

## ENGINEERING INVENTIONS.

A watering apparatus for cattle cars has been patented by Mr. Ferdinand E. Canda, of New York City. A principal feature of this invention is the utilization as ducts for the conveyance of water of the grab irons or hand rails on the roof of the car, whereby such irons are made to perform a double function, they forming tubular connections with the water tank or reservoir.

A car mover has been patented by Mr. Elouid Duplessis, of Lake Weedon, Quebec, Canada. A hand lever, having teeth, is pivoted to another lever formed with a hook at one end in such a way that, when the operator desires to move a car, he presses the lever up to the car axle, which is thus introduced into a pocket, and the operator can exert great pressure to turn the car axle.

A signal flag staff has been patented by Messrs. Rees W. Price and Henry A. Russell, of Oskaloosa, Iowa. It is for the especial use of railroad men, and combines three separate flagstaves and flags in one, in a simple construction of such kind that the switchman or other operator will be able to draw out the flag he wishes from the hollow staff, the motion being governed by springs and pawls.

A packer for oil and gas wells has been patented by Mr. John D. Brooder, of Kane, Pa. A tube section is made with an elastic rubber cylinder inclosing a part of the section and carrying a device for engaging the wall of the well and preventing the tube from turning, while a nut is arranged to be turned on the tube section by the well tubing for compressing the rubber packing cylinder and causing it to expand laterally against the walls of the well.

A steam engine has been patented by Messrs. Finlay W. Ross and Carl P. Henrikson, of Prentiss Bay, Mich. Piston rods extend from both ends of a steam cylinder, segmental arms being connected by chains or rods with the piston rods, connection being thence made with the main shaft, on which is a crank disk, whereby the oscillating motion is converted into a rotary motion, with other novel features, the construction being simple and durable.

## AGRICULTURAL INVENTION.

A farm gate has been patented by Mr. Arthur C. Baumgart, of Ossian, Iowa. The gate has a flanged roller between rails and supported by posts, with levers to which the roller is journaled, in combination with bars, arms, weights, cords, pulleys, levers, and standards, so designed that the gate shall be as readily opened and closed by a person on horseback or in a wagon as when upon foot.

## MISCELLANEOUS INVENTIONS.

A paper trimming and pasting machine has been patented by Mr. John D. Hooper, of New York City. This invention covers a novel construction of machine especially designed for cutting off the surplus edges of wall paper and applying paste to the back of the paper prior to hanging on a wall, the machine being also applicable for other purposes.

A lawn cutter has been patented by Mr. Henry L. Sprague, of Tottenville, N. Y. The knives are operated by means of levers resting in grooves in a revolving drum on the axle, the two vibrating cutting bars working so that the machine is adapted to cut grass of any length required, and will be reliable in operation whether the grass be long or short.

A process of curing moss has been patented by Mr. Charles F. Lottman, of Houston, Texas. It consists in forming the moss into tightly compressed bales, keeping the material well saturated, piling the bales closely together and allowing them to stand for a number of days, then washing and ginning the moss and allowing it to dry.

A trace bearer point has been patented by Mr. Edward Armstrong, of Burlington, Kansas. This invention covers a point plate fitted over the lower end of the trace bearer, by which a strong, firm fastening is provided, the end of the bearer will be always covered and protected, and the fastening is one that can be quickly applied and easily detached.

An apparatus for cutting garments has been patented by Eunice Hood, of Bradford, Pa. It consists of an improved dress chart, with neck curve, arm piece, neck scale, shoulder scales, guide mark scales, arm hole scales, and other novel features, in connection with rule for cutting, to facilitate the convenient and accurate cutting of garments.

A nut lock has been patented by Messrs. David N. Bay and William H. Fowler, of Cambridge, Ohio. The nut-locking bar is formed of two parts which slide on each other and are held engaged with two adjacent nuts by means of a spring, the invention being especially applicable with bolts for securing fish plates to railroad rails and similar uses.

A bell cord coupling has been patented by Mr. David S. White, of Huntley, Ill. It consists of a hook with a sliding, spring-actuated metallic sleeve carrying an elastic sleeve capable of projecting beyond the end of the hook in the coupling and of being withdrawn, so as to expose the hook while the cords are being coupled, making a coupling not liable to break car windows when uncoupled.

A well digging apparatus has been patented by Mr. William Lowman, of Marionville, Pa. This invention covers a peculiar construction and arrangement of a mast with braces, treadle, lever, link, rope and pulley, for operating drilling tools by man power, making an apparatus quickly set up and taken down, and that can be easily folded and carried by a single wagon.

