

RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

**BEAN-HARVESTER.**—THOMAS T. BROWN, Euclid, Minn. In this harvester the beans are gathered by chutes having pairs of endless gathering-chains provided with spurs for engaging and advancing the beans along the chutes. The invention comprises, furthermore, a novel adjusting mechanism, a new arrangement of parts, and a device whereby the beans can be dumped in quantities to suit the operator.

Mechanical Devices.

**SAFETY-STOP.**—JOSHUA BAGGALEY, Manhattan, New York city. The object of the invention is to provide a simple means for preventing a reverse movement of hoisting-engines, particularly when an engine is loaded, the device employed dispensing with the foot-brakes and enabling the engineer to control the drums with the hands only. A reversing check is used which is automatically applied, rendering the overhaul easier, dispensing with the necessity of a weight upon the hoisting-rope, and enabling the drums to turn freely in overhauling. The only retarding action met with is due to the slight friction upon the shafts.

**FIRE ESCAPE.**—EDWARD M. CHRIST, Pine Grove, Penn. The apparatus is to be used for lowering objects of any kind, but is particularly adapted for use as a fire-escape. The device includes in its construction a sand-cylinder with a valve-controlled outlet, in which cylinder works a screw-driven follower actuated by the means to which the object to be lowered is attached, and serving to retard the movement of these means. The means in question also actuate the valve of the outlet of the cylinder to regulate the flow of the sand therefrom.

**AUTOMATIC WASTE-GATE.**—WILLIAM T. TAYLOR, Evans, Colo. The gate is designed to relieve surplus water in flumes and ditches to prevent overflowing. The gate comprises a gate formed in two parts, an upper cross-bar, and a main section hinged to the cross-bar and releasable by lifting slightly. A pivoted reservoir or bucket is secured to the cross-bar to lift the gate, and has its inlet at the maximum desired water-level. Hence, when the water reaches a dangerous level, the waste-gate automatically descends.

**PRESS FOR PREPARING FOMENTATIONS.**—MARY J. SMITH, Manhattan, New York city. The press is designed to express surplus liquid from flannels or other fabric adapted to be used as bandages for fomentations, and is so constructed that the hot surplus liquid may be quickly squeezed from the bandage, and the pressed bandage carried from the press to the bedside and retained in the press until required for use, thereby preventing loss of heat. The operation of pressing may also be performed at the bedside. To permit the bandage to be readily removed from the device, the plunger used in the press can be removed to expose the entire receiving-chamber. During the preparation of the bandage the hands are out of contact with the water.

**WRENCH.**—JAMES M. TILTON, Isleta, Ohio. The wrench comprises a head having teeth facing in opposite directions, and a pawl adjustable to engage either of the opposite faces of the teeth to drive the head in either direction. It is not necessary to remove the wrench from the cap in order to take a new hold; but the handle, by means of the pawl and ratchets, turns backward and forward on the head of the wrench. The wrench is adapted to fit nuts or bolts of different sizes without changing the head.

**NAILING-MACHINE.**—SAMUEL Y. PENROD, Choctaw, Mont. This machine for nailing shingles on roofs has a feed-chute and a nail-holding wheel provided with openings by which to discharge the nails to the chute, and turned by an operating pawl actuated by a rammer. Devices are provided whereby the pawl will be held from operation by the rammer when the feed-chute is full of nails. With this machine a workman can drive nails twice as fast as with a hammer, and can shingle in cold weather when the necessity of wearing gloves makes it well nigh impossible to handle shingle-nails.

Miscellaneous Inventions.

**MANUFACTURE OF ARTIFICIAL MARBLE.**—JAMES E. SUMMERS, Lynchburg, Va. The method of manufacturing marble consists in mixing together lime-water and silicate of soda, adding cement to the mixture until it is fully incorporated therewith, and finally allowing the mass to harden on a highly polished surface. The expensive method in vogue for polishing and graining the marble is entirely dispensed with, and a close imitation, both as to structure and appearance of the natural polished marble, is obtained at a comparatively low cost.

