

RECENTLY PATENTED INVENTIONS. Bicycle-Contrivances.

BICYCLE.—HENRY F. HENDERSON, Ames, Colo. The bicycle is driven by a chainless gear, the novel feature of the invention being found in the use of a fly-wheel connected with the center of a driving hub on the rear wheel. When motion is imparted to the pedal-shaft the driving-hub will be rotated in a backward direction, carrying the fly-wheel; at the same time the wheel-hub will be rotated in a forward direction. The inventor claims that when the bicycle is once started, the flywheel being in rapid rotation, will steady the bicycle and aid in carrying the pedals over dead centers, thus relieving the rider of much strain.

Railway-Appliances.

CAR.—JOHN M. JONES, Sedalia, Mo. The purpose of this invention is to provide a system of bracing railway-cars which will render the floor more secure and which will, therefore, tend to strengthen the whole structure of the car. The car has needle-beam truss-rod anchored at the transoms of the car. Struts project down from the middle-beams and carry the truss-rod. Stanchions are mounted on the transoms, and truss-rods are supported on the stanchions and anchored at their outer ends to the end-sills of the car and at their inner ends to the middle-beams directly at the struts.

GRAIN-DOOR FOR FREIGHT CARS.—EDWARD W. MORTEN, Farmersville, Tex. Adjacent to the door-opening of the car are two track beams. A grain-door is provided, formed in two sections, arranged one above the other, the upper section bearing on the lower section, and the lower section bearing on the sill of the car. When the sections of the door are closed over upon the other and are in engagement with the track-beams, the inclined upper and lower surfaces of the track-beams and battens will force the door inwardly to a firm engagement with yielding strips, in the nature of weather strips, thus effectually preventing any grain from working out of the car when the door is closed.

Miscellaneous Inventions.

PRINTING ATTACHMENT FOR ROLL-HOLDERS.—GUSTAVE H. SCHUBERT, La Porte, Cal. This invention provides an attachment for rolls of wrapping-paper, by means of which it will be possible to print the paper with an advertisement or other matter as the paper is unwound from the roll. An arm is attached to the frame of the roll-paper carrier and pressed by a spring toward the roll of paper. The arm carries an inking and an impression roller, the latter bearing always against the paper, so that as the paper is unwound from the roll it is impressed with the printing or impression-roller.

COFFEE-POT.—ARCHIBALD ANGUS, Manhattan, New York city. The purpose of the invention is to construct a coffee-pot so that its parts may be readily detached from one another for cleaning purposes. The pot has a bracket hung upon its rim and an upper and a lower member each provided with a hole adapted to register and to receive an arm upon the percolator by which the percolator is suspended. This construction is especially adapted for use with earthenware pots, as it is not necessary to use rivets.

TRANSOM-LIFTER.—GEORGE BICKELHAUPT, Manhattan, New York city. This transom-lifter is arranged to lock a sky-light or sash or to swing it open for the escape of persons when the building is on fire. The lifter comprises a guideway on the transom, in which guideway friction-rollers on a lever travel. A sliding spring-pressed catch on the lever engages the guideway to lock the transom in its open position. A rope is connected with the lever and catch permits the catch and lever to be withdrawn and enables a swinging motion to be given to the lever.

WASHING AND CLEANING DEVICE.—THOMAS J. WHALEN and JOHN F. WARNER, Portland, Ore. In this washing and cleaning device a reservoir is mounted, having a partition extending from the upper end of the reservoir downward to form two compartments in communication with each other at the bottom, one of the compartments having a discharge-opening at the upper end. The arrangement is such that the water is discharged by the operator, giving a quick jerk in a downward direction to the device. A rubber-scraper and a felt washer are provided, both projecting a suitable distance from their holders and standing at an angle to each other and at angle to the handle of the device, in order that they may be applied at the proper angle to the surface to be cleaned.

FOLDING UMBRELLA.—FRANK G. GROVE and FRANK E. STOVER, Luray, Va. The invention provides an improved locking connection between the telescopic or sliding members of a rib employed in folding umbrellas. The locking device serves materially to strengthen the rib to which it belongs, where the two members of a rib connect, especially when the umbrella is opened. Although it is impossible to move the members of the rib upon one another when locked, they can, nevertheless, be freely operated when the umbrella is closed. The cover of the umbrella when stretched, will, by flexing the ribs, bind the locking device so as to prevent its accidental displacement.

COMBINATION-TOOL.—WILFORD A. HAUGER, Pax, Mo. The tool comprises a handle-bar in one end of which a headed stock is adjustably held, having a ratcheted head adapted to engage a pipe. A chisel is adjustably mounted on the handle-bar and is movable toward and from the stock. The tool can be employed as a holt-holder, in screwing or unscrewing a nut, as a wire-stretcher, as a pipe-wrench, or as a nail-puller.

