.

NEW BOOKS AND PUBLICATIONS.

TABLES AND FORMULÆ FOR RAILROAD ENGINEERS. By B. H. Hardaway. New York: E. & F. N. Spon.

This is a convenient pocket-book, furnished in conjunction with a transitman's blank note-book, intended to present formulæ and tables convenient for the civil engineer for railroad or field work, embracing also tables and examples relative to running transition curves.

ACCIDENTS IN MINES. By Arthur Robert Sawyer. New York: John Wiley & Sons.

This book relates especially to accidents arising from falls of roofs and sides in mines of the North Staffordshire (England) coal field, and gives detailed sections of the workable seams and an account of the system of timbering. The sections and plans have been reproduced with exactness to show how some of these accidents have been caused, and to point to different precautions in mines generally for their prevention. The illustrations are notably numerous and valuable.

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.

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

Wanted—To sell patent for cigar bundling machine, issued Sept. 7, 1886. Address F. Theo. Karsch, 706 Spring Garden St., Philadelphia, Pa.

Concrete patents for sale. E. L. Ransome, S. F., Cal. For Sale—Patent No. 315,652, cock for house service and street washer connections. By turning the cock the water from the street main may be opened to house alone, or to both house and street washer, or may be entirely shut off. F. M. Fogg, 12 Water St., Brooklyn, N. Y.

Wanted—Competent draughtsmen, experienced in blast-furnace and steel works construction. State experience. Address G. S. L., P. O. box 773, New York.

Small Metal Goods of every description made to order. Die work, etc. E. C. Ivins, 538 N. 10th St., Phila., Pa.

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Friction Clutches from \$2.25 on. J. C. Blevney, Newark, N. J.

Haswell's Engineer's Pocket-Book. By Charles H. Haswell, Civil, Marine, and Mechanical Engineer. Giving Tables, Rules, and Formulas pertaining to Mechanics, Mathematics, and Physics, Architecture, Masonry, Steam Vessels, Mills, Limes, Mortars, Cements, etc. 900 pages, leather, pocket-book form, \$4.00. For sale by Munn & Co., 361 Broadway, New York.

Woodworking Machinery of all kinds. The Bental & Markedant Co., 116 Fourth St., Hamilton, O.

A Catechism on the Locomotive. By M. N. Forney. With 19 plates, 271 engravings, and 600 pages. \$2.50. Sent on receipt of the price by Munn & Co., 361 Broadway, New York.

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

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.

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

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.

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

Beach's Improved Pat. Thread Cutting and Diamond Point Lathe Tool. Billings & Spencer 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. 28.

Barrel, Keg, Hogshead, Stave Mach'y. See adv. p. 368.

Catarrh Cured. A clergyman, after years of suffering from that loathsome disease, catarrh, and vainly trying every known remedy, at last found a prescription which completely cured and saved him from death. Any sufferer from this dreadful disease sending a self-addressed stamped envelope to Dr. Lawrence, 212 East 9th St., New York, will receive the recipe free of charge.

For weak lungs, spitting of blood, shortness of breath, consumption, night sweats, and all lingering coughs, Dr. Pierce's "Golden Medical Discovery" is a sovereign remedy. Superior to cod liver oil. By druggists.

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

Lick Telescope and all smaller sizes built by Warner & Swasey, Cleveland, Ohio.

Wrinkles and Recipes. Compiled from the SCIENTIFIC AMERICAN. A collection of practical suggestions, processes, and directions, for the Mechanic, Engineer, Farmer, and Housekeeper. With a Color Tempering Scale, and numerous wood engravings. Revised by Prof. Thurston and Vander Weyde, and Engineers Buel and Rose. 12mo, cloth, \$2.00. For sale by Munn & Co., 361 Broadway, New York.

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) G. W. T. asks for a proper formula for making solid blue ink, or marking paste, to be used with a brush for stenciling. A. Try the following: Shellac 2 ounces, borax 2 ounces, water 25 ounces, gum arabic 2 ounces, ultramarine sufficient. Boil the borax and shellac in some of the water till they are dissolved, and withdraw from the fire. When the solution has become cold, add the rest of the 25 ounces of water, and the ultramarine. When it is to be used with a stencil, it must be made thicker than when it is to be applied with a marking brush.

