

Apple Gases.

Bender has experimented with ripe apples and obtained gases from them in the following proportions: 31.07 per cent carbonic acid gas, 68.93 per cent nitrogen gas. He believes that a fermentation is produced at the time of ripening, from which fermentation the carbonic acid gas results.

THE way to wash silk is to spread it smoothly upon a clean board, rub white soap upon it, and brush it with a clean hand brush.

NEW BOOKS AND PUBLICATIONS.

A NEW MONETARY SYSTEM, THE ONLY MEANS OF SECURING THE RESPECTIVE RIGHTS OF LABOR AND PROPERTY, AND OF PROTECTING THE PUBLIC FROM FINANCIAL REVOLUTIONS. By Edward Kellogg (from his work on Labor and Capital). Edited by his Daughter, Mary Kellogg Putnam. Fifth Edition. By mail \$1.50, free of postage. Philadelphia, Pa.: Henry Carey Baird & Co., 406 Walnut street.

This book contains many original ideas on the subjects of banking and currency, and gives forth many paucares for the evils of poverty, hard work, and short pay. We do not think it will convert any one to the belief that the laws of Nature and of supply and demand can be successfully abrogated by special legislation, however specious such law-making may be; but as the production of a sincere and very discursive thinker, the volume demands the attention of students of its subject, which is daily growing in importance to the future of this country.

UNITED STATES HARDWARE AND METAL TRADES' DIRECTORY, comprising a Complete List of the Manufacturers, Importers, Wholesale and Retail Dealers, Commission Merchants, etc., in the United States and Territories. Price \$6.00. Boston, Mass.: Greenough, Jones, & Co.

This book is a most useful compilation, and appears to contain all the information stated in its very comprehensive title. The various trades, including agricultural implement makers, bell founders, boiler makers, engine builders, plumbers, and every other branch of the metal-working business, are arranged alphabetically by State, business headings, towns, and names. Much labor and care have evidently been spent on the work, which appears to be authentic in every particular.

THE METRIC SYSTEM OF WEIGHTS AND MEASURES. By J. Pickering Putnam. New York city: Hurl and Houghton.

Mr. Putnam places the advantages of the decimal or metric system before his readers with much clearness and force; and although the two sides of the question are very generally understood, it is well to keep the subject before the public. If ever the nations adopt any uniform system, there is little doubt that the French plan will be the basis of it; and of this, even the opponents of that system are tolerably well convinced.

WOODEN AND BRICK BUILDINGS, WITH DETAILS, CONTAINING ONE HUNDRED AND SIXTY PLATES OF PLANS, ELEVATIONS, VIEWS, SECTIONS, AND DETAILS OF VARIOUS STRUCTURES. With Specifications, Forms of Contract, Schedule of Prices, etc. Published Under the Direction of A. J. Dicknell. Volume II. New York city: A. J. Dicknell & Co., Architectural Publishers.

We recently reviewed this handsome work, on the issue of the first volume; and have now to acknowledge the receipt of Volume II, which completes one of the most useful and valuable works on practical architecture ever issued from the press.

WAGGENER'S STANDARD WAGES TABLES, showing Computations of Wages for Any Number of Hours, from One to Sixty. Compiled by D. B. Waggener, Author of "Book-keeping Simplified," "Improved Trial Balance Book," etc. Price \$1. Philadelphia, Pa.: D. B. Waggener & Co.

A complete ready reckoner for all wages calculations, compiled with great care and arranged in a most convenient form.

A SERIES OF AMERICAN CLINICAL LECTURES. Edited by E. C. Seguin, M.D. Volume I, No. 3. Containing "Pneumo-Thorax," by Austin Hunt, Sr., M.D., Professor of Medicine at Bellevue Hospital Medical College. Price 40 cents. New York city: G. P. Putnam's Sons, Fourth avenue and 23d street.

