RECENTLY PATENTED INVENTIONS.

Engineering Improvements.

ROTARY ENGINE. — HENRY F. FARLEY, Kalona, Iowa. The piston of this rotary engine has a yielding piston-head. In the cylinder a valve-abutment is mounted, having a cam-surface for pressing the piston-head. The abutment is hollow, is connected with the steam supply, and is arranged to open into the cylinder. Slide-valves control the amount of steam passing from each abutment into the cylinder at the time an abutment is in an inactive position. The engine is characterized by its simplicity and durability.

Mechanical Devices.

TURBINE WATER-WHEEL.—WILLIAM W. TYLER, Dayton, Ohio. By reason of the improvements made by the inventor the cylinder-gate is completely balanced, and the pressure of the water tends neither to open nor to close the gate at any point of its position. The course of the water through the chutes is always smooth, and the water is not obstructed by the sharp edges of the gate projecting in the water course. Hence, the full power of the waterhead is utilized to the greatest profit.

MACHINE FOR MAKING PASTED TUBES FOR CIGARETTES.—ANATOLE BENOÎT, JULIEN GUÉNIFFET, and JULES NICAULT, Rue Daguerre, Paris, France. The improvements which form the subject of the present invention consist notably in the particular construction of a tube-forming device, of a paste-distributer, and of a tucking device. These devices are combined so as to form a machine for producing a cigarette-tube which is pasted and closed at one end.

MOVABLE REGULATING RAIL FOR PIANOS.—VETAL BESSIER, 677 MacDonough Street, Brooklyn, New York city. In grand pianos, when the hammer strikes two strings in obedience to the pedal action, the hammer-felt is cut in; and when the hammer subsequently strikes the three strings the tone produced is uneven, as the third string receives a harder blow than the other two. In upright pianos the hammer-rail is moved toward or from the strings by the soft pedal—an arrangement which is defective since the lever on the hammer-butt is cut and worn in a very short time. To overcome these defects the inventor has devised a means for varying the distance between the heels of the jacks and the buttons in the rail. A richer tone is thus obtained—a tone which is permanent.

DUMPING-SCOW. — JOHN M. GOODWIN, Manhattan, New York city. The inventor has provided a simple means for causing the discharge and for preventing the careening of the scow. Cargo-carrying compartments of V-shaped cross section are provided.

SAWMILL.—JAMES L. GRANT, Johnson City, Tenn. By means of this sawmill quarter-sawed wood can be more effectively produced. A carriage is employed on which a log is held to turn around its longitudinal center, and a saw is arranged to cut radially into the log from the outer surface to a point near its center. With this machine a log can be sawed into fourteen sector-like parts. These parts can be cut into planks, each a full broad figure quarter-sawed.

EXPANSIBLE PULLEY.—JOHN W. HILLAND, Manhattan, New York city. The purpose of this invention is to construct a simple form of expansible pulley and to provide a means practically constituting a portion of the pulley whereby the driving-face may be quickly and conveniently increased or decreased in diameter, thus obviating variable motion.

CONVEYER MECHANISM.—DR. SAMUEL M. JENKS, Madison, So. Dak. In the construction of the Jenks system of overhead-track, overhead-carrier, and overhead conveying mechanism, a radical departure has been made from similar contrivances. The most striking feature is to be found in the haul-rope. A permanent loop is made in the haul-rope; and this feature is the basic principle of the whole system. By reason of this permanent loop a direct draft is obtained in lifting the load. The merits of the direct draft are too obvious to require extended comment. The permanent loop is used in connection with a novel automatic interlocking sling-pulley. By reason of this pulley the amount of haul-rope required is reduced by 16 to 18 feet; friction is lessened; the haul-rope is prevented from twisting; the force necessary to return the empty sling and carrier, and bring the sling back to the load is diminished; and the strain on the haul-rope is so relieved that the two sections of the pulleys separate of their own weight. The Jenks steel-bar track differs from other tracks in so far as both legs of the angles are supported, stiffening the track far more than usual.

BICYCLE-RACING MACHINE. — JOSEPH MATTHEWS, New Bedford, Mass. The purpose of the invention is to provide an apparatus for enabling bicycle-races to be conducted in a limited area, without the necessity of the machines' actually traveling over the distance supposed to be covered in the race. This end is attained by mounting the machines so that they do not move bodily and by transmitting the movement of a rapidly-spinning driving-wheel to a dummy-machine which travels on a small track. By these means the racing effect is obtained.

