

ENGINEERING INVENTIONS.

A means for preventing condensation in steam cylinders has been patented by Mr. Charles W. Crawford, of Brazil, Ind. It consists in the application of a current of hot air to jacketed cylinders, a blower being used to maintain circulation from heater to the cylinder and back, and the air being heated, in any suitable heater, to a temperature greater than the steam in the cylinder.

A detecting bar for railway switches has been patented by Mr. James A. Bonnell, of New York city. This invention covers detecting bars used at night or during fogs to ascertain if a train is on a switch before throwing or setting the switch, and is an improvement on a detecting bar patented by the same inventor in July, 1881. By this device the splitting of trains on switches is avoided, even if the switchman cannot see the signals.

An improved car coupling has been patented by Mr. Charles Uebinger, of St. James, Ind. The drawhead is of the usual construction, the coupling pin is held on the outer end of a projecting arm, and this is connected with a lever projecting from the top of the car, where it will strike a similar lever from an approaching car, and so drop the pin through the coupling link; there is also an arm or apron guide on the bottom of the drawhead, to engage a similar one on the approaching car, for guiding the link.

An ore concentrator has been patented by Mr. Alexander D. Clarke, of New York city. It is an improved device for washing off and removing particles of sand in placer mining, and catching the heavy and float gold. The flow of sand, ore, etc., is conducted upon a screen by an inclined chute, from whence another inclined chute conducts it to a transverse gutter, and thence it flows into suitable settling tanks, the chute that conducts the water from the screen being inclined in the inverse direction from the chute that conducts the water upon the screen.

A superheating attachment for steam boilers has been patented by Mr. James A. Stout, of Belleville, Ill. This invention is designed for portable and traction engines, and provides for a novel construction of superheater to take the place of ordinary steam dome, so the steam will be superheated by the gaseous products of combustion as they pass to the chimney; the dome has its heads formed of cast metal rings at its opposite ends, and is combined with the smoke box end of the boiler; the dome also has combined with it a steam supply pipe connecting it with the boiler, preventing foaming or priming, as well as economizing fuel and water.

MECHANICAL INVENTIONS.

A saw tooth swage has been patented by Mr. Samuel J. Chalfant, of Albion, Cal. It consists of an anvil block adapted for being held in a vise, with jaws and a clamping lever for holding removable saw teeth with the points on the anvil, for drawing or swaging with a light hammer, to widen and sharpen the points, the dies being changeable for different forms of teeth, so that worn teeth may be sharpened and perfectly refitted.

A shingle sawing machine has been patented by Messrs. William F. Dake and James H. Seek, of Grand Haven, Mich. The object is to facilitate the utilization of saw mill refuse in making shingles, and for this purpose the saw frame has an endless chain of bars provided with dogs and driven by chain drums, a worm and worm wheel, and a belt and pulley from the saw mandrel. The machine has a movable table, with a guide plate and spring, so that wedge pieces and slivers will push back the table and escape.

AGRICULTURAL INVENTIONS.

An improved cultivator has been patented by Mr. Henry D. Teller, of Starrsville, Ga. By this invention single beam cultivators can be readily adjusted to use as covering plows, and to work deeper or shallower in the ground, as desired, the construction being durable and effective.

A check row attachment for corn planters has been patented by Mr. William W. Robinson, of Ida Grove, Iowa. This invention provides for the operating of the seed dropping slide by the advance of the machine, and covers a novel combination and disposition of parts to facilitate the planting of corn in accurate check rows.

MISCELLANEOUS INVENTIONS.

An improved bracket has been patented by Mr. Jonas Herrmann, of Columbus, Ohio. It is a novel design, adapted for holding a crossbar out from the wall, the cross piece being very securely held, while it is at the same time easily removable.

An improved faucet has been patented by Mr. Joseph H. Dorgan, of Plattsburg, N. Y. The principal object of this invention is to make more easy and convenient the adjustment of the faucet in barrel or cask, with provision for accommodating the faucet to different sized barrel plugs.

A broom support has been patented by Mr. William T. Shaffer, of Evanston, Wyoming Territory. The invention provides for a new and improved pocket or receptacle for holding the broom when not in use, the pocket straightening the bent straws and holding the broom fixed in its proper shape.

