

RECENTLY PATENTED INVENTIONS. Railway Appliances.

CAR BRAKE.—Ferdinand Gabler, Topeka, Kansas. The brake shoes of this device are carried by toggle levers having sliding rods transversely pivoted at their outer ends, while arms pivotally connected with a longitudinally sliding block are pivotally connected at their ends to levers connected by links to the sliding rods. The construction of the shoe is of novel form, and the brake mechanism is attached to the under portion of the wheel track, from which also the shoes are suspended.

LEVER ATTACHMENT FOR BRAKE WHEELS.—Benjamin Crawford, Louisville, Ky. This lever is formed of two sections, the inner one pivotally connected with the wheel to turn it, and having ears, while the outer section has an eye to receive a pivot pin passed through the ears. By this means the brake may be more quickly and conveniently manipulated, and the brakes when applied may be set with much more force than is possible with the ordinary wheel. When the lever is not in use, the outer or handle section may be turned over the inner section.

FOOT GUARD FOR RAILS.—William B. Mitchell and Frank Benberger, Galion, Ohio. This is a safety appliance for the heels and points of spring rail frogs, filling the converging spaces formed by them. It consists of a wedge-shaped, box-like piece, with securing devices to retain the piece between the converging rails by clamping it to the rail bases. The device is designed to remove the danger of persons wedging their feet in such parts of the frog, where pedestrians are sometimes caught and seriously injured.

SAFETY LOCK FOR SWITCHES.—Johan E. Sandelin, New York City. Combined with the main or side rails and switch points is a shifting rod with which are pivotally connected elbow levers having locking lips adapted to engage the flanges of the main or the siding rails, plates secured to the switch points being pivotally connected with the locking levers, in connection with means for reciprocating the shifting rod.

RAILWAY TIE.—Samuel McElpatrick, Princeton, Ky. This tie consists of a flat metal plate having on one side a depending flange adapted to be embedded in the ground, and on its opposite edge a vertical flange cut away at the proper places to receive the rail bases, the cut-away portion fitting over the outer edges of the rail bases. Attached to the vertical flange is a straining bar extending between the rails, and having a notched portion at each end fitting over the inner edge of the rail base. With this tie the rails are held in place without spikes.

CAR COUPLING.—Frank M. Stanley, Guthrie, Oklahoma Ter. This invention provides a coupling designed to be durable and inexpensive, and which will interlock automatically with a similar coupling on an approaching car, while the uncoupling may be effected from the top or side of the car. The improvement also comprises a self-acting hose coupling which will couple its sections at the same time with the car coupling, be held connected thereby, and be detached simultaneously with the release of the car couplings.

WIND GUIDES TO REMOVE SNOW.—Simon H. Dixon, Clegburn, Iowa. According to this improvement posts along the car track have projecting arms to which are adjustably attached wings, adapted to be tilted by the pressure of the wind, in such way that the wind will be directed on the track to blow the snow therefrom. These wind guides or conductors are placed at such points on the road as would otherwise be liable to become blocked by snow.

Electrical.

LAMP SOCKET AND TAP.—Alexander F. Vetter, New York City. This improvement has the usual device for attaching it to a wall socket, flexible cord, or other electric fixture, and made to receive an electric lamp in the usual way, but is furnished with an intermediate chamber containing a switch by means of which a current may be turned on or off the lamp, and is provided with electrical connections for receiving flexible cords or wires for taking the current from the socket either in parallel with the lamp or in series with it, according to the requirements for use in translating devices, such as electric motors, medical apparatus, etc.

The Manufacture, Clarifying and Charging of Liquids, etc.

To Mr. August Werner, of No. 52 Warren Street, New York City, six different patents have been granted for methods and means of filtering, separating, charging, steaming, filling and mixing, as employed in the manufacture of beer, wines, liquors, and other liquids.

The filler comprises a receiving vessel in which is suspended a series of connected frames, each provided with perforated transverse plates, a cover of filtering fabric inclosing each frame, while there is a layer of loose filtering material between the covers of adjacent frames and means for connecting the frames with each other to hold the filtering material clamped between them. Any desired number of frames may be united in the filter, which can be readily taken apart to clean the individual frames and the filtering material.