This continued publication is likely to prove of special value to students of medicine, and the various essays are especially intended to be trustworthy guides to practice. Not only are the views of the lecturers given *in extenso*, but the latest authoritative opinions on the therapeutics and pathology of each case are combined in each issue, which is complete in itself.

THE POPULATION OF AN APPLE TREE. By A. S. Packard, Jr., Editor of "The American Naturalist," Author of "Guide to the Study of Insects," etc. Price 25 cents. Boston, Mass.: Estes and Lauriat, 143 Washington street.

A valuable contribution to popular entomological science, deserving to be read by all cultivators of fruit.

THE GLACIAL EPOCH OF OUR GLOBE. By Alexander Braun. Price 25 cents. Boston, Mass.: Estes and Lauriat.

We have here a very readable account of the much vexed question of the glacial theory, which is pointedly written and well illustrated.

SIXTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS. Boston, Mass.: Wright & Potter, 79 Milk street.

THE RESOURCES AND MANUFACTURING CAPACITY OF LOWER FOX RIVER VALLEY, APPLETON, WISCONSIN. By A. J. Reid, Editor of the "Appleton Post." Appleton, Wis.: Reid & Miller.

MISCELLANEOUS ROLLING MILL INFORMATION. No. 10. Pittsburgh, Pa.: J. L. Lewis.

Inventions Patented in England by Americans.

(Compiled from the Commissioners of Patents' Journal.)
From March 9 to March 29, 1875, inclusive.

AXLE BEARINGS, ETC.—E. D. Murfey, New York city.
BOSSIN WINDER.—M. Cook, Ashfield, Mass., *et al.*
BOOT TIPS.—E. Mayne, Boston, Mass.
BRACE, SIGNAL, ETC.—J. Y. Smith (of Pittsburgh, Pa.), London, England.
BUTTON NEEDLE, ETC.—G. Norwood, Boston, Mass.
BUTTER TUB.—C. B. Sheldon, New York city.
COFFEE PULPING MACHINE.—W. V. V. Lidgerwood, Morristown, N. J.
FORMING PULP INTO BOXES, ETC.—S. Wheeler *et al.*, Albany, N. Y.
GAS BURNER.—J. Ellis, Lynn, Mass.
GRINDING MACHINERY.—C. Van Haagen, Philadelphia, Pa.
HOBBIERY SEWING MACHINE.—W. Pearson, Philadelphia, Pa.
INJECTOR.—S. Rue, Philadelphia, Pa.
MOTOR.—J. M. Cayce, Franklin, Tenn.
MUSIC BY ELECTRICITY.—E. Gray, Chicago, Ill.
PAPER BOX MACHINE.—P. B. Machine Co., Cleveland, Ohio.
PHOTOGRAPHIC PLATE.—H. Hill *et al.*, Worcester, Mass.
RAILWAY WHEEL.—R. N. Allen, Hudson, N. Y., *et al.*
ROLLER SKATE.—G. Pettitt, Oakland Point, Cal.
ROTARY ENGINE.—W. V. V. Lidgerwood, Morristown, N. J.
SCREW GEAR AND STEERING APPARATUS.—D. N. B. Coffin, Newton, Mass.
SCREW MACHINERY.—C. M. Spencer, Hartford, Conn.
SOAP.—S. S. Lewis (of Boston, Mass.), *et al.*, London, England.
SPINNING HEMP, ETC.—J. Good, Williamsburgh, N. Y.
STEAM ENGINE, ETC.—G. B. Dixwell, Mass.
STOCKING SUPPORTER.—A. H. Cramp, New York city.
TELEGRAPH.—M. Gally, Rochester, N. Y.
UMBRELLA.—U. G. Steinmetz, Philadelphia, Pa.
WEST STOP MOTION.—T. Isherwood, Westbury, R. I.
WOOD FLAYER.—D. L. Toppan, Somerville, Mass., *et al.*

Recent American and Foreign Patents.**Improved Bucket Ear.**

James D. Field, Blue Rapids, Kan.—This bucket ear is constructed of a continuous piece of sheet metal, which is folded with a central rib, that is perforated for the bail, the side plates being attached to the bucket.