A crock cover has been patented by Mr. Daniel W. Frost, of Keokuk, Iowa. This invention provides a crock cover with recesses for holding it on the crock in such a way that the bail of the cover can be used to lift the crock, and the cover can be adjusted to fit different sized crocks.

A clothes drier has been patented by Mr. Robert R. Richardson, of Laramie City, Wyoming Territory. It is an improved combined clothes horse and press or closet, which can be erected or folded easily and rapidly, does not occupy much space when folded, and when in use the sides and doors may be swung open and expose the clothes to the air.

A draught equalizer has been patented by Mr. John Bowers, of Brookville, Ill. It is so constructed that, when three horses are employed, each one will exert a like draught. The middle horse has a two-third leverage over the horse on the other side of the tongue, and a compound leverage over the outside horse on the same side of the tongue.

An improved cotton press has been patented by Messrs. F. L. Faison and George M. Newell, of Wake Forest College, N. C. This invention covers a new construction and combination of parts, including a grooved rail, flanged and grooved rollers, endless rope, thrust bars, follower, drum, and axle, with rock shaft, levers, slide bolts, connecting rods, side doors, etc.

A weather strip has been patented by Mr. Ira Paddock, of Greeley, Kansas. It combines a curved metallic strip with a curved flexible strip, the former doubled and the latter clamped within its fold and secured to the bottom of the door or sash, a spring being attached to the door and to the strip, adapted to hold up the latter as the door opens and closes.

A fire escape has been patented by Mr. Samuel Norris, of Halifax, N. S., Canada. This invention provides for an endless belt with pockets and strengthening chains, suspended bearings to carry an endless belt roller, brake straps, brake levers, and brake cords for controlling the escape, the whole designed to facilitate the escape of people and removal of property from burning buildings.

A pencil holder has been patented by Mr. Bernhard Eybel, of New York city. The object of the invention is to facilitate the adjustment of leads in pencil holders and provide a simple construction. According to this device, the lead is forced outward into position by turning its tapering end in one direction; or withdrawn by revolving it the opposite way, so the pencil can be carried without breaking off the point of the lead.

A combined letter box and mail bag has been patented by Mr. Carl Friedrich Teller, of Offenbach-on-the-Main, Germany. The invention provides for a mail box with a sliding bottom, and when the box is to be emptied a locked bag is passed under the bottom in such manner that, with this special construction, the letters may be dropped into the bag, and when the box is emptied the bottom is pushed back and the bag closed.

An improved pitman rod connection has been patented by Mr. George E. Waggoner, of New Hampton, Mo. It is more especially intended for the connection of a harvester or mower and sickle bar, the solid eye of the pitman rod having a fitted thimble connected with the jaws of the sickle bar head by a screw bolt and jam nut, with means to fix the thimble, a presser box behind the eye of the pitman in the jaws of the head, and a set screw and jam nut to take up the slack.

A fireproof sheet, for use for curtains, theater scenes, roof covering, etc., has been patented by Mr. Junius Nagel, of Vienna, Austria. It consists of either a mixture of asbestos with a zinc oxide, asbestos with magnesia, or asbestos with lime, or a mixture of all these in different proportions according to the proposed use, the mixtures being saturated with a sulphate of alumina, or a chloride of some metal, or a mixture of these solutions, and a particular manner of applying the same to a wire netting or cloth.

A dynamo electric machine has been patented by Mr. Jonas Wenstrom, of Orebro, Sweden. This invention provides for the more complete utilization of excited magnetism than heretofore; the bulk of the wire is enveloped in iron, and the excited magnetism in all directions meets iron for conducting it where wanted, this iron serving as a frame connection between all parts of the machinery, and allowing the armature to move freely between the pole surfaces, and in very close proximity thereto.

A disinfecting tank for the disposal of sewage has been patented by Mr. James J. Powers, of New York city. It combines with a settling tank another one for disinfecting, and a small one for receiving the disinfecting liquid, the latter arranged for automatically discharging the disinfecting liquid into the disinfecting tank. The fluids are withdrawn from the latter by a siphon, the outer end of which has an automatically closing valve, and is in a smaller tank connected with absorption or drain tiles.