A froth and liquid separator consists of a receiving receptacle provided with filling nozzles, and connected with the base end of an inverted cone-shaped liquid supply tube, the small end of which is connected with a supply cask, while a gas supply is connected with the cask to maintain a pressure on the liquid corresponding to the hydrostatic pressure in the tube, and the pressure desired in the vessels to be charged. If the bottles are to be filled with fifty pounds pressure, for instance, the pressure in the cask must be as great as this, and enough higher to raise the liquid to the bottles.

To charge liquids, such as wines, beers, etc., with a suitable gas under pressure, a pump connected with one end of a pipe causes the liquid to flow in a column to

the receiving vessel, while a second pump connected with a gas supply is connected with the pipe at the lowest point to charge the liquid with gas under the hydrostatic pressure of the column of the flowing liquid.

To steam wine, beer, etc., preparatory to filling into kegs, casks, or bottles, the improved method provided consists of first forming a moving column of liquid and subjecting it to the action of heat at or near its base, under the hydrostatic pressure of the column, the heated liquid being then discharged into a receiving vessel at the initial pressure. The liquid is kept constantly in motion and all inlet of air prevented, so that the valuable properties of the liquid and gases are retained, the gas from the gas supply tank maintaining an equalizing pressure, and all further fermentation being prevented, whereby the liquid may be kept for a long time without being liable to spoil.

For the manufacture and filling of liquids such as beer, a reservoir is provided to collect the gaseous products of fermentation arising from the liquid in the fermenting tun, and these gases are purified to produce carbonic acid gas, which is mixed with the beer previously drawn from the fermenting tun, the charged liquid being then filled into barrels or kegs. An apparatus of special construction is provided for carrying out this process in a simple and economical manner, preventing any waste of gases during fermentation, and the liquid so filled is designed to keep almost any desired length of time without spoiling.

An improved liquid and gas mixing apparatus, of simple and durable construction, is so arranged that the moving column of liquid actuates the mechanism for completely mixing the gas with the liquid. A wheel driven by the column of liquid turns in a casing having an outlet or discharge pipe, a liquid supply pipe opening into the wheel at its center, and a gas supply pipe extending into the liquid supply pipe and discharging through it into the wheel.

The above inventions have also been patented by Mr. Werner in Great Britain, France, Germany, Belgium, and Austria.

Miscellaneous.

COMPUTING SCALE.—John H. Swihart, Dayton, Ohio. This is a scale which may be used in the ordinary way for ascertaining the weight of articles, and also be used to automatically compute the price to which certain weighed articles amount and the quantity of an article which may be given for a certain price. It comprises a tilting lever frame adapted to support the weight of the load, parallel connected scale beams fulcrumed near the free edge of the lever, and made to indicate price and weight, and an adjustable connection between one of the beams and the tilting lever frame.

WHEEL VEHICLE.—Thomas Hill, Jersey City, N. J. This improvement is especially applicable to dumping carts or wagons, as well as to various kinds of draught vehicles carrying persons or merchandise. The spring-carrying pedestals which support the body form integral parts of the main frame, and on the under side of the castings, of which the pedestals form a part, are recesses to receive the vehicle axle, U or clip-shaped bolts bracing and supporting the sides and body of the axle. The improvement is designed to insure lightness, durability, and strength, and easy or light running of the vehicle, free from rattle or shake.

LATCH.—Philip Steuerwald and Albert Cording, Sannemin, Ill. This is an improvement in door catches which have a pivoted catch proper, to which is pivoted a sliding rod, and a spring holding it normally engaged with a projection on the door or door casing. In the patented device the knob or part attached to the door has inwardly projecting arms to whose extremities a catch is pivoted whose free end swings across the base of the knob, and is thus adapted to enter a recess in the door casing to hold the door closed.

TONGS.—Thomas Smith, Breckenridge, Miss. Tonge especially designed for conveniently grasping and easily carrying ice, kegs, boxes, etc. are provided by this improvement, the construction being such that the article can be readily disengaged by simply changing the position of the tongs, to throw the weight on one of the legs only. A bar carrying the pivot of the tong legs or tines is formed with a bearing in which is fitted to slide the handle bar, pivotally connected by two sets of links with the tong legs.

