RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CLOSED CONDUIT ELECTRIC RAILWAY.—Michael F. Flynn, Stamford, Conn. According to this improvement the live wires, both supply and return, are held in a closed conduit, in combination with a contact rail which a trolley on the car may easily follow, and a very simple automatic switch mechanism, by which the current is only supplied to that part of the contact rail immediately beneath the car, contributing to the safety of the line and preventing loss of current. As the car advances, a simple mechanism carried by the trolley successively closes and opens the switches to the supply wire. Means are also provided for keeping the line clean, and, altogether, to afford an efficient system which may be economically operated.

CAR AXLE BOX DUST GUARD AND OIL SAVER.—Frederic P. Thompson, Fredericton, Canada. This improvement comprises a dust guard or collar in which two concave bearing edges are held against the top and bottom surfaces of the axle and are pressed together by means of springs, causing them to tightly close about the axle and advance to a close fit as fast as they wear, maintaining always a tight joint. The invention provides a cheap and simple construction and arrangement of parts, very convenient and effective in use.

SELF-OILING WHEEL.—Ebenezer S. Jennings, Pomeroy, Ohio. Car and other wheels, according to this improvement, have an oil chamber surrounding the bearing sleeve, and the sleeve is slotted to supply the oil to the journal throughout its entire length, inlets being arranged to permit the easy entrance of the oil, but preventing its waste. The construction is such as to obviate the necessity of using a cap to close the reservoir or oil chamber.

Mechanical.

MACHINE FOR TWISTING METAL STRIPS.—Thomas M. Polyblank, New York City. This is a machine in which one or a number of bends may be made in a metal strip or a length of wire, and simultaneously with the bending an aperture may be produced in the bent portion, the strips being so bent in sections that when a series of them are crossed a lattice will be produced, the strips being joined by bolts or rivets passed through registering apertures. The sections of the strips with apertures and the blank sections may be of any desired length, and the apertures be made to center metal of various widths, adjustable guides or shoes being employed to maintain the strip in position to be operated upon.

PUMP VALVE.—James Hewitt, Brooklyn, N. Y. This is an improvement in manufacture by which the valve is made with a metallic upper face and a lower or seating face of rubber, fiber, or similar material, more or less yielding. It is designed to combine the two materials in such manner that they may be united at a single operation, and when united the seating surface will be securely attached to the back without the aid of cement or other fastener.

WIRE FEEDING DEVICE.—Otto J. Ebert, Beaver Falls, Pa. In machines for making wire nails, staples, and similar articles, this invention provides a simple device to insure the positive and uniform feeding of one or more wires to facilitate the work of the machine. The improvement consists principally of a spring-pressed pivoted arm carrying at its free end a grooved wheel engaging the wire to be fed, a guide being arranged opposite the wheel to enable the wire to be clamped between the guide and the wheel.

Miscellaneous.

SPEED INDICATOR FOR BICYCLES.—Andre Noel, Paris, France. This is a device which may be conveniently mounted on and driven by the bicycle, to indicate at all times the speed at which the wheel is moving. A dial graduated to indicate units or distances is arranged in a casing attached to the frame near the handle bar, and the dial is traversed by an index hand connected with a screw stem which is rotated by means of steam-governor-like connection within the casing with a shaft rotated from the front wheel or axle. As the weights on the governor arms within the casing are thrown out to a greater or less extent, when the wheel is being propelled, the index hand is correspondingly moved over the graduations on the dial.

FLOUR MILL SHAKING BOLT.—Harry K. Mowson and Roswell F. Corey, Scottsville, N. Y. This invention combines a scalper with a grader, to properly and rapidly bolt large quantities of break chop, middlings, and flour without danger of clogging. The sieve is so hung that by means of eccentric rods and rocking beams, an up and down motion is given to its upper end, while a longitudinal motion is also given to it, the double motion agitating the material passing over the sieve, whose meshes are cleaned by rotating brushes mounted to travel under its perforated bottom.

