

ENGINEERING INVENTION.

A grip for tram cars has been patented by Mr. Daniel T. Denton, of Tower Mines, Minn. Combined with a hook secured on the bottom of the car is a staple adapted to engage the hook, a slide carrying the staple and being secured to the cable, making a device by which a car may be attached to or detached from a wire rope without stopping.

MISCELLANEOUS INVENTIONS.

A car brake has been patented by Mr. David D. Chidester, of Hackettstown, N. J. The device has a brake with a shoe connected to a main body, combined with an interposed spring or springs, to prevent the "setting" and sliding of the wheels, and the consequent flattening of their treads.

A compressor has been patented by Mr. Harry H. Jones, of Lancaster, N. H. It is especially adapted for compressing dry or nearly dry powdered substances into solid form, particularly in the making of what are known as compressed tablets, in combination with a novel mechanism for automatic measuring.

A walking toy has been patented by Mr. George T. Fallis, of St. Joseph, Mo. It is a mainly inclosed pendulum and rocker construction, to simulate human beings or animals, whereby, when placed upon an inclined plane, it will by its own gravity automatically step out and walk down the plane.

An adjustable cuff retainer has been patented by Mr. Robert L. Pratt, of Tigerville, La. It is a device wherein a cuff fastener and wristband fastener are adjustable with respect to a sleeve fastener, whereby the sleeve wristband is adjusted coincidentally with the cuff, so that it will not project beyond the cuff.

A wrench has been patented by Mr. Vandiver J. Van Horn, of Goff's, Kansas. It is so made that a pipe may be readily gripped and turned thereby when lying upon the floor or close to a wall, giving a large amount of leverage with a small device, which will hold firmly without slipping any sized pipe or nut within its capacity.

A harness pad has been patented by Mr. Somers Van Gilder, of Knoxville, Tenn. It is formed with side flanges, in combination with strips stitched to the outer surface of such flanges, with an ornament secured to the strips between their outer edges and the edges of the skirt, whereby the harness may be very highly ornamented at comparatively small cost.

A cuff holder has been patented by Mr. William J. Walters, of Prospect, N. Y. It has three integral parts, a head, shank, and tie, the latter adapted for attachment to a piece of elastic carrying at one end any approved form of spring snap for attachment to a shirt, the whole device being simply and cheaply constructed and of neat appearance.

A bolt has been patented by Mr. John E. Parker, of Hamilton, Ontario, Canada. It is designed more particularly for doors hinged to swing in both directions, the outer end of the bolt which engages with the apertured plate being formed with two or more bevels, and with a stop for holding the bolt in the aperture of the plate.

A shutter worker has been patented by Mr. James K. McGunkin, of Newark, N. J. This invention covers a novel construction and combination of parts, affording means whereby a shutter may be opened or closed, and locked in either position, with the lower window sash down, the device being simple, cheap, and effective.

A child's carriage has been patented by Mr. Eugene A. Gerbracht, of New York City. This invention covers a novel construction and combination of parts, making a carriage of simple and cheap design, which can be readily transformed from a carriage to a cradle, or *vice versa*, and in which the body is peculiarly hung to give a fine spring effect.

A car pushing device has been patented by Mr. Richard Lukins, of Randolph, Neb. The base has depending guides on opposite sides of the rail, and the connection of the pinch bar with a handle lever is in the rear of the pivoted connection of the lever with a swinging fulcrum, making a device of very simple construction calculated to develop great power.

A coal scoop has been patented by Mr. Frederick B. Barrows, of Duluth, Minn. It is made with two body parts pivotally connected to a supporting frame by bars or pins fitted to the walls of the scoop sections, and passed through tubes fixed to the supporting frame, with other novel features, being designed for automatically loading, carrying, and discharging coal, grain, or other substances.

A method of and device for fitting garments has been patented by Mr. Edward Stahl, of Prescott, Arizona Ter. It consists in applying pattern material to a bust band, forming a downfold in the material, and applying the band and material to the bust just beneath the arms, then cutting the downfold to fit over the shoulder, and cutting the material below the band to fit the waist.

A tamping tool has been patented by Messrs. Warren B. Waldron and George C. Boller, of Folsom City, Cal. It consists of a head formed with a tapering dovetailed groove, and a handle with a tapering projection on its lower end, fitting in the groove of the head, making a tool which may be used without unnecessary stooping on the part of the operator, and in which the head, as it becomes worn, may be renewed.

A saw mill feed device has been patented by Mr. W. Hampton Gibbes, Jr., of Columbia, S. C. Friction disks of unequal size are fitted to slide on the carriage feed shaft, with a lever for moving them, in combination with friction disks mounted on another shaft, the two sets of disks being arranged to engage each other to effect the reciprocations of the carriage and control their speed at will.

A tricycle has been patented by Mr. George W. Rodecap, of Middletown, Ind. This invention covers a novel construction and combination of parts in a machine in which the power is applied to the wheels through treadles in an easy manner and with great regularity, while the tricycle may be steered in any direction, and the pivot wheel quickly turned at any angle with relation to the frame.

A laryngoscope has been patented by Mr. Josef Leiter, of Vienna, Austria-Hungary. It has an electric lamp within a cylindrical casing, and a reflector for throwing the rays into the cavity to be examined and in line with the eye of the operator, with other novel features, making an improved surgical instrument for viewing interior parts of human and animal bodies.