BRIDGE FOR STRINGED INSTRUMENTS.—George Wooster, Fort Apache, Arizona Ter. This is an improvement for such instruments as the zither, guitar, mandolin, and others having a fretted key board. It consists of a bridge plate, an anchor plate, and string rests adjustable upon the bridge plate, with locking devices for clamping the rests to the plates, the string rests being equal in number to the number of strings, and each string having an independent locking device. As the strings for such instruments are of irregular size and elasticity, this can be allowed for by the improvement, and the rests may be adjusted to give a tense string a greater length than a lax one.

MUSICAL KEY AND TRANSPOSITION GUIDE.—J. B. F. Showalter, Valparaiso, Ind. Disks of thin wood or cardboard, bearing different characters on their opposite sides, are held on a shaft supported from a base, the central and larger disk having near its outer edge the natural and sharp keys of the different clefs on one side, and on the other side the natural and flat keys. Smaller disks on each side of the central one form indicator or pointer sections, while still smaller outside disks constitute minor accidental sections. By this means is formed a guide designed to quickly indicate the signature of any given key and the notes sharpened or flattened in it, the designation of the major and relative minor and the accidental incident to the relative minor.

HAT BLOCKER AND STRETCHER.—Adin W. Hilsinger, Orange, N. J. According to this improvement, the grippers are capable of individual adjustment, whereby the hat body operated on will be held firmly by each gripper, instead of their adjustment being collectively made as heretofore. Combined with two pivoted bars having a loose connection at their

upper ends, one bar carrying the lower jaw, overhung by the upper jaw sliding on the other bar, is a longitudinally extending adjusting screw connecting the upper jaw with its carrying bar.

BOX FASTENER.—Davis R. Knox, Portland, Mo. The box to which this device is applicable has a sliding lid or top, the box having an apertured locking end strip, and the sliding lid having a corresponding strip with a recess in which lies a crank-shaped vertically sliding and horizontally turning bolt adapted to engage the strips, and to turn a bent handle end out of the recess when the lid is unlocked. The fastening is cheap and easily operated, and entirely out of the way when the lid is closed.

CLOTHES DRIER.—George A. Leighton, Newaygo, Mich. This is an adjustable opening and folding rack, which is light, easily operated and adjusted, and presents a large amount of clothes room, while it also has an adjustable caster or roller base that facilitates the movement of the rack over the floor, gives a steady cross support, and may be folded when the rack is not in use.

RIFLE ATTACHMENT FOR SHOTGUNS.—William J. Redwine, Concordia, Kansas. This invention provides a barrel with a number of parallel bores to slip into a shotgun barrel, the bores to be rifled after the manner of an ordinary rifle, there being a spring-pressed ejector at the butt end of the barrel with bores registering with the barrel bores, and mechanism for exploding the cartridges. The attachment may be quickly inserted in the barrel of an ordinary breech loading shot gun, and affords means for firing one or a number of small bullets, and forming an arm which is a combined rifle and shotgun.

STOVE.—Albert W. Alger, Kansas City, Mo. A series of deflecting dampers is arranged within a cylindrical stove body closed at one end and open at the other, while a telescopic head section in which is arranged a burner fits the open end, the construction forming an improved oil stove whereby the radiation of heat is greatly increased, while a safe and convenient method is provided of feeding oil to the burner.

HUSKING PIN.—Svein M. Halvardsgaard, South Sioux Fall, South Dakota. This is a device with adjustable finger straps, and a plate or blade having at its forward end hollow bent claws. The improvement also includes an adjustable palm piece that protects the palm of the hand and gives increased strength to work and control the implement.

BAG HOLDER.—Thomas Merry, Chicago, Ill. This is a simple and efficient device for holding bags while they are being filled, and is formed of wire doubled upon itself to form a loop, with each arm of the loop offset or bent twice at right angles, the arms of the loop being connected at the free end with a looped wire, and means being provided for supporting the wire loop.

EYE SHADE.—Silas G. Soules and Horace E. Stowe, Hudson, Mass. A nose piece and two forwardly projecting trough-like shades are comprised in this device, the shades fitting close to the lower eyelids, so that no light can strike the eyes from underneath. A screen hangs down from the inner ends of the shades, and the device is more especially designed for the use of drivers of teams, engineers, etc., enabling the wearer to see more clearly ahead.