Improved Machine for Shearing Metal.

John Walsh and James Dutot, Newton, Iowa.—This device is so constructed that, by a down pressure, the lever will exert a constantly increasing force upon the jaw, and act upon the principle of the knuckle joint. The lower jaw hangs loosely on the fulcrum pin, with the outer end resting on a wedge. This wedge is moved back and forth, to open and close the shears, and act only on the lower jaw.

Improved Wagon Brake.

Lewis B. Morgan, West Liberty, W. Va.—The invention relates to that class of automatic wagon brakes wherein the weight applies the brakes through a sliding reach, and consists in combining with the ordinary brake lever and axle an end-slotted reach with an end eye, a rod, lever, and arc rod.

Improved Car Coupling.

Charles Hobzner, Louisville, Ky.—The invention relates to that class of car couplings in which no pin or link is used but a pivoted hook, that passes over a shoulder of the opposite car, and couples automatically. The invention consists in a lever upheld at its rear by a spring support, a push bar having a crosspiece supported by springs, and in a peculiar device by which the cars may, with great facility, be uncoupled from the car or from either side.

Improved Bedstead Fastening.

Louis Guilenot, Baltimore, Md.—The object of this invention is to provide a fastening for bedstead rails and all kinds of frame work which are to be detachably connected. It consists in a short bolt having at one end a screw thread and nut, and a squared end to receive a wrench, and at the other a right angular groove. Said bolt is placed longitudinally in one portion of the frame, and is held therein by the said nut, which engages with the side of a recess, the grooved end of the bolt entering a detachable plate in the other portion of the frame work, which is provided with a lug or extension which moves in the said groove, and when the bolt is turned, draws and locks the two portions of the frame securely together, the nut serving to tighten the devices as they may from time to time require it.

Improved Plow.

B. S. Benson, Baltimore, Md.—The invention consists in combining with a plow a set of wheels placed at an inclination to a vertical plane and provided with a groove upon their peripheries, which receives and runs upon the projecting edge of the unplowed ground.

Improved Ash Sifter.

Frederic Anthes, New York city, assignor to Theodore Wenk and Samuel Leber, of same place.—The invention relates to connecting the sections composing the body of the sifter to the circular ends thereof by means of slotted lugs and clamping bolts, also to the construction whereby the removable door section of the sifter is attached and held in place. By this construction the various parts of the sifting cylinder can be very easily and quickly put together and taken apart, and the sifter can be cheaply made.

Improved Spring Bed Bottom.

Edward P. Bennett, Elkland, Pa.—The present invention relates to new and useful improvements in spring bed bottoms, and consists in springs attached to the head and foot boards, having eyes which hold rods, and in a series of solid spring slats, slotted at the ends to receive the rods, the said rods being divided or split, and having central springs.

Improved Neck Tie.

Alden J. Adams, New York city.—The object of this invention is to prevent the slide of a cravat from slipping down while the said cravat is being worn. It consists in the combination of a flap, provided with a hook and eye or other fastening with the body of the slide.

Improved Wardrobe Bedstead.

Robert G. McClure, Jamestown, O.—This consists of straps for the purpose of holding the bed, and preventing it from bulging when turned up, the same being stiffened in the middle, while their ends remain flexible, and are provided with loops that fasten over knobs on the side boards of the bed bottom.

Improved Cloth-Shearing Machine.

Isaac L. Holmes, Saco, Me.—The first part of this invention consists of an automatic feed-regulating apparatus, whereby the cloth is delivered to the machine, so that it has a uniform tension while passing through it, not subject to the unequal pulls and strains common to the cloth when drawing into the machine. The second part consists of an automatic contrivance, whereby the revolving cutters are stopped by a seam when it approaches them, and allowed to rest until the seam passes, and then set in motion again, as it passes away from them, to protect the cutters from the effects of the extra thickness of the seam, and to prevent the seam from being cut. The third part of the invention consists of the bed pieces of the stationary knives pivoted to the frame, so that these knives can be readily swung up away from the revolving knives to facilitate the cleaning of the latter of the oil and emery used in sharpening them.