TRAP.—JOHN D. OLINGER, Pincastle, Ky. This invention provides a simple and efficient trap for large or small game, which trap may be easily set and which, when sprung, will securely hold the captive. It is impossible for the captured animal to release itself by means of its teeth. The trap is so constructed that a touch upon the trigger will be sufficient to cause the sliding jaw to be immediately released and forced to a retaining engagement with the animal upon the trigger.

ROD OR FIXTURE FOR SASH-CURTAINS.—FRANK PERRY, Brooklyn, New York city. The fixture has a receiving-arm provided with a notch, which arm engages the vertical bore of a head. A horizontal bore

communicates with the vertical bore; and an invisible locking bolt sliding in the horizontal bore locks the rod to the fixture, by engagement with the notch in the arm.

COMPRESSED-AIR WATER-ELEVATOR.—WILLIAM H. SHAFFNER, Louisiana, Mo. In this water-elevating apparatus a tank or chamber is provided having a water inlet and an outlet and supplied with air under pressure. A valve commands the water-inlet and is held closed by the interior pressure in the elevator. An air-valve commands the air-outlet; and a connection between the water-valve and the air-valve actuates the air-valve by the movement of the water-inlet valve. The tank automatically receives a charge of water and automatically regulates the escape of air when water is to enter the tank or chamber.

TROUSERS-CLASP.—AVIDESS B. HERALD, 946 New York Avenue, Washington, N. W., D. C. This novel clasp is designed to be used on trousers wrapped around the leg of the wearer by bicyclists who seek to avoid the danger of loose trousers. The trousers having been folded as usual, the clasp is applied, the base-section of the clasp fitting within the trousers-leg and the clamping section of the clasp in the loop formed by the fold and securing the fold by its tension toward the base-plate.

THRILL FOR VEHICLES.—CHARLES A. RAY, Bridge-water, S. D. This thrill is so constructed that while the cross-bar when moved rearwardly may be disengaged from the couplings, it is impossible to disconnect the cross-bar when tension is applied thereto in a forwardly direction, as forward tension or draft on the cross-bar will tend to hold it the more firmly in the couplings. In order to prevent the cross-bar's being accidentally detached from the thrills should it be struck by the hoof of an animal. Set-screws are passed through the lower jaws of the couplings into recesses formed in the under faces of the tenons.

WORK-BOX.—EMMA BENTON, Butte, Mont. This work-basket for holding buttons, spool-thread, scissors, and the like, has a central compartment or body portion on which the basket rests and by which it is supported. Outwardly-overhanging spool-holders are supported by the central compartment or body portion and are attached to the upper portion thereof. The spool-holders are raised above the bottom of the central compartment, so as to leave a space beneath the spool-holders. The spool-holders have openings in the bottoms thereof through which may be passed the thread from the spools.

FOLDING-COOP.—CARL H. THOMSEN and HERMAN J. M. JÖRGENSEN, Memphis, Tenn. To provide a light, simple coop especially adapted for poultry and capable of being conveniently folded for shipment when empty is the purpose of the present invention. The coop is so made that there are no parts to be removed, undone, loosened, swung, or in any way moved in order to form the coop. Consequently no pieces will be lost, broken, or misplaced. In its construction, the coop consists practically of three parts: a bottom section, a top section, and a connecting link section, the top section being adapted to fold down upon the bottom section.

FOLDING GO CART.—ELISE DEPENSENAIRE, Manhattan, New York city. The go cart has sides connected to move toward and from each other, to which handle-bars are joined. A transverse bar extends between the handle-bars and is removably connected therewith. When the vehicle is folded, the transverse bar forms a handle. The cart may be extended rigidly into operative position or folded compactly when not in use.

WATER-WHEEL.—PATRICK HENRETTY, Mankato, Minn. The water-wheel comprises pulleys provided at intervals with peripheral sockets. The bucket-chain used consists of a series of buckets equally flared on both sides of a central line and provided at their juncture with eyes. Through the overlapping eyes of adjoining buckets a shaft is passed, provided alongside of the buckets with rollers operating in the sockets of the pulleys. Links connect adjacent shafts outside the rollers.

Designs.

CIGAR BOX-LID HOLDER.—ALEXANDER W. GRELE, Logansport, Ind. The leading feature of the design consists of a U-shaped clip having one of its flanges provided with an extension bent outwardly in its lower portion and with a rib on the outside of the extension.

WALL-PAPER.—HARRY WEARNE, Rixheim, Germany. The papers which form the subjects of the three present designs are decorated with flowers of various kinds tastefully combined in panels.

INCANDESCENT-LAMP SOCKET.—RUDOLPH MEYER, Brooklyn, New York city. The socket is made of porcelain and provides a simple means for making the contacts.

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.