**VEIL-FASTENER.**—MARGUERITE HÉLÈNE CARTER, Manhattan, New York city. It is a matter of considerable difficulty to secure a veil that it cannot be readily lost. The present invention provides a simple and comparatively inexpensive device by means of which a veil will not only be held in the proper position and securely retained, but will also be prevented from slipping down in the rear. The fastener is composed of an anchor bent to form opposite end eyes or loops, and is held to the bonnet by intermediate prongs at the opposite sides of the anchor. Hooks engage the end eyes and are connected with the veil.

**MEASURING FAUCET.**—JOHN J. KENNELLY, Manhattan, New York city. It is the purpose of this invention to produce a faucet which shall be both simple and cheap, and which may be adjusted so that a definite amount of liquid may be drawn before its mechanism is operated to close the valve. This end is attained by means of a weighing lever, upon which a vessel is placed, designed to receive the liquor. A hand-lever is used for opening the valve, and is engaged by the weighing-lever to hold the valve open until the liquor in the vessel reaches the required weight. The hand-lever is then released and the valve closed.

**HORSESHOE.**—ERIK A. FRYDENLUND, Lakota, N. D. The shoe is designed to be secured to the hoof without the use of nails, and is provided with calks which can be quickly removed so that others of different shape or sharpness can be substituted. A clamping-band is used having its heel portions turned downward and then inward to engage the under side of the shoe. The inward-

ly-turned portions have openings for registering with openings in the heel portions of the shoe. Removable calks engage in the openings, and a clamping-strip connected with the clamping-band has its lower end turned under the toe portion of the shoe, and is furnished with an opening for registering with an opening in the shoe. A toe-calk removably engages in the opening.

**SMOKING-TUBE.**—JAMES M. EBER, Manhattan, New York city. The smoking-tube is so constructed that the bowl portion may be readily filled by forcing it endwise into tobacco contained in a package, without touching the tobacco with the hands, and is provided with a simple means for ejecting the ashes of the consumed tobacco, which means likewise provide on its exterior a long, sinuous passage which cools the smoke before it enters the mouth.

**INVOICE-FILE.**—EUGENE CROSS, Griffith, Miss. The file comprises covers within which a metal box is arranged having a swinging lid secured to one of the covers. Pins are extended from the bottom piece of the box and pass through a pressure-strip connected with a pressure-spring removably connected with the back piece of the box. In filing papers the spring and pressure-strip are removed. After placing the papers on the pins, the pressure-strip and spring are replaced.

**HOLDER OR BUCKLE FOR STIRRUP-STRAPS.**—OLIVER K. BURNHAM, Palouse, Wash. The holder has two sections adapted to hold a strap between them, each being provided with a rigid hook and pin. The sections move together respectively to engage the hooks with the pins, thus holding the sections in engagement. The sections are link-connected. Owing to the link connection, the sections may be separated and carried in parallel lines, one beyond the end of the other, thus enabling the stirrup-leather to be readily introduced between the sections and the retaining-pins passed through the stirrup-leather. After adjustment, the two sections are brought together and the parts properly connected.

**RUFFLED TUCKING.**—WILLIAM BOWDEN, Manchester, England. By means of the improvements devised by this inventor any suitable fabric can be readily converted into a suitable trimming for use on ladies' and children's garments for decorative or other purposes. The ruffled tucking comprises a fabric material formed with one or more rows of gathered tucks. Shirrs extend transversely to the tucks; and a binding holds the shirrs and gathered tucks in position, the binding consisting of rows of locked stitches parallel to the tucks.

**NIPPLE-HOLDER.**—THOMAS BORCHER, Jersey City, N. J. The object of the invention is to provide a holder for blind nipples used by teething children and so to construct the holder that when the nipple is secured thereto the nipple cannot be separated from the holder unless it be purposely removed. One end of the nipple is passed through a button and is engaged by the screw-threaded outer end of a bore or chamber in a holder. The holder is arranged for engagement with the open end of the nipple, and a tubular pin has a head arranged within the nipple above the button, the pin below the button having a thread screwing into the bore or chamber of the holder.