APPARATUS FOR UNLOADING CARS.—WATSON BATCHELOR, Manhattan, New York city. The apparatus comprises a cradle poised at its middle and provided with a weight, the parts being arranged so that when a loaded car is run on the cradle the weight of the car will tilt the cradle. The car is thus thrown into an inclined position, whereupon the load may be discharged. When the car is unloaded the weight at the end of the cradle will assert itself to throw the cradle and car back to the horizontal position. The apparatus is particularly adaptable to unloading freight-cars into vessels.

Miscellaneous Inventions.

RAZOR-STROP. — WILLIAM G. MOSIER, Greenville, Miss. By means of the device invented by Mr. Mosier, a number of strops may be held so that when one strop is in use the others will not interfere with the operation of stropping the razor. Each strop may be turned readily from side to side so that the razor may be applied to either face.

TREE-PROP BRACKET.—ROBERT S. MCINTYRE, Riverside, Cal. The tree-prop bracket is arranged for movable attachment to a supporting-post at any desired point, and is adapted properly to engage and securely to hold the branch of a tree. The branch of a tree is not liable to be cut or chafed while it is supported.

AUTOMATIC BIB OR WATER-COCK.—DANIEL H. STREEPER, Norristown, Pa. The object of the invention is to provide a construction whereby the water-valve will be automatically operated by the water-pressure. The bib or cock is so constructed that it can be readily taken apart for cleaning. The construction is simple; the operation is efficient. Means are provided for regulating the flow of water.

SEALING-BUCKLE.—AMBROSE F. THOMPSON, Hunter's Hill, New South Wales. The buckle is to be used on mail-bags, and is constructed so that the strap securing the contents of the bag cannot be unbuckled without breaking the seal. A buckle of ordinary construction underlies a metal bed for sealing wax, the bed having a flat floor and sides slightly raised so arranged that the buckle cannot be opened without breaking the wax.

NON-RESEALABLE BOTTLE.—FRANK M. WEIR, Monmouth, Ill. The inventor has provided a bottle, jug or jar with a simple means for sealing it after the original filling. When the bottle or jar is open the vessel is so disfigured that the rights of the dealer are fully protected and the purchaser insured from dishonest practices. The neck of the vessel is so constructed that an ordinary cork cannot be placed therein.

COT.—ALBERT A. GREGG, Buffalo, Wyo. Mr. Gregg has provided a cot which can be readily folded, and which, when extended, will form a more secure structure than the cots heretofore constructed. The cot is so made that it can be readily folded or set up for use.

ROLL FOR ROLLING-MILLS. — CASPAR HUESER, Bruckhausen, Prussia, Germany. A core consisting of a tube of steel having a thin wall is arranged within the roll body and welded therewith. The core of the tube is cut a suitable length, and, when in place within the roller, projects at both ends outward, so that the projecting parts may be pressed at their extreme ends into the shape to fit coupling-crosses. The rest of the parts may be employed as journals. The rollers are cooled from the inside. The weight of the rolling-train is reduced; for the new rollers are considerably lighter than the old.

LAMP.—CHARLES E. GERVAIS, Manhattan, New York city. An electric battery is used in connection with this lamp, a heat or resistance coil being employed to ignite a primary wick, the flame of which is instantly communicated to the illuminating-wick. As soon as the illuminating-wick is ignited the current from the battery is switched off and the flame of the primary wick automatically extinguished.

BINOCULAR MICROSCOPE.—JOSEPH KROULIK, Rochester, N. Y. The optical axes of the two object-glasses intersect upon the stage. The distance between the two eye-pieces corresponds with the distance between a man's eyes. Each object-glass is provided with a separate tube in which a mirror is located to deflect the rays condensed by the object-glass to the eye-piece by a single reflection. Very effective stereoscopic vision and high magnifying and dissolving power are thus obtained.

NUT-LOCK.—EDWARD R. CAMPBELL, East Ryegate, Vt. The nut-lock comprises a nut with a pawl in the nut designed to engage teeth on the thread of a bolt whereon the nut is screwed. A second pawl in the nut is arranged to engage teeth on the material to be secured by the nut and bolt.

FEED-BAG. — GEORGE A. CARLETON, JR., Edgewater, N. J. To avoid the great loss of feed occurring when bags of ordinary construction are employed, Mr. Carleton has devised a false bottom which is fed steadily upward toward the horse's mouth so as to keep the feed easily in reach of the animal and to avoid the necessity of the animal's throwing the bag up ward to reach the feed.