(2) H. S. McC. asks for a receipt for refining lard. A. The process for purifying lard commercially requires a complicated apparatus. In an ordinary way lard may be purified by heating the melted fat with some sulphuric acid of 1.3 to 1.45 specific gravity, when the fat will separate itself in a pure condition from the impurities and membranous substances.

(3) J. W. P. asks how to polish amber mouth pieces of cigar holders, which have been scraped with a knife blade. A. By rubbing with whiting and water, and finally with a little olive oil well rubbed with a piece of flannel.

(4) F. J. K. asks for a short receipt for reducing gold of different degrees of fineness to a mass of a single carat throughout. A. Melt the gold in a covered crucible and stir or shake well.

(5) A. T. P. asks: 1. What is the best, or a good, cement for tableting writing paper? A. Try either of the following: a. The highest grade transparent glue is soaked 10 minutes in water and melted to a thin solution, and 9 lb. of glycerine added to every 50 lb. of glue. It is colored with alcoholic solution of aniline or cochineal. b. Common glue, with about 5 per cent glycerine. c. Crude gutta percha dissolved in carbon disulphide to the consistency of mullage. The materials used in making this glue or cement for pads vary in grade, so that some experiment is necessary to make a good preparation. 2. Is there any chemical that will keep clothes from turning yellow when boiled with sal soda? A. We know of nothing that would not also be injurious to the fabric. We would recommend bleaching by exposure to sunlight in preference to the use of any chemical.

(6) W. J. F. asks for a receipt for cleaning black silk. A. See the "Removal of Stains and Grease Spots," in SCIENTIFIC AMERICAN SUPPLEMENT, No. 158.

(7) H. M. G. asks: 1. Where can I get asphaltum solution, spoken of in the article "Photographic Zincotypes and Other Photographic Printing Methods for the Printing Press," published in the SCIENTIFIC AMERICAN of July 24, 1886, page 49? What am I to ask for? A. From the receipt as given on page 49, any druggist should be competent to make the preparation, otherwise apply to E. & H. T. Anthony, New York, giving reference, and they will supply it. 2. Have you ever published an article in the SUPPLEMENT, with working drawings, descriptive of a large dynamo? A. We have not as yet published any article containing working drawings for a large dynamo.

(8) J. G. P. asks for a recipe by which he can cause India ink to remain liquid, keep from spoiling, and be waterproof, in a word, a recipe for waterproof drawing ink. A. We know of no means by which, if any material be added to India ink, it can be made waterproof, but would suggest that the drawing itself be covered with a thin coating of the following: Dissolve 30 to 40 parts of dammar in 100 parts of acetone, and then mix 40 parts of this solution with 20 parts of thickly fluid collodion.

(9) F. K. asks what coloring matter to mix with silicate of soda in order to obtain a white colored paint? A. Try oxide of zinc. It will mix readily with silicate of soda.

(10) E. S. A. S. asks for a receipt for making hair oil that is not injurious to the hair. A. Try the following: Castor oil 1/2 pint, 95 per cent alcohol 1/2 pint, tincture cantharides 1/2 ounce, oil of bergamot 2 drachms. Color a pale pink with alkanet root.

(11) E. W. M. writes: I have made a very good ink as follows: Water 1/2 pint, extract of logwood 60 grains, yellow chromate of potash 5 grains, but after standing a few days it gets rosy, so that I cannot use it. Can you tell me how to overcome the difficulty? A. It is one of the peculiarities of the inks made with chromate of potash. You will find numerous other receipts in SCIENTIFIC AMERICAN SUPPLEMENT, No. 157, of which the aniline black ink is probably best suited to your wants.

(12) M. E. W. asks: 1. What kind of oil is best for oiling paper? Oil that is least liable to heat, and which will dry quickest? A. Use a boiled linseed oil that is rebolled with litharge, lead acetate, zinc sulphate, and burnt umber, one ounce of each per gallon. 2. What oil do makers of those old fashioned, yellow colored oil coats use, such as boatmen and cartmen used to wear? A. Boiled linseed oil.

(13) E. O. E asks the best method of repolishing artificial eyes after being roughened by use. A. The glass can be made smooth by the use of moist emery, after which it is polished with fine colcothar or rouge moistened with water, with rubbers of hat felt, finishing with a little moistened putty powder.

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. 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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November 2, 1886,

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