**BARREL.**—JULIUS F. VOGT, St. Louis, Mo. This invention provides a barrel adapted to contain perishable goods and involves a peculiar construction by which the barrel is furnished with a double sheathing or wall, thus providing a space surrounding the inner sheathing or wall, in which space non-conducting material may be packed in order effectually to protect the contents of the barrel.

**CARPET-FASTENER.**—JESSE F. VAN WICKEL, Jr., Jersey City, N. J. The fastener is designed to fasten carpets to marble or other floors where it is impossible to drive tacks. The fastener comprises a tube secured in the floor and a collar provided with a main and counter bore, the upper end of the tube being received in the lower portion of the counter bore of the collar. A yielding ring in the upper portion of the counter bore of the collar bears against the upper extremity of the tube. A button shank fits in the main bore of the collar and into the upper end of the tube, and has an annular groove receiving the yielding ring, so as to hold the button in place. The ring is caused first to spring over the lower portion of the shank and next to contract in the groove, thus firmly holding the button in the collar and securing the carpet.

**WHIP-SUPPORT.**—PRESTON V. STUMP, Chama, Territory of New Mexico. The whip-support is especially adapted for a harvester or binder and is so constructed that the ordinary carriage-whip may be securely held in position for immediate use. By the manipulation of a handle, the whip may be carried over either one of the animals of a team and the whip-socket drawn downward to bring the lash into contact with the animal. The body of the device is placed high enough not to interfere with the driving-reins.

**WATER-FILTER.**—CARL SALZBERGER, Burgsteinfurt, Prussia, Germany. To purify water containing mud and sand, this inventor employs a stationary central tube with an opening therein. On the tube a filter-casing is mounted to turn, having a number of filter-chambers. Screens are fitted in and form walls for the chamber, and are adapted to hold the filtering material between them. Means are provided for closing the chambers whereby one chamber may be used to the exclusion of the others.

**THRILL-COUPLING.**—THOMAS E. PIPER, Blairsville, Pa. Besides securely holding the thrill, the device of this inventor can be readily applied or removed, whereby it overcomes the defects of many old constructions. The thrill-coupling has a body-portion with a beveled hook. A latch-section is mounted to swing on the body-section and has a beveled end matching with the beveled end of the hook. A dog acts between the latch and body sections and serves to hold the two sections in locked position. Merely by operating the dog the coupling can be opened.

**VEHICLE-BODY.**—FREDERICK MENZER, Flint, Mich. The object of the invention is to provide a body of simple construction so arranged that it may be easily changed from a single to a double-seated vehicle or from a double to a single-seated vehicle. A box-like body portion is employed in which a sliding seat is arranged. A front or auxiliary seat has double-hinged connection with the body and rests on projections on the sides of the body. The auxiliary seat when swung up converts

the carriage into a two-seated vehicle, and into a one-seated vehicle when swung down.

**PROCESS OF TREATING GOLD AND SILVER ORES.**—JOSEPH SMITH, Salt Lake City, Utah. The process consists in mixing the material to be treated with caustic lime, saturating or covering the mixture entirely with water and keeping it thus until all the acid present has combined with the lime, drying the material, exposing it to the action of atmospheric air, and treating it with a cyanid. The object of the preliminary treatment is to neutralize all acids present and to remove the compounds formed that may consume potassium cyanid before the material is subjected to the action of the potassium cyanid.

**MEANS FOR HEATING APPLICABLE TO FORGES.**—HENRY B. BURIN, Mons-en-Barœul, Nord, France. The heating-cavity is formed partly in a stationary section and partly in a movable section which can be slid toward and from the former by an adjusting device consisting of a rack and coating gearing, the object being to enable the heating-cavity to be enlarged or decreased in size without materially changing the general shape. The cavity is left open at one side for the convenient insertion of tools. Each section carries its own heating device.

Designs.

**GRAVITY-LATCH FOR WINDOW FASTENERS.**—WILLIAM L. and CHARLES T. FIELDS, Cedar Bluff, Va. This gravity latch is adapted to be used in connection with a rack-bar patented by the same inventors. The latch is pivoted on a window and is curved so as to bring its free end into engagement with the teeth of the rack-bar to hold the sash raised at various elevations. The rear side of the latch is flat, while the opposite side is convex.