FAN.—Samuel H. Baer, Brooklyn, N. Y. This is an improvement in that class of fans in which the web folds between two handles, and opens into circular form by swinging one handle section on a pivot connecting the handle sections. The outer folds of the web are secured on the handle sections by sheet metal L-shaped strips, which are not visible, but securely fasten the folds in place, and also inclose the body of the web and protect it from injury.

MAT.—Henry E. T. Gerhard, Mattapan, Mass. This is an improved article of manufacture, comprising a flexible, waterproof base and a surface of overlapping scraps or strips, the base and scraps being secured together by rubber cement and vulcanized. The invention provides principally for utilizing the waste scraps of waterproof material produced in the manufacture of waterproof garments.

TRUSS.—John Gray, Buffalo, N. Y. This is a light and strong truss to be worn around the body for the treatment of hernia, and is adapted to carry the pad so that it may be held at an angle to the truss belt and at a convenient distance therefrom.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

APPLIED MECHANICS. By Andrew Jamieson. London: Charles Griffin & Co. 1892. Pp. xvi, 268. Price \$1.25.

We here have a London University examination manual, covering a special stage of the science and art department examination in applied mechanics. Notwithstanding this fact, the well known author seems to have succeeded in producing an excellent manual. The work is also characterized by numerous illustrations and an unusually full index. In the illustration of the ship's capstan, of page 44, the arrows indicating the motion of the rope are put in the wrong direction.

COMMERCIAL ORGANIC ANALYSIS. By Alfred H. Allen. Vol. III. Part II. Philadelphia: P. Blakiston, Son & Co. 1892. Pp. viii, 584. Price \$5.

Allen's Commercial Analysis has won so high a place in scientific literature, that any review of this last published portion is unnecessary. Criticism seems out of place in dealing with it. A reference to its contents shows the ground covered. Amines and ammonium bases, hydrazines, tar bases, such as aniline, pyridine, etc., and vegetable alkaloids are the subject matter of the present volume. The subjects are systematically treated. Thus under the cinchona alkaloids, the alkaloids are individually treated, their separation and the

commercial assay of cinchona bark coming later. The commercial assay as executed in this city, while not given in detail, can be worked up very satisfactorily from the data given. We note also that the destruction by fermentation of cocaine in coca leaves is duly noted. This is a subject which has occasioned much trouble and dissatisfaction between importers and chemists. A very valuable feature is a plate of reproductions of commercial leaves and leaves used as adulterants.

A TREATISE ON MORTGAGE INVESTMENTS. By Edward N. Darrow. Minneapolis: I. Kimball Printing Co. 1892. Pp. x, 50. Price \$1.

This little manual is written for the public. It is arranged in the usual paragraph form of legal treatises, with full-faced caption for each paragraph. The range of subjects is excellent. Possibly the author's penchant for long sentences might be criticised. Clearness is everything in a law book, and short sentences generally conduce thereto.

ELECTRIC LIGHTING AND POWER DISTRIBUTION. By W. Perren Maycock. Part I. London: Whittaker & Co. New York agents, Macmillan & Co. No date. No index. Price 75 cents.

As we have noted in many other English science manuals, we again find the shadow of the London Institute examinations. It purports to be a really elementary work and as such will be acceptable to many American readers.

PHOTOGRAPHISCHES NOTIZ-UND NACHSCHLAGE-BUCH FÜR DIE PRAXIS. Von Ludwig David und Charles Scolik. Third Edition. Halle a. S.: Wilhelm Knapp. 1893. Pp. xiv, 204.

This work, devoted to photographic notes, etc., for the amateur, is illustrated by seven most beautiful heliogravures, which in every way rival the best efforts of the artist and engraver. Otherwise it contains a useful amount of information and data as to platinotype and other processes, and a memorandum table for the entry of data concerning negatives.

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & CO., 361 Broadway, New York.

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3. A model dwelling at Holyoke, Mass., erected at a cost of \$6,000 complete. Perspective views and floor plans. H. W. Coolidge, architect, Holyoke. A pleasing design.
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5. The First Baptist Church recently erected at Warberth Park, Pa., at a cost of \$6,000. A unique design in the Gothic style of architecture.
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