A balloon propeller has been patented by Mr. Kansas D. Davis, of Cole City, Ga. This invention is intended to control the motions of a gas balloon, by attachments to the car or its frame; there are outwardly projecting arms with supporting sleeves, reversing wings, and sailing wings with means for operating them by driving shaft with reverse cranks and connecting rods, also a specially devised rudder and apparatus for arresting flight, as well as to control ascent and descent.

An improved coffee and tea pot has been patented by Mr. Frank Rosebrook, of Elmira, N. Y. The coffee or tea pot has a perforated false bottom, the true bottom beneath which is tapering or conical, in the middle of which is a faucet; the coffee or tea is placed on this false bottom, and then the desired water is added, after which the pot is placed inside another vessel of suitable construction to hold water all around, and the larger vessel is placed over the fire, thus extracting the flavor and the aroma from the tea and coffee, so that none of it will be lost.

NEW BOOKS AND PUBLICATIONS.

RELATIVE PROPORTIONS OF THE STEAM ENGINE. By William Dennis Marks. J. B. Lippincott & Co., Philadelphia.

This is the second edition of a work originally published in 1878, with two added chapters, on "The Cheapest Point of Cut-off" and "The Errors of the Zenner Valve Diagram." The author is Whitney, Professor of Dynamical Engineering in the University of Pennsylvania, and undertakes to give rules and formulae for proportions of different parts of engines, so that the engineer may conveniently work out the design and details of any specially desired construction, to meet new circumstances, or better perform the work now done by engines ill adapted for their purpose. The

book fills a place, for those who have the designing of engines, which is hardly taken by any other work in the English language, but there will be general regret that the author did not treat more extensively of the economical point of cut-off, the grounds for the proper consideration of which he has stated in such comprehensive terms.

FOR MOTHERS AND DAUGHTERS. A Manual of Hygiene for Women and the Household. By Mrs. E. G. Cook, M.D. Fowler & Wells, New York.

The importance of physical culture for women, with especial reference to their duties in the household and the raising and care of children, are prominently treated in this book; there is a chapter on bread and butter, with analysis of processes of digestion; hygiene and ventilation are discussed, and the rights and education of children, etc.

A BACHELOR'S TALKS ABOUT MARRIED LIFE AND THINGS ADJACENT. By William Aikman, M.D. Fowler & Wells, New York.

This is a pleasant volume on social life, that cannot be out of place on any drawing room table, where its happy thoughts and cheerful spirit will contribute to the home comforts that the bachelor is always supposed to be in want of.

THE WINE PRESS AND THE CELLAR. By E. H. Rixford. D. Van Nostrand, New York.

This volume is the result of the researches of a practical man investigating the subject for his own benefit as a wine maker, and so deals but lightly with anything touching the theoretical side of the business, while affording a valuable collection of facts from his own experience and from the writings of various authors in the English and foreign languages. The author is evidently familiar with the commencement and progress of the business of grape culture and wine making in California, and his book, while showing some of the errors they have heretofore made, is itself an evidence that a much better understanding now prevails of what is needful for success in this line.

HYGIENE AND SANITARY SCIENCE. A hand book. By George Wilson, M.D., F.R.S.E. P. Blakiston, Son & Co., Philadelphia.

The author of this book, which has now reached its fifth edition, is a medical officer of health for the Mid-Warwickshire sanitary district, England. The scope of the work is very comprehensive, embracing analyses of water and food, examinations as to warming and ventilation, hospital management, removal of sewage, disinfection, etc., with a chapter on vital statistics, and a synopsis of the most important English laws and regulations of health boards. Works of this character are valuable public educators in a direction to which attention cannot be too frequently directed.

HEALTH IN THE HOUSEHOLD, OR HYGIENIC COOKING. By Susanna W. Dodd, M.D. Fowler & Wells, New York.

Many useful hints and recipes are here given for "hygienic" cooking. The book cannot fail to be of great value in every household, to those who intelligently appreciate the author's standpoint. The great majority of people will probably differ widely from many of the ideas advanced, but there are few of those who differ most positively therefrom but will, on careful consideration, concede that it would be a public benefit if our people generally were better informed as to the healthful mode of living the author contends for.

