

ENGINEERING INVENTIONS.

An automatic car coupling has been patented by Mr. Joseph D. Majors, of Bragg's, Ala. In the drawbar is pivoted a spring-acted catch...

A steam engine has been patented by Mr. Desire F. A. Decaix, of Paris, France. The invention relates to the valve arrangement, a rotary or rocking plug or cock being employed in combination with a steam jacket surrounding the cylinder...

A feed water cleaner has been patented by Mr. James T. Bryant, of Richmond, Va. This invention covers an improvement on two former patented inventions of the same inventor...

A car coupling has been patented by Mr. Albert H. Boies, of Hudson, Mich. In connection with a vertically slotted drawhead having a bridge is a combined hook and link mounted pivotally within the drawhead...

A device for preventing the explosion of steam boilers has been patented by Mr. Bendix Meyer, of Gleiwitz, Prussia, Germany. It consists in a plate of suitable yielding material, arranged to expand in the boiler...

MECHANICAL INVENTION.

A gib and key has been patented by Mr. John H. Robison, of St. Joe, Pa. The key has an eye at one edge of its wider end, and combined therewith is a gib having a threaded shank received in the eye of the key...

AGRICULTURAL INVENTIONS.

A cultivator has been patented by Mr. James B. Scantlin, of Fairview, Kansas. It is designed for plants planted in rows in fields, nurseries, and gardens...

A combination plow has been patented by Mr. William H. Stanly, of Quitman, Ga. The construction is such that the plow can be readily adjusted to work as a single or double plow...

A gang hoe has been patented by Mr. Franklin T. Gilbert, of Walla Walla, Washington Ter. It is intended especially for use in destroying weeds, and its construction is such that the hoes may be run below the ground surface at any desired depth...

MISCELLANEOUS INVENTIONS.

A log bunk for saw mills has been patented by Mr. Philo B. Williams, of Butler, Ind. It is made to be used in connection with saw mills...

A bicycle has been patented by Mr. Albert K. McMurray, of Brooklyn, N. Y. The main driving wheel is mounted in a peculiar manner, and arranged to be driven at an accelerated rate of speed by treadles...

A rein holder has been patented by Mr. William D. Taber, of Rockville, R. I. It is made of a single piece of wire bent to form loops by which the device is caught upon the dashboard...

A cloth winder has been patented by Mr. Albert Brown, of Mendocino, Cal. The object of the invention is to improve the action or working of bolt-supporting devices, the spindle bearings having a sliding arrangement...

A composition for tanning has been patented by Mary Sutherland, of Diamond, Mo. It consists of extract of cockle burr, terra japonica, and extract of hemlock, with commercial sulphuric acid...

A revolving extension table has been patented by Messrs. David and W. H. Harry Fauber, of Marshfield, Ind. This invention covers a novel construction and combination of parts in a firm and easily adjusted table...

struction and combination of parts in a firm and easily adjusted table, in which the extension leaves can be readily pushed in and drawn out...

A dauber for blacking brushes has been patented by Mr. Moreland M. Dessau, of South Framingham, Mass. It consists of a brush formed of bristles clamped in an annular space...

A platform for trucks has been patented by Mr. Thomas Wright, of Jersey City, N. J. This invention consists principally in the employment of double inverted arch bars, for holding and supporting the forward ends of the crosspieces of the platform...

A scaffold clamp has been patented by Mr. Charles Whittingham, of Toledo, Ohio. It has a roller and crosspin arranged in a slot of the clamp block, so that they are not likely to be damaged by rough handling of the clamp...

A boiler for steaming food has been patented by Mr. Le Roy S. Bunker, of Valton, Wis. This invention provides a simple and convenient form of boiler for making steam, which can, by an outlet pipe, be supplied to a vessel containing food to be steamed...

A car starter and brake has been patented by Messrs. Thomas Cox and Thomas Cox, Jr., of Chicago, Ill. This invention is designed to start and stop the car controlled by a single lever...

An automatic grain weighing and registering apparatus has been patented by Mr. Curtis L. Burgess, of Woodhull, Ill. Combined with a cylinder having two compartments and trunnions, with pivoted arms supporting the cylinder...

A cable grip has been patented by Mr. Thomas O. Cooper, of Wilmington, Del. This invention covers an improved construction, combination, and arrangement of parts of a grip for street cars...

A hub attaching device has been patented by Mr. Walter A. Clark, of Chicago, Ill. The apparatus is so arranged that the wheel may be removed by imparting a simple turn to the hub cap...

A rack collar for the tempering wheels of pug mills has been patented by Messrs. George S. Adams, James Roach, and Elmer A. Sherwood, of Rondout, N. Y. The collar is made in two parts, hinged together and adapted to be held in place upon the bushing or hub of the wheel...

A shaking apparatus has been patented by Mr. Charles Collins, of Doctor Town, Ga. It is an apparatus for mixing liquids, and in connection with a frame or plate having an opening, has a movable plunger rod, and other novel features...