BLEACHING GLUE.—John E. Kunitz, Santa Cruz, Cal. A process has been patented by this inventor to bleach fresh cut glue by subjecting it to the action of sulphur fumes, rendering the dried glue more soluble and serving to preserve it longer in the carpenter's pot, as destroying bad odors if it is made of impure material. The process consists in mixing with the liquid glue subacetate of lead, cooling and spreading the fresh cut glue on perforated supports, and then sulphurizing it. In this manner impure glues may be given a milk-white shade quickly and inexpensively.

FOLDING SCREEN.—John T. Loveland and George W. Eastburn, Sheldon, Ill. To securely unite several screen panels so that they may be conveniently folded up or extended, the screen is provided with a hinge having a split ring forming an eye adapted to engage a bearing on one of the panels, its end portions forming parallel adjacent prongs for insertion in the end of one of the rods of an adjacent panel. A hanger adapted to support a curtain or filling rod has a cap engaging the end of the rod wherein the prongs are inserted, the cap being centrally perforated for the passage of the prongs.

GATE.—William B. Atkinson, Bowling Green, Ky. This invention provides an improvement in automatically operated gates opening in a direction opposite from that of a person approaching. A hinge post extending above the gate supports a main lever, and when this lever is swung from normal position, to one side or the other, its movement first releases the latch and swings the gate open, the latches on the gate, when the latter is fully open, engaging catches on posts at the roadside. The main lever is operated by pulling on cords suspended from suitable supports at each side of the approach.

INKSTAND LID CLOSING ATTACHMENT.—Theodore L. Harlow, Gardner, Mass. This is a simple device of silvered wire adapted to clasp upon the body of the inkstand and afford hinged support to a lid for the ink well, the lid being automatically lifted from a closed position by contact of the penholder with a rocking frame that is part of the device. The lid afterward closes by gravity, remaining elevated only a fraction of time, sufficient to allow the pen to be removed without obstruction or contact with moving parts, the ink well being at no time left open. The device can be made cheaply or elaborately. It was invented by an accountant of over thirty years' experience, and was the result of experiments made on account of the annoyance he had experienced from dust and lint becoming mixed with his ink, as well as the fact of the ink thickening after exposure.

LIQUID SAMPLING DEVICE.—Gaetano Tagliabue, New York City. To obtain samples of liquid from different parts of a containing tank, and especially for getting oil samples from an oil tank, this inventor provides a device consisting of a barrel having a gravity valve at each end, a stem extending from the lower valve to within a short distance of the upper valve, there being means for independently raising the latter valve, while a rod secured to the lower valve is made up of sections of different lengths. By proper adjustment before the barrel is dropped into an oil tank, the valves are lifted at the desired distance from the bottom, and close automatically when the barrel is raised from the tank.

WALL AND FURNITURE GUARD.—George W. Hinkle, New York City. This is a roller attachment having a screw shank by means of which it may be conveniently applied to any article of furniture without the use of tools, and adjusted so that the axle of the roller may be vertical or at any desired angle. The guard is applied to that part of a piece of furniture which is most likely to come into contact with the wall, protecting both the wall and the furniture, without disfiguring the latter.

SERIES PHOTOGRAPHIC CAMERA.—Robert D. Gray, New York City. For taking a series of pictures of moving objects and projecting the pictures on a screen with the aid of a suitable illuminant and light-controlling devices attached to the camera, this inventor has devised an apparatus whereby all the movements of the object are represented in the pictures when projected. Guides hold a strip of unexposed sensitive film in two focal planes at right angles to each other, and a plane segmental revolving mirror arranged on a plane at an angle of forty-five degrees with the axle line of the objective is constructed to eclipse the direct light beam entering the camera and at the same time reflect it laterally to the portion of the sensitive film lying parallel with the axial line of the lens. There are also devices for moving two portions of the film in alternation along the two focal planes by a step-by-step movement.

BARREL HEAD.—George M. Burroughs and Frank K. Roberts, Santa Cruz, Cal. This is a sectional head having parallel recesses in which are arranged slidable rack bars having rubber tips. The head may be readily adjusted at any desired height in the barrel and fastened there by turning a hand wheel on a shaft on which is a cog wheel whose teeth mesh with those of the sliding rack bars, the shaft being mounted in a bracket secured to the top of the head.