A dental matrix has been patented by Mr. John H. Reed, of Lancaster, Wis. It consists of a hard metal yoke, with a screw, and a band of softer metal, to be attached to the yoke by tongues passing through apertures in the yoke, making a device for supporting the filling while being inserted in a cavity in a tooth, supplying the place of one or more of the natural walls of the tooth cavity.

A dental plugger has been patented by Mr. Benajah S. Byrnes, of Memphis, Tenn. The casing contains a spring whose tension may be increased or diminished to vary the force of the blows struck by the hammer, while the plugger may be thrown out of and into gear without stopping the revolution of the spindle, and the device is not liable to injure the teeth or unduly hurt the patient.

An electric conduit has been patented by Messrs. Robert Van Buren and James J. Powers, of Brooklyn, N. Y. It is formed of sections of non-conducting material, perforated longitudinally for receiving the electrical conductors and provided with recesses or sockets at one end, being tubulated at the opposite end, so that the sockets of one section will receive the projecting portions of the opposite section, making continuous conduits or channels for electrical conductors.

A slate grinding or dressing machine has been patented by Mr. Samuel S. Marshall, of Slatington, Pa. It is for grinding school and other slates, and has a wheel with flat grinding surface and passages for sand and water, there being beneath the wheel hollow standards supporting vertically adjustable tables upon which plates carrying the slates are reciprocated, the pressure of the grinding wheel being increased or diminished as desired.

A wire tightener has been patented by Mr. John W. Wear, of Walker, Mo. It has tongs with jaws having guides for the wire, with interlocking portions adjacent to the guides, to sustain the lateral strain, a drum or wheel being journaled in the tongs and a wire connected with the drum or wheel, with other novel features, making a device especially adapted for taking up the slack of telephone and telegraph wires, tightening fence wires, etc. The same inventor has a further patented invention in which a straining lever is pivoted to the tongs, the lever being connected with the wire to be strained by a rod or chain with a hook, and the lever being so arranged that more or less strain can be exerted, as desired.

NEW BOOKS AND PUBLICATIONS.

UNDER THE SOUTHERN CROSS. By Martin M. Ballou. Boston: Ticknor & Co. 1888. Pp. xi, 405.

This very elegantly printed volume describes the author's travels through Australia, Tasmania, New Zealand, Samoa, and other Pacific islands. Most of the ground covered by the work may seem old material, but the constant development and increasing civilization of the regions in question gives a value to all recent descriptions and makes possible a thoroughly new and fresh book of travels. Mr. Ballou's graceful and graphic style imparts much vivacity to his tale. His description of the present status of the uncivilized aborigines of Australia is of special interest in the light of the march of events, which sooner or later will sweep the interesting natives off the great continent. The book may be unhesitatingly commended to our readers.

MANUAL OF PHARMACY AND PHARMACEUTICAL CHEMISTRY. By Charles F. Heebner, Ph.G. New York: Published by the author. 1887. Pp. 213. Price, \$2; interleaved, \$2.25.

The object of this work is to supply the student of pharmacy with a manual adapted for his special work. At the same time, the author by his research and judicious selection of material has made much more than a student's manual. The book possesses a character of permanent value as a reference book for the practicing pharmacist. It treats of the chemical examination of all leading articles of the pharmacopoeia, the tests for purity, etc. The various processes of pharmacy, percolation, filtration, and the like, are first described quite exhaustively. Then inorganic and organic pharmacy are successively treated, giving the examination of the many compounds dispensed by the pharmacist. In many cases the preparation on the large scale of the products is given, and reactions are used wherever required. The book may be had either interleaved for the owner's special notes or plain. It forms an attractive, clearly arranged, and useful little volume.

A MANUAL OF PRACTICAL HYGIENE. By Edmund A. Parkes, M.D., F.R.S. Edited by F. S. B. Francois de Chaumont, M.D., F.R.S. Seventh edition. Philadelphia: P. Blakiston, Son & Co. 1887. Pp. xx, 766.

It is quite impossible to review this comprehensive and admirably arranged work within the limits of our space. It covers the subject of hygiene in all its bearings and relations. The conditions of soil affecting health and modes of examining and preparing the site for encampments are first treated. The question of water supply comes next. This includes the quality of water, its preservation, tests for impurities, filtration

and other methods of purification, the search after water, etc. Next comes one of the most difficult problems in camp and city hygiene—the removal of excreta. The different methods of securing adequate sewerage by water and the dry methods are fully described. Air and its impurities, warming, ventilation, food and diet, beverages and condiments are all treated at length, under their headings. Exercise, clothing, and the hygiene of the individual are topics for other chapters. Under climate, the various conditions of the air, its humidity, composition, including ozone and malaria, are treated. Meteorology and the use of meteorological instruments, disinfection and deodorization statistics, and the prevention of some common diseases fill the last four chapters of Book I. The second book is of a more special character and is devoted to the soldier, as recruit in foreign service on board ship, and in war. This is largely written from the English standpoint, the localities of foreign service embracing the leading fields of English operations. The third book, devoted to chemical and microscopical investigations of water, air, and food products in general, is of special interest and value. The book contains numerous illustrations and a number of very interesting plates in microscopy. A reasonably full index, the table of contents, and the generally clear and classified arrangement of the book add to its value and make the work of reference easy.

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