Improved Casting of Steel-Faced Anvils.

John Donovan, Carpentersville, Ill.—This consists in a wire loop in the horn of the plate, for keeping it in place in the mold, and in constructing the face plate concave on the side receiving the iron, to compensate for the greater shrinkage of the iron in the middle.

Improved Railroad-Car Truck.

Alonzo Gilman, Lewiston, Idaho Ter.—This invention consists of the application of one double flanged wheel and one plain or flat rimmed wheel to the same axle of a railroad car truck. It also consists in an alternate arrangement of these wheels on adjacent axles, so that both rails are utilized, and the cars are kept properly on the rails.

Improved Barrel Barrow.

James Harding Brown, Porter's Mills, Wis.—This is an improved barrow for carrying barrels and other things, which may be used as a wheel barrow or as a hand barrow. It may be expanded or contracted to adjust it for carrying a larger or a smaller barrel, as may be required, and the side bars and braces locked in place when adjusted. The said wheel can be conveniently attached and detached, as required, and the side bars and braces locked in place when adjusted.

Improved Car Axle Lubricator.

John D. Imboden, Richmond, Va.—The invention consists in a detachable wire frame, having elastic sides that press a woven fabric or other absorbent to each side of the journal, thus supplying the lubricant and wiping the journal at the same time. The great merit consists in the facility with which it may be applied to any journal box and removed therefrom.

Improved Paper Dryer.

Jonathan Hatch and Guilford Smith, Windham, Conn., assignors to Smith, Winchester & Co., same place.—Each side is provided with girders, which support the cylinders and fans. These cylinders each have two heads, which consist of a hub and a spider, each being made separately and fastened together. The advantages claimed in this manner of making these heads are, first, to prevent breakage in the shrinkage in casting; secondly, to admit of lightening the several parts; thirdly, to facilitate the construction of said heads and hubs. The longitudinal rails, which connect the cylinder heads, are stayed by internal rings. Wire is wound spirally over the cylinders and fastened with a cap piece. These cylinders are revolved in a steady and uniform manner, gear wheels being attached to the hubs at one end, which engage with each other.

Improved Cotton Chopper.

Theodore C. Burnham, Waco, Tex.—The chopper knives are attached to rods which project rearward and inward, so that their inner ends may meet or slightly overlap at an angle. By operating an arm, the knives may be held back and prevented from cutting, when desired. A spring is made of such a strength as to hold the knives to their work under ordinary circumstances; but should said knives strike anything they cannot cut, the spring will yield and allow the knives to swing back and pass the obstruction.

Improved Bird Food Holder.

Samuel E. Tompkins, Sing Sing, N. Y.—This is a gripping tongs for holding sugar lumps, bread, cuttle bone, pieces of fruit, and the like, with a gripping stand or foot adapted for temporarily attaching it to the wires of the cage, so as to hold the food permanently.

Improved Distance-Measuring Instrument.

William F. Harrech, Chicago, Ill.—The invention consists of two reflectors, of which one is placed stationary on a suitable frame under an angle of forty-five degrees, in front of the object glass of the telescope, extending to the height of the center line of the same. The other pivoted reflector is mounted on a sliding piece, which moves under suitable angle to the line of sight along a scale on which the distance is indicated by a pointer of the pivoted reflector at the point where the reflected picture and the real object, seen by the upper half of the telescope above the stationary reflector, fall exactly into one.

Improved Harvester.

Charles D. Shrader, Lancaster, Wis., assignor to himself and Allen R. Bushnell, same place.—This is an attachment for the platforms of grain harvesters, for the purpose of facilitating the work of the binders. It consists in a sweep operated to compress the gavel against the rear side of the platform.