SIGN.—George C. Humphries, Brooklyn, N. Y. This is a step sign having a body plate adapted to carry the house number, and an angled fastening device, a horizontal member of which is adapted to be driven between a step and the riser of the next step, while a vertical member engages the outer face of the sign plate. A means is thus provided of readily making visible a house number without depending on that usually placed on the transom or on or over the door.

DISPLAY FRONT FOR BOXES.—Edward L. Chaffin, Helena, Ark. In show fronts of boxes, especially those designed for crackers, dried fruits, etc., this inventor has devised a construction with which the front may be divided into two sections, the upper section being a drop section which has end guards, so that when the section is dropped downward to expose the contents of the box they will not spill out at the ends. An automatically operating fastening or locking device is also provided for the drop section, and the entire front is so made that it may be secured to any style of box or receptacle.

COIN SLOT LIQUID DISPENSING APPARATUS.—Pierre A. Juge, Thibodeaux, La. In applying this apparatus to a keg, a faucet barrel is first driven into the keg after the manner of driving beer faucets, and a box-like casing is then placed in position over and around the barrel, a projecting lever connected with the faucet being so arranged that the faucet can only be operated by the lever to discharge a given measure of beer or other liquid on the placing of the proper coin in the slot or trough of the apparatus. The device may be readily attached to a keg of beer, ale, or other liquid, or to a tank or reservoir.

BOTTLE STOPPER AND FEED.—William S. Swan, Maumee, Ohio. A device for use on ink bottles and ink stands, to prevent the ink from evaporating and becoming thick, while permitting of conveniently supplying the pen with ink, has been devised by this inventor. The tubular stopper has an air chamber over which is an elastic diaphragm, there being a sleeve of hard material within the tube and a depressible funnel over the diaphragm, while a funnel tube extends from the funnel through the diaphragm and the central opening of the sleeve, the funnel tube having an enlarged upper portion engaging the upper end of the sleeve when the funnel is depressed. The device is cheaply made and may be readily applied to any kind of ink well.

POCKET HOLDER FOR PENS, PENCILS, ETC.—Walter S. Russell, Cooperstown, N. Y. This is a device adapted for application to a vest pocket, stretching the pocket laterally but without bulging it or detracting from the appearance of the garment, while affording an absolutely secure hold upon pencils, fountain pens, etc., placed in the pocket. It consists of two plates of spring material sliding upon one another, and which may be locked in adjusted position, both plates having spurs at their end portions, while an elastic band surrounds the plate sections, passing between the spurs.

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.

THE MODERN MACHINIST. A practical treatise on modern machine shop methods. By John T. Usher. New York: Norman W. Henley & Company. 1895. Pp. xxxv, 322. Price $2.50.

The title of this book is sufficient justification for its existence. The modern machinist, in the personal sense, must be a student of the literature of his profession. The rule of thumb and empiric practice can no longer be tolerated in the machine shop of the day, and the man who wishes to progress beyond the merest status of workman must study. The present work is devoted in its text to modern machine shop methods and in its pages may be found treated such subjects as Measuring Instruments, Vise Work, Chasing, the Erection of Machinery, Planing, Shaping, Slotting, Milling, Lathe Work, and other topics, all treated in great detail and with very numerous illustrations. The illustrations for the work were prepared especially for it, so that in it we notice a pleasing feature in the absence of the old time cuts, with which we all are too familiar. The illustrations are new and fresh and thoroughly appropriate for the subjects treated. A machinist's manual must be rewritten every few years; the present one, in its first edition, and written by one of the best known machinists of the day, will appear thoroughly up to date and will be found to be one of the most modern exponents of the science, and all its subjects will be found to be treated up to latest developments. Two of the most commendable features of the work are the index and the table of contents, both of which deserve very high praise on account of their thoroughness.

ELECTRICAL ENGINEERS' AND STUDENTS' CHART AND HAND BOOK OF THE BRUSH ARC LIGHT SYSTEM. By H. C. Reagan, Jr. New York: Norman W. Henley & Company. 1895. Pp. 48. Price $1.