An apparatus for distilling wood has been patented by Mr. Elbert J. Burrell, of Atna, Tenn. This invention relates to the utilization of gases given off in the carbonization of wood, and to the handling of condensable gases emanating from charcoal kilns by exhausting them through a series of condensers and forcing them through another separate set of condensers.

A hoisting net has been patented by Messrs. Zeanas S. Burrell and George W. De Vor, of Brooklyn, N. Y., and John J. Pennal, of Jersey City, N. J. The invention covers principally the providing of a surrounding cable, with bridle pieces, designed to connect with the hook of the hoisting block, to distribute equally the strain and prevent escape of the load, in nets used for loading and unloading small freight.

A chimney has been patented by Mr. Joseph A. Hodel, of Cumberland, Md. This invention covers a casting for building in the top of the flue, with a lateral extension and an inwardly projecting flange, a flue section supported upon the offset of the casting, and having a perforated cover, with other novel features, the construction being such as to protect the portion of the building next the chimney, and present a neat top.

A cotton press has been patented by Messrs. William H. Meador and Rius Carl, of Grenada, Miss. The box has hinged sides and removable end pieces, with hinged top, with follower and compression levers, the automatic side doors having retaining straps, and there being other novel features, it being designed that with this press a bale of cotton can be compressed inside of a minute and a quarter.

A horse power for stackers has been patented by Mr. Absalom H. Hoffman, of Littleton, Iowa. A vertical shaft is mounted in a frame, a horizontal lever on the end of the shaft being arranged for hitching a team of horses, whereby motion is communicated to a horizontal shaft in such way as to wind a rope on a drum to raise a load, the operation being easily controlled by a lever convenient to the operator.

A thermostat for incubators has been patented by Mr. Clarence L. Wells, of Quincy, Ill. Combined with an expanding device or box having a vent is a valve arranged to normally close the vent, with a plate adapted to be operated by the expansion and contraction of the contents of the expanding device or box, with other novel features, the device being also calculated to serve for a variety of uses.

A hat felting machine has been patented by Mr. James C. Grant, of Newburg, N. Y. By this invention the hat bodies, soaked in hot water and wrapped in cloths, are passed between revolving rollers, and compressed and shrunken or sized by the convergence of the same, the operation being several times repeated, and the sizing rollers brought nearer together, until the hat bodies are shrunken and fitted to the required degree.

A means for filtering has been patented by Mr. Heinrich Stockheim, of Mannheim, Germany. The receptacle is divided into two compartments by a central partition, and the filtering bodies placed therein above each other, there being also perforated plates with two covers with studs or projections covered with rubber blocks, with a device for pressing the covers inward, so that the latter exert a simultaneous pressure upon the filtering bodies.

A fifth wheel for vehicles has been patented by Mr. Henry Harker, of New York City. The annular bearer or plate has upper and lower recesses separated by a web to receive the head block and hounds ring plates, combined with anti-friction rollers journaled in the web and projecting at their peripheries through the web into the ring plate recesses, with other novel features, making a device adapted for easy working with new or old vehicles.

A hoof trimming machine has been patented by Mr. Rufus Parrish, of Troyville, N. C. It is a combination of a sliding and spring-pressed block carrying a knife with a lever for operating the block, an independent and inclined hoof support in front of the knife, and means for changing the inclination of the hoof support with respect to the knife, to facilitate accurate trimming of the edges of the hoofs of horses and mules previous to shoeing.

A wagon axle has been patented by Mr. Cornelius M. Regan, of Brooklyn, N. Y. (communications referring to which to be addressed to Mr. A. M. Levy, 780 Myrtle Av., Brooklyn, N. Y.). The axle is formed with an encircling flange which overlaps the inner end of the box, excluding sand and dust, and in the upper portion of the axle is an oiling groove formed to prevent too rapid flow of oil, and so arranged that the axle may be conveniently lubricated without removing the wheel.

A gold washing machine has been patented by Mr. Henry G. Blodget, of Harrisburg, Oregon. It has two concentric cylinders revolving in a tank of water, one within another, the inner cylinder perforated, and the inner surface of the other cylinder lined with silver plated copper plates charged with quicksilver, a hopper feeding the sand and quartz pulp into the inner cylinder, when the machine operates to take out the particles of free gold, however light they be. [For particulars in reference to this patent address F. A. Bancroft & Co., East Portland, Oregon.]