**FUNNEL FOR CHAIN PUMPS.**—DANIEL D. ELDRIDGE, Bedford, Ind. This inventor has produced a new funnel for the tubing of a chain pump. The funnel is curved and has a bell-shaped mouth so that the buckets can pass freely into it, while at the top are formed diametrically opposite lugs adapted to enter slots in the lowermost section of the tubing, the funnel being then turned so as to take the lugs out of registry with the slots to hold the funnel in place.

**HOE.**—DANIEL H. BAUMGARDNER, Brookville, Pa. The hoe is made heart-shaped so as to provide a sharp picking point and curved, sharp edges.

**PILLOW-TOP.**—RAFFAELLO ASTARITA, Manhattan, New York city. The inventor has designed two pillow-tops both representing negroes in a cake-walk. The designs differ both in the attitude and number of the persons and the phase of the cake-walk represented.

**NOTE.**—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

NEW BOOKS, ETC.

**DETAILS OF BUILDING CONSTRUCTION.** By Clarence A. Martin. Boston: Bates & Guild Company. 1899. Quarto, 33 plates. Price \$2.

The architect, particularly the young architect, has probably felt many times the need of simple drawings of details of American houses. There are, of course, books which give these details, but we do not remember any which is of such value as the present work. The volume is of sufficient size to enable the details to be shown on a comparatively large scale. The selection is a most admirable one, and the author who is Assistant Professor of Architecture at Cornell University, is au courant with the needs of architects.

**FUNDAMENTAL LAWS OF ELECTROLYTICAL CONDUCTION.** Memoirs by Faraday, Hettorf, and Kohlbrausch. Translated and edited by H. M. Goodwin, Ph.D. New York: Harper & Brothers. 12mo. Pp. 98. Price 85 cents.

In the present volumes are collected those papers on electro-chemistry which contained the original statement of fundamental laws and experiments on which the modern theory of electrolytical conduction is based. It consists of three memoirs by great physicists carefully edited and translated and accompanied by an excellent bibliography.

**SOME MEMORIES OF A MINER'S LIFE.** Or, Five Years on the Gold Fields of New Zealand. By Mathew C. McKeown, Barnesville, Ohio.

This is a description of the trials and hardships of a gold miner in far-away New Zealand. It will undoubtedly prove interesting to all who have ever engaged in mining.

**TRANSACTIONS OF THE WAGNER FREE INSTITUTE OF SCIENCE OF PHILADELPHIA.** Vol. VI. 1899.

The present volume is devoted to "The Selenodent Artiodactyls of the Uinta Eocene." This is a valuable monograph by Professor Scott, of Princeton University, and is accompanied by excellent lithographic plates.

**ELEMENTARY ILLUSTRATIONS OF DIFFERENTIAL AND INTEGRAL CALCULUS.** By Augustus De Morgan. Chicago: Open Court Publishing Company. 1899. Pp. 144.

This work forms, quite independently of its interest to professional students of mathematics, an integral portion of the general educational plan which the publishers have been systematically pursuing. It is a subject which cannot fail to interest those who have made any progress in the study of the calculus.

**THE EVOLUTION OF GENERAL IDEAS.** By Th. Ribot. Chicago: Open Court Publishing Company. 1899. 16mo. Pp. 231. Price \$1.25.

The principal aim of this work is to study the development of the mind as it abstracts and generalizes and to show that these two operations exhibit a perfect evolu-

tion; that is to say, they exist already in perception and advance by successive and easily determined stages to the more elevated forms of pure symbolism accessible only to the minority. The volume is a resume of lectures which the author has given at the College de France in 1895. It is a most interesting work on psychology.

**STATISTICS AND ECONOMICS.** By Richmond Mayo-Smith, Ph.D. New York: The Macmillan Company. 1899. 8vo. Pp. 467. Price \$3.

This is the second part of "The Science of Statistics" published for the Columbia College Press. The present volume deals with consumption and production, exchange and distribution. It is beautifully printed and attractively bound. The author is a well-known authority on political economy and is professor of that science in Columbia University. The selection of facts has been made with care and has been well collated and the deductions drawn therefrom are as authoritative as any can be in the science, which cannot be termed exact. It is a book which will prove interesting to the general reader.