Improved Mangle.

Henry Tamms, Bartlett, Ill.—This consists in a weighted pressure box, with central shafts, which is connected by slotted and fulcrumed levers and connecting rods with crank wheels, operated by an intermeshing cog wheel, for imparting reciprocating motion to the press box by the continuous rotation of a hand crank wheel, so that one person may readily work the mangle and tilt the weighted box, while another feeds the clothes rollers to the same.

Improved Game Board.

Owen A. Gill, New York city.—This invention consists of a disk, which is balanced on a central bottom handle, and provided with indentations or cup-shaped recesses and different obstructions for rendering the playing of a ball thrown from a revolving wheel into these holes more difficult and hazardous.

Improved Cording Attachment for Sewing Machines.

Hamilton C. Jones, Brooklyn, N. Y.—The lower part of the presser foot is provided at one side with a beveled recess, which guides the cords on a level with the foot without the cords being acted upon by the presser foot, and impeding the regular stitching to the fabric. A sheet metal guide plate slides in grooved guides at the top of the presser foot, and may be laterally adjusted thereon, to be locked and retained for guiding any thickness of cord to the needle by a spring arm with a hook edge snapping into grooves of the presser foot. The side flange of the guide plate is provided with a folding front extension, which is bent in the shape of a flat tapering tube, by which the cord and fabric are gradually folded, and thereby more easily fed.

Improved Car Wheel.

Samuel Baldwin Chapman, New York city.—The wooden tread is made by gluing together pieces of veneering placed obliquely to each other and obliquely to the wheel, so that the exterior surface of the sections which form the tread will be endwise of the grain, and then turned off outside and in. This tread is made in two sections, having between the sections a steel ring, which will resist the wear while affording a much greater degree of traction than can be obtained from an entire metallic tread. A metallic band surrounds a heavy rubber ring which surrounds the hub. The rubber ring acts as a cushion to give the wheel flexibility, and to relieve the rolling stock of concussions.

Improved Millstone Dress.

Jefferson Carvill and John Caven, Kingston, Minn.—The middle portion is arranged about an eighth of an inch lower than the face, but rising in concave shape up to the level of the inner margin of the face. This recess may, of course, be dressed out from time to time, as the stone wears away; but in order to save the labor of so dressing it, it is proposed to construct the part separate from the other, and arrange it in a recess, with adjusting screws to lower it away from time to time, as the face of the stone wears.

Improved Traveling Cap.

Adolph Schwarz, New York city.—This consists in the introduction of a connecting piece across the opening for the face, by which the eyes and mouth are left uncovered, but the nose and cheeks protected.

Improved Device for Moving Railroad Cars.

Benjamin F. Phelps, Kansas City, Mo.—The object of this invention is to provide means for moving cars on railroads; and it consists in a lever slotted at the lower end, having a friction wheel in the slot and a crab pivoted to its end. It also has a removable fulcrum composed of two bars attached to its sides, to the lower ends of which fulcrum bars a self-adjusting crab is attached.

Improved Sewing Machine Shuttle.

John G. Nichols, New Eureka, Kan.—This invention consists in a sewing machine shuttle which is so constructed that a perfect tension of the thread is obtained by a tension device, occupying but little space, within the shuttle body, the threading operation being also performed with greater ease and celerity than in the shuttles heretofore constructed, by dispensing with guide eyes, and using, instead, notches and slots into which the thread can be readily entered.

Improved Can for Mixing Paint.

Walter W. Thayer, New York city.—This invention consists of a can with a hollow handle, forming a receptacle for the mixing liquid. The handle communicates by a vent hole and a mixing orifice, which are closed and opened by a hinged spring valve, with the mixing can for admitting the required quantity of liquid to the color. The marking brush is placed after use into a side sleeve of the handle and recess of the can, while the paper with the direction to be marked is secured by a spring holder to the can.