MARKING-TOOL. — MICHAEL M. CLARKE, Farmington, New Mexico. The marking-tool comprises a shank having a head at one end which terminates in a point and has its end face beveled. The cutting-lip on the head extends from the point rearwardly along one side of the head. The tool is arranged to make a perfect mark on the wood when drawn along the edge of a carpenter's square, straight edge, or like instrument.

MAIL-BOX.—WESLEY O. ROWE, Yonkers, N. Y. The object of the invention is to provide in connection with a mail-box a simple means for canceling the postage-stamp and otherwise marking the envelop while passing into the box. The operation of canceling a postage-stamp by this device is practically automatic. The time and expense now required for canceling stamps after collecting the letters are obviously saved.

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.

ELECTRICAL DESIGNS. Comprising Instruction for Constructing Small Motors, Testing Instruments and Other Apparatus. With Working Drawings for Each Design. New York: American Electrician Company. 1901. 8vo. Pp. 262. Price $2.

A thoroughly practical book with working drawings on a satisfactory scale. The descriptions are clear and concise, putting the book in the class which is earnestly desired by electricians. It is illustrated by 289 figures.

THE PRACTICAL ENGINEER ELECTRICAL POCKETBOOK FOR 1901. Manchester, England: Technical Publishing Company. 1901. Pocketbook form. Pp. 292. Price $1.

Works of this class are numerous, but there always seems to be room for another. The first issue of this book was well received last year. Considerable care and labor have been expended upon the present issue to make it even more worthy of popular favor. The tables will prove of special value.

ELEMENTARY ORGANIC ANALYSIS. DETERMINATION OF CARBON AND HYDROGEN. By F. G. Benedict, Ph.D. Easton, Pa.: The Chemical Publishing Company. 1900. 12mo. Pp. 186. Price $1.

This little manual is presented in the hope that the descriptions and processes here recorded will aid in making the method of analysis by organic combustion more familiar and more satisfactory.

TAXIDERMY. Edited by Paul N. Hasluck. London and New York. 1901. 16mo. Pp. 160. Price 40 cents.

The little volume comprises the skinning, stuffing and mounting of birds, mammals and fish. It does not, of course, compare with the sumptuous works of Hornaday and other American writers, but it will doubtless prove useful to amateurs who do not wish to carry their knowledge of the art very far.

FIELD MANUAL FOR ENGINEERING. By Philetus H. Philbrick, C.E., M.S. New York: John Wiley & Sons. 1901. 16mo. Pp. 401. Morocco, gilt. Price $3.

The aim in this work has been to present the subjects of the text in a mathematical and logical order, to classify all problems presented, and to express the resulting formula of every problem in the form requiring the least numerical computation; to furnish a large number of useful tables, and to treat the general problem of railway engineering more extensively than other similar works have done. The author has accomplished his task in an admirable manner.

MUNICIPAL ACCOUNTING. By F. H. Macpherson, C. A. Detroit, Mich.: The Bookkeeper Publishing Co., Ltd. 1900. 8vo. Pp. 46.

A comprehensive treatise on the subject of municipal accounts is here presented, illustrated by specimens of improved forms of books and reports, including sinking-fund and instalment, or annuity tables, for terms of two to thirty years, at rates of interest from 2 to 6 per cent, and other labor-saving tables.

A GLOSSARY OF BOTANIC TERMS, WITH THEIR DERIVATION AND ACCENT. By Benjamin Baydon Jackson. London: Duckworth & Co. 1900. Philadelphia: J. B. Lippincott Co. 12mo. Pp. 327. Price $2.

Neither the typography nor printing of this book is comparable with the text. A good glossary of botanical terms in handy form is badly needed, and the volume before us seems to have been prepared with great care.

DER GIPS UND SEINE VERWENDUNG. HANDBUCH. Für Bau- and Maurermeister Stuccateure, Modelleure, Bildhauer, Gipsgeiser u. s. w. Von Marco Pedrotti. 45 illustrations. Vienna: A. Hartleben. 1901. 16mo. Pp. 264.

The production of formaldehyde in the last few years has increased enormously; Germany alone produces yearly an enormous quantity, fully half of which is employed in the manufacture of anilin, while the remainder finds use in tanneries and paper factories. The present work is especially designed to meet the requirements of the chemist, physician-apothecary, and the technical manufacturer. The work explains clearly and concisely the method of manufacturing formaldehyde, its properties, and particularly the various uses to which the product may be put.