ELECTRICITY, MAGNETISM, AND ELECTRIC TELEGRAPHY. By Thomas D. Lockwood. D. Van Nostrand, New York.

This book the author does not claim to be more than a hand book, a carefully arranged elementary work, leading the learner up to the higher problems of the science, yet it covers a wide range of topics, the language is simple and direct, and the author has evidently given us here the results of careful investigations, gone into solely from practical motives. The text is in the form of questions and answers throughout, a mode of giving information best calculated to eliminate vagueness of statement and hold the mind to a closer analysis of the severally succeeding topics, which is of primary importance with all beginners in the very complex science which the present state of electrical development affords.

ABORIGINAL AMERICAN AUTHORS AND THEIR PRODUCTIONS. By Daniel G. Brinton, A.M., M.D., Philadelphia.

The vivid imaginations of the Indians, their love of story telling and appreciation of style, coupled with language of much power and resource, produced a literature of much quaintness and in some cases brilliancy. The native admiration of eloquence is clearly discernible in their deep seated reverence for the orator. The book shows the aboriginal authors and their works, and is divided into the literary faculty of the native mind, and narrative, didactic, oratorical, poetical, and dramatic literature.

THE ART OF BOOK BINDING. H. P. Du Bois. Bradstreet Press, New York.

This is an historical essay of the art of book binding, from the earliest times, and will be of most value and interest to pronounced bibliophiles.

THE steam pumping machinery of Messrs. Guild & Garrison, of Brooklyn, N. Y., is illustrated in an elaborate catalogue which the firm are sending out at the beginning of the year.

A SHOE AND LEATHER TRADES DIRECTORY, with statistics of the business and record of the most important news in that industry for 1883, makes a handsome volume just issued by the *Shoe and Leather Reporter*, for free distribution to its subscribers. The book distinguishes the manufacturers, tanners, and curriers from those who are only dealers, and notes the several specialties of each. Pennsylvania has 831 tanners and leather dealers, a decrease of 71 from the number in the business in 1882; New York State has 434 tanners and curriers, which is noted as 101 less than the number in 1882.

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Parchment.—Drawing and tracing papers, used to advantage for all tracings and for drawings to be copied by the "blue process." "Helios" blue process paper, the best paper for the purpose. Send for samples and price list. Kenfell & Esser, New York.

Quinn's device for stopping leaks in boiler tubes. Address S. M. Co., South Newmarket, N. H.

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"How to Keep Boilers Clean." Book sent free by James F. Hotchkiss, 86 John St. New York.

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Pumps—Hand & Power, Boiler Pumps. The Goulds Mfg. Co., Seneca Falls, N. Y., & 15 Park Place, New York.

Fox's Corrugated Boiler Furnace, illus. p. 354. Hartmann, Le Doux & Maeker, sole agents, 134 Pearl St., N. Y.

For Freight and Passenger Elevators send to L. S. Graves & Son, Rochester, N. Y.

Best Squaring Shears, Tinner's, and Cannery Tools at Niagara Stamping and Tool Company, Buffalo, N. Y.

Lathes 14 in. swing, with and without back gears and screw. J. Birkenhead, Mansfield, Mass.

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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, 261 Broadway, New York.

Guild & Garrison's Steam Pump Works, Brooklyn, N. Y. Steam Pumping Machinery of every description. Send for catalogue.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. Complete outfit for plating, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

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For Mill Macby & Mill Furnishing, see illus. adv. p. 44.

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Steam Pumps. See adv. Smith, Vaile & Co., p. 46.

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American Fruit Drier. Free Pamphlet. See adv., p. 62.

Drop Forgings. Billings & Spencer Co. See adv., p. 398.

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Hoisting Engines. D. Frisbie & Co., Philadelphia, Pa.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 62.

Railroad and Manufacturers' Supplies. Send for 1884 prices. Greene Tweed & Co., 118 Chambers St., N. Y.

Use King's Office Pen, patented July 31, 1883. Superior to all others. Price, \$1 per gross, mailed free of postage. One dozen pens sent as samples on receipt of 10 cents. Geo. F. King & Merrill, 29 Hawley Street, Boston, Mass.