The recovery of tin from scraps of tinned plate forms the subject of a patent issued to Mr. Wilhelm Hasenbach, of Mannheim, Germany. Hydrochloric acid is employed to obtain protochloride of tin and protochloride of iron, and the combined solutions are mixed while being agitated in closed vessels at the ordinary temperature with finely divided carbonate of lime until a sample of the filtered liquid no longer contains tin; by a subsequent treatment with sulphuric acid the hydrochloric acid is recovered, and pure protoxide of tin is obtained by a still further treatment, when the protoxide can be reduced to metal or treated directly to obtain tin salts.

## Special.

## HE WOULD NOT PAY A CENT FOR IT.

A gentleman in Birmingham, Ala., seventy-five years of age, who had suffered with gout for thirty years, was recommended by a friend to try the Compound Oxygen, but he had so little faith in it that he "would not pay a cent for it." This friend then sent for a Treatment, and he consented to try it. At that time he was suffering with intense pain in knees and feet; the latter much swollen. Was greatly emaciated, and had been prostrated for weeks at a time. A few weeks since this friend visited him, and then wrote as follows.

"COLUMBUS, ALA., June 15, 1886.

"I have just returned from visiting Mr. Ward, and was highly pleased to find him greatly improved. He and his wife are in high spirits. He has had a terrible time for months. Feet, hands, ankles, and knees had been terribly swollen. For months and months he had not been able to have even a part of a night's sound sleep. After commencing the Home Treatment he had one of his worst spells for two or three days, and had given up all hope even of the Compound Oxygen. But he stuck to it. The first of last week he got one night's good, refreshing sleep. When he awoke the next morning he said to his wife, 'I have had a good night's sleep for the first time in months. But this is only temporary. I fear I shall not be able to sleep any to-night.' But he did, and every night since he has slept well. He told me, on Sunday, that his hands were in their natural shape now, for the first time in many months, and that he believed the swelling in the knees and ankles would now subside, as they were itching a great deal."

In the Treatise on Compound Oxygen can be found a full history of the remedy, and a large list of many more such interesting cases, which will be sent free by addressing Drs. Starkey & Palen, No. 1529 Arch Street, Philadelphia, Pa.

## 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.

Inventors' and Manufacturers' Exhibition, Boston.—Parties having inventions for sale, or wishing to exhibit their goods, address Chas. Babson, Jr., 24 Congress St., Boston, Mass.

Wanted—Some one to manufacture barrel covers, patented October 5, 1886. Wirt Hodsdon, Smithfield, Va.

Wanted—Second-hand engine and boiler, about 50 horse, modern construction, and not much used. Address box 1430, Middletown, N. Y.

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Capitalist Wanted.—To take interest in a new patent tricycle. Has no rival machine. Can be seen and particulars had by applying to M. M. & W. B. Depuy, Rowland, Pike County, Pa.

Westinghouse Engines.—Two 50 horse power Westinghouse engines. Used less than six months. Good as new. Address Collins Arnold, 676 Broadway, Albany, N. Y.

Wanted—A position of trust and responsibility by a man (age 30, married) experienced in the manufacture and ornamental finishing of metal goods, foundry work, and iron construction. A thorough accountant and correspondent; systematic and practical; capable of managing labor, of estimating, and comprehending the details of manufacturing business. C. E. F., P. O. box 773, New York.

United States rights for an egg carrier for sale. Apply, Ed. Chexnayder, New Orleans; or to Wilson & Leach, 855 Broadway, New York.

Stationary and Boat Engines, Boilers, best made, cheapest price. Address Washburn Engine Co., Medina, Ohio.

For the latest improved diamond prospecting drills, address the M. C. Bullock Mfg. Co., 138 Jackson St., Chicago, Ill.

The Australian-American Trading Co., 20 Collins St., West Melbourne. Sole agencies for American novelties desired. Correspondence solicited. Care of Henry W. Peabody & Co., Boston.

The Knowles Steam Pump Works, 113 Federal 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.

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Anti-magnetic shields—an absolute protection from all electric and magnetic influences. Can be applied to any watch. Experimental exhibition and explanation at "Anti-Magnetic Shield & Watch Case Co.," 18 John St., New York. F. S. Giles, Art., or Giles Bro. & Co., Chicago, where full assortment of Anti-Magnetic Watches can be had. Send for full descriptive circular.