One who has studied and understood thoroughly any single dynamo is in excellent condition to study others. The Brush dynamo, the leading example of the open circuit type, in its theory and history has been one of the most interesting developments of electrical engineering. The present work receives its best praise when we state that it explains to the comprehension of all the action of this machine, and that the very numerous illustrations in the text are thoroughly appropriate and apposite. In addition to these illustrations, however, the author supplies us with a species of working model or movable diagram in pasteboard and celluloid, which illustrates the exact relation of the commutators to the coils and brushes and of the whole to the lights, which, with the many diagrams, will make the subject exceedingly clear. To the student of electric lighting the book must be commended, while to him who has to deal with the Brush system it will be found a sine qua non.

VARIED OCCUPATIONS IN WEAVING. By Louisa Walker. London and New York: Macmillan & Company. 1895. Pp. xviii, 224. Price $1.

This book is meant for the use of schools, and shows samples of varied articles made by weaving processes, some exceedingly pretty. The illustrations are very numerous, so that whatever is shown may be done, as it is very clearly explained. We believe that for work at home it will be found very useful and productive of ideas which can be utilized in the manufacture of Christmas presents and the like. The aim of the author is to use the "Froebel gifts" as the basis of all teaching, and when possible to apply the same excellent methods to other work of everyday usefulness. As a book for little workers, it may be considered one which will help in attaining satisfactory results by simple methods.

MOTIVE POWERS AND THEIR PRACTICAL SELECTION. By Reginald Bolton. New York and London: Longmans, Green & Company. 1895. Pp. x, 257. Price $2.25.

This excellent little work covers manual, animal, wind, water and steam power, as well as gas and hot air engines and electric storage batteries. It will be seen that quite a large field is covered by it, and there is no doubt that the author, with so little space at his disposal, has done very well. It does, however, seem as if the field was rather too large to be embraced in so small a work.

AROUND THE LAKES. Containing a list of American lake vessels, and addresses of managing owners, condensed statistics of the lake business, and a historical resume and illustrations of the plant and vessels built by the Detroit Dry Dock Company, Detroit, Mich., Ship and Engine Builders. Pp. 228.

Although this book is a catalogue or advertising circular of a specific business, it is a most interesting contribution to the subject of naval engineering as regards the phase of it carried on upon the great lakes. The title page, which we have given in full, acts as the best synopsis of the contents. The book is very fully illustrated with reproductions from photographs and with engravings showing different lake vessels. It contains also many statistics and examples of repairs to injured ships. It is not restricted to steam vessels. It is quite interesting to look through it and see how the fresh water navigators have worked out a scheme of freightage different from that employed on the ocean. It is observed that the vessels are classified into package freight steamers and coarse freight steamers, besides the sailing vessels and passenger classification. As a sample of old time work, the three-masted schooner Michigan, built in 1874 and carrying upward of one thousand tons, is referred to and is shown in a very spirited cut.

THE UNIVERSITY TUTORIAL SERIES. An elementary text book of hydrostatics. By William Briggs and C. H. Bryan. London: W. B. Clive. University Correspondence College Press. Pp. viii, 208. Price 80 cents.

Those who are content to follow the English syllabus, the London University matriculation standard, and things of that sort as their limit in scientific study can find in this little work a useful manual, and even those who propose to go beyond the ground so sharply marked by our English friends will find in the numerous problems of this work an excellent opportunity for practice. The work is excellently made up, its type and paper being most satisfactory.

JOHN DALTON AND THE RISE OF MODERN CHEMISTRY. By Sir Henry E. Roscoe. New York and London: Macmillan & Company. 1895. Pp. 212. Price $1.25.

This work is a charming little review of the life of the grand old Quaker, who, by his genius, lifted himself to the heights of undying renown. His personal characteristics are most amusingly brought out. Principal of his own school when twelve years old, and teaching boys and girls ranging from infancy to the age of sixteen or seventeen, he certainly was a phenomenon, and the book throughout bears out the interesting impression made by the early life of the great investigator. We would be inclined to put this book side by side with the admirable "Life of Clerk Maxwell," as a contribution to the personal side of the history of science. A very full index adds to its value.

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