**THE SECOND LAW OF THERMODYNAMICS.** Memoirs by Carnot, Clausius, and Thomson. New York: Harper & Brothers. 1899. 12mo. Pp. 151. Price \$1.

Like the other books of this series of scientific memoirs this book is a collection of some of the valuable scattered papers on one of the most important subjects of modern physics.

**THE LAWS OF GASES.** Memoirs by Robert Boyle and E. H. Amagat. Translated and edited by Carl Barus. New York: Harper Brothers. 1899. 12mo. Pp. 110. Price 85 cents.

This belongs to the series of scientific memoirs edited by Prof. J. S. Ames, Ph.D. It is almost needless to say that two of the greatest classical papers in the whole domain of physics are here presented in an excellent translation carefully edited. Everything about the make-up of the book in the way of tables, illustrations, etc., are excellent. It is a most important book of an important series.

**NOTES SUR L'AGRICULTURE AUX ETATS-UNIS.** Par P. de Vuyst, Docteur en droit, Ingénieur agricole, Inspecteur de l'Agriculture. 2me edition. Paris: Octave Doyn. Gand: A. Siffer. 1899.

**POTABLE WATER AND METHODS OF DETECTING IMPURITIES.** By M. N. Baker, Ph.B., C.E. New York: D. Van Nostrand Company. 1899. 16mo. Pp. 97. Price 50 cents.

The need of a concise non-technical work on drinking water has been made apparent; there is no dearth of literature on the subject but the works nearly all deal with the subject from the standpoint of the chemist and the sanitarian. Those about to build houses will find their questions regarding drinking water answered in this little book.

**THE SLIDE VALVE SIMPLY EXPLAINED.** By W. J. Tennant. Revised and enlarged by J. H. Kinealy, D.E. New York: Spon & Chamberlain. 1899. 16mo. Pp. 83. Price \$1.

The slide valve is a great stumbling block to young mechanical engineers, and the lucid explanations and diagrams in this book will prove very valuable to them and to the practical engineer as well, who may have a knowledge of what to do to run his engine economically, but who desires some theoretical instruction as well.

**DARWINISM AND LAMARCKISM OLD AND NEW.** Four Lectures by Frederick Wollaston Hutton, F.R.S. New York: G. P. Putnam's Sons. 1899. 12mo. Pp. 226. Price \$1.

It is the author's aim to give a popular exposition of the Darwinian doctrines in language which can be readily understood by the lay reader. It is useless for the young student to consult the classic writings of Darwin without some kind of preparation, like the perusal of the present admirable book.

**HANDBOOK OF OPTICS FOR STUDENTS OF OPHTHALMOLOGY.** By W. N. Tuter, B.A., M.D. New York: The Macmillan Company. 1899. 12mo. Pp. 209. Price \$1.

Herein is presented so much of the science of optics as pertains directly to ophthalmology. The demonstrations given require no knowledge of mathematics beyond that of simple algebraic equations and the elementary truths of geometry. It is a simple and adequate treatment of a difficult subject.

**SMALL ENGINES AND BOILERS.** By Egbert P. Watson. New York: D. Van Nostrand & Company. 1899. 12mo. Pp. 108. Price \$1.25.

This is a manual of concise and specific directions for the construction of small steam engines and boilers of modern types, from five horse power down to model sizes, for amateurs and others interested in such work. It is admirably illustrated by working drawings fully lettered. The author is a practical man and has acquired himself with credit in the little volume.

**NOTES ET FORMULES DE L'INGÉNIEUR DU CONSTRUCTEUR-MÉCANICIEN DU MÉTALLURGISTE ET DE L'ELECTRICIEN.** Paris: E. Bernard et Cie. 1900. 16mo. Pp. 1478.

A most valuable engineer's pocketbook filled with useful formulas and tables. Like all foreign books of this nature it is rather poorly gotten up. In this country no technical books can vie with the so-called "pocket-books" for excellence of typography, printing, paper and binding.