Presses & Dies. Ferracute Mach. Co., Bridgeton, 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.

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

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Catalogue of books on civil and mechanical engineering, electricity, arts, trades, and manufactures, 116 pages, sent free. F. & F. N. Spon, 35 Murray St., New York.

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

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Friction Clutch Pulleys. D. Frisbie & Co., N. Y. city.

Venerer Machines, with latest improvements. Farrel Fdry. Mach. Co., Ansonia, Conn. Send for circular.

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Ax handle and spoke lathes. Railway cutting off saw machines. Rollstone Machine Co., Fitchburg, Mass.

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Send for new and complete catalogue of Scientific Books for sale by Munn & Co., 361 Broadway, N. Y. Free on application.

## NEW BOOKS AND PUBLICATIONS.

THE MANUFACTURERS OF THE UNITED STATES. 1887. New York: Armstrong & Knauer Publishing Company. Pp. clxiii., 792.

In this work lists of the manufacturers of this country and of the articles made by them are given. The work is divided into two sections. The first is an alphabetical list of articles, under each of which appears the names of firms manufacturing it, with their addresses. The second section is divided by trades; eighty-nine different trades are comprised in it, and under each trade appears the names of the proper firms. Both sections are very fully indexed. The work is very thorough and as complete as possible, and is a most valuable manual for the business man. We cordially recommend the work, and hope that the business houses of the country will, by their patronage and interest, add to its value every year.

ELEMENTARY MICROSCOPICAL TECHNOLOGY. Part I. The Technical History of a Slide. By Frank L. James, Ph.D., M.D. Pp. 107. St. Louis Medical and Surgical Journal Company, St. Louis, Mo., 1887.

In this little work, the first of three parts which are to complete the treatise, the preparation of slides for the microscope is very fully treated of. Hardening processes, the preparation of sections, including the description of representative microtomes, preservation of the material in moss, embedding, and similar subjects are accorded full descriptions. Staining animal and vegetable tissues is next considered. The preparation of the slip follows, including numerous recipes for cements and hints and directions as to their application. Mounting media, both aqueous and balsamic, are described, and, with the methods of using, are the subjects of two chapters. An appendix on parenchymatous embedding and dry section cutting, with a copious index, conclude Part I. We await with interest the reception of the other two parts.

ELEMENTS OF PHYSIOLOGICAL PSYCHOLOGY. By George T. Ladd. New York: Charles Scribner's Sons, 1887. Pp. xii., 696.

In this admirable work by Professor Ladd, of Yale University, is given a very elaborate account of what is known of the obscure relations existing between the substantial and spiritual elements in the human organism. It is a study of the oft mooted question of the correlation of vital and physical force. A work of seven hundred octavo pages as concisely written as this, and on such weighty subjects, cannot be reviewed within our limits. It is enough to say that the author displays in it a very full acquaintance with the physiology of the subject, and exhibits the fruits of very extensive reading. Over a hundred wood cuts are contained, scattered through the text. The result of the work is to show what is known on the subject, and not only this, but to demonstrate also how little this is, and how futile the attempts to reduce the spiritual forces to a mechanical basis have been. The final paragraphs very forcibly bring forward the limitations of psychology, and formulate the conclusion that the origin and destiny of what the author terms "the mind" are beyond the present scope of physiological psychology. The wise conservatism of the author makes his work doubly valuable.

A MANUAL OF WEIGHTS AND MEASURES. By Oscar Oldberg, Pharm.D. Pp. iii., 246. Charles J. Johnson, Chicago, Ill., 1887.

The title of this work suggests its contents. The entire subject of weights and measures is treated of. The care of weights and balances, the necessary features of each, materials for their construction, and methods of cleaning are the more practical features. The relations of different systems of weights and measures are naturally very fully treated, many tables being embodied in the text. The Swedensborgian system of octonary notation, in which eight was to be the basis, as ten is now, and the many attempts at providing a natural standard are described. The author recognizes the importance of the decimal system. He proposes a readjustment of the present apothecaries' weights to meet it. He would make the grain equal to one-sixteenth gramme. Carrying out this change, the simplest possible ratio between the two would be created, and the departure from the absolute apothecaries' standard would be but slight. The manual is very comprehensive, and though evidently written from a pharmacist's standpoint, is of considerable interest to chemists and physicists.

\*\* Any of the above books may be purchased through this office. Send for new catalogue just published. Address Munn & Co., 361 Broadway, N. Y.