A tanning process has been patented by Mr. James T. Rhyne, of Durant, Miss. After preparation in much the usual way, the tanning is effected with a mixture of water, gambier, salt, sulphuric acid, and saltpeter...

A scavenger mechanism for spinning and drawing machines has been patented by Mr. William A. DeImage, of Lowell, Mass. It is a device for collecting the broken ends of the yarn, and the waste produced by the usual drawing rolls...

A process of manufacturing colored relief impressions on sheet metal has been patented by Messrs. Friedmann Priester and Otto Weidemann, of Berlin, Germany. It consists in coating the sheet metal with a specified isolating coat, on which is painted an elastic background, capable of absorbing colors...

NEW BOOKS AND PUBLICATIONS.

THE THEORY AND PRACTICE OF SURVEYING. By J. B. Johnson. New York: John Wiley & Sons.

This work, while practically adapted for the use of surveyors and engineers generally, is especially designed for the use of students in engineering. It treats very elaborately of the adjustment, use, and care of instruments...

THE SURVEYOR'S GUIDE AND POCKET TABLE BOOK. By B. F. Dorr. New York: D. Van Nostrand.

This little hand book quotes very liberally of United States law and the decisions of the Supreme Court on points touching surveying...

TOPOGRAPHICAL DRAWING AND SKETCHING, INCLUDING APPLICATIONS OF PHOTOGRAPHY. By Lieutenant Henry A. Reed, U. S. A. New York: John Wiley & Sons.

The author of this work is assistant professor of drawing at the United States Military Academy, West Point, and here gives the best methods of drawing and sketching as practiced there...

THE CIVIL ENGINEER'S FIELD BOOK. By Edward Butts. New York: John Wiley & Sons.

This is a handbook principally of tables, intended to save the time of the engineer in making mathematical field calculations. The formulæ are comparatively arranged in a systematic manner...

A Forthcoming Book on Aluminum. Messrs. Henry Carey Baird & Co., of Philadelphia, have in press a volume exclusively devoted to aluminum, its history, occurrence, properties, metallurgy, and applications...

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.

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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 Formulæ pertaining to Mechanics, Mathematics, and Physics, Architecture, Masonry, Steam Vessels, Mills, Limes, Mortars, Cements, etc.

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A Catechism on the Locomotive. By M. N. Forney. With 19 plates, 227 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.

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

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The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Hoisting Engines, Friction Clutch Pulleys, Cut-off Couplings. D. Frisbie & Co., 112 Liberty St., New York.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv., p. 23.

Engineers, capitalists. Illustrated working models of mechanical inventions. Gardam & Sons, 96 John St., N. Y.

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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) S. N. M. asks: Would you kindly inform me what would be the lightest, smallest, and most economical battery which would produce a permanent white incandescence in an exceedingly fine platinum wire, two to three inches in length? Please say at same time if there is any danger of fusion of the wire. A. Two or three good bichromate cells would answer for heating the wire. There would hardly be any danger of fusion, unless with more battery than the above. It all depends on the thickness of the wire and on its length.

(2) F. F. asks: 1. Is the film of the soap bubble air-tight or full of holes like a sieve? Does the bubble grow smaller just before breaking? A. It is air-tight, except as regards its power of dissolving the gases of the air and giving them off again. It does not grow smaller before bursting. 2. What good does it do to wash oxygen gas for use in the lime light? A. It washes out any particles of chloride of potassium that might be carried over and would tend to deteriorate the gas. Can I arrange a simple device to burn gasoline vapor for illumination by having it forced through pipes, the same as house gas? Please tell me how to carburet the vapor, and give a simple blower. A. We advise you to correspond with L. J. Marcy, 1340 Chestnut Street, Philadelphia, who has experimented in this direction, and is an authority on lantern work. The vapor is the carbureting agent; you do not carburet it. 4. Is there a work devoted to physical experiments projected by the magic lantern, such as tank projections, etc.? Would you suggest a list of them for the benefit of lecturers? A. Dalbear's Art of Projection, which we can supply for \$1.50. The list of experiments is endless. Queen & Co., of 924 Chestnut Street, Philadelphia, show such apparatus in their illustrated catalogue. Correspond with them. 5. How can I condense the oxyhydrogen flame to the smallest possible point for the microscope? What condensers do I need, and how shall I arrange them? A. You want strong light, not necessarily the smallest. Use 4 1/2 inch plano-convex condensers, placed flat sides outward, determining their distance from light by trial.

(3) C. W. M. asks what the coils, I, are wound on, in the apparatus for demagnetization of watches, given in SCIENTIFIC AMERICAN of October 2, 1886? A. Pasteboard, wood, or any non-metallic substance may be used to construct the hollow core.

(4) J. E. Z. asks the best material for making a mould, and what metal will run the finest for a large button with a very fine engraving, regardless of color, one that will not frost or blister. A. Use steel, copper, or brass for the mould, and type metal for the button.

(5) G. F. C. asks what effect common brown sugar, mixed in a compound in the proportion of 10 pounds to 50 gallons of water, will have on the steel boilers. A. It will have no effect on the steel of the boilers, but will collect the sediment in cakes,