DIE EISENKONSTRUKTIONEN DER INGENIEUR-HOCHBAUTEN. Ein Lehrbuch zum Gebrauch an technischen Hochschulen und in der Praxis. Von Prof. Max Förster. Erste Lieferung. With 174 illustrations and 1 plate. Leipzig: Wilhelm Englemann. 1899. Small quarto. Pp. 112. Price, paper \$2.

Most German text books on iron framed structures have long outlived their usefulness; a new work in which the principles of modern engineering are concisely and yet exhaustively explained is certain to meet with success. The book which lies before us comes from the pen of a man evidently well qualified to fill the wants of German students. He has written a text book which is characterized by a carefulness of preparation and clearness of demonstration which we find almost invariably in the works of German scientists. We trust that the remaining installments of Prof. Förster's book will at least equal the first part. A feature of the book which deserves especial mention is the bibliography which concludes each chapter.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(7780) F. C. S. asks for a process to prevent sweet cider from souring. A. When the cider has reached the flavor required, add 1 to 2 tumblers of grated horseradish to each barrel of cider.

(7781) J. Z. asks: Can an open circuit battery be used on an induction coil as well as a closed circuit battery, and what is the difference? A. An open circuit battery can be used in running an induction coil for a time. A closed circuit cell is one which will furnish its current indefinitely or till its materials are used up. An open circuit cell must be allowed to rest very frequently. This the cell gets in running the coil to an extent, since the vibrator opens and closes the circuit alternately.

(7782) J. B. writes: Seeing in your most valuable paper an article headed "Eyesight of Children," I have long wondered why all writers, including the celebrated "Webster's Unabridged," use the word at all, unless to distinguish between foresight and hindsight. Why not say "my sight is poor" instead of my "eyesight, etc."? Is there any justifiable grammatical reason for it? A. If our esteemed correspondent can induce people to abandon the use of the very old word "eyesight," the dictionaries will then mark it "obsolete" or drop it out. Till that time it must be inserted, since the office of a dictionary is to give the words of a language as they are used. The people make a language, the dictionaries record that usage. The fault lies with the people, if any fault is to be found. If disposed to be critical with our correspondent, we should ask why he includes "Webster's Unabridged" as a writer. A dictionary cannot be called a writer.

(7783) C. K. asks (1) how to harden the horseshoe magnets for the D'Arsonval galvanometer described in "Experimental Science." A. Heat the ends of the steel re 1 hot for about one inch in length, and cool by plunging vertically into water. 2. How to compound lines, I mean about the north and south poles? A. Mark the separate magnets so as to recognize the north poles. Place all the magnets with their similar poles together. They are equivalent to a magnet as strong as the sum of all the magnets.

(7784) C. A. S. asks: Given two bodies of same size but of unequal weight (decidedly unequal) like spheres or cars, started with same initial velocity down an inclined plane, which will have the greater velocity, which will reach the bottom quicker, and which will travel quicker on a plane surface at foot of incline? A. The best answer to this inquiry is, try it and see. That is the way Galileo did nearly three centuries ago. The behavior of the balls on an inclined plane is the same relatively as if they were falling vertically. The air and other friction will retard the lighter body more than the heavier.

(7785) R. E. H. asks: 1. Can you give directions for making the so-called moist water colors? A. Dry colors, mixed with gum tragacanth, will remain moist as desired. 2. In photography exposure tables it is stated that the amount of light depends on the altitude of the sun at the time of exposure; then in the body of the table 1 second is given for March 20, noon, and for June 20, noon, is 2 seconds; while those from September 20 to March 20 appear to be correct, if in direct proportion to altitude of sun, those from March 20 to September 20 appear to be too short. The sun's altitude at noon June 20 is 1 1/2 times that of March 20, and the exposure should be 0.8 for June 20 to 1 for March 20. The difference between 0.8 and 0.2 seems to me too great for correct exposure. Where can I find a table that is correct?

A. You do not give the latitude; but, taking the degree of latitude New York city is located in as a standard, we think the light values given are substantially correct. Comparing the above values with Lieut. W. Very's tables, found on page 801 of "The Scovill Encyclopedic Dictionary of Photography," we find only a slight variation. At noon in March, he advises 1 second; April, 1 second; May, 0.5 second; June, 0.3 second; July, 0.2 second; August, 0.5 second; September, 0.5 second; October, 1 second; November, 1.5 second; December, 1.7 second.

(7786) S. C. asks for process of reclaiming gold from a gold toning-powder containing borax and soda. A. Dissolve the powder in water, then add a solution of sulphate of iron, which will precipitate the gold down in the form of a black powder. The solution is then poured or decanted off and the powder washed and then dried. The powder may now be re-dissolved with nitro-muriatic acid, evaporated and re-dissolved once or twice, when chloride of gold, free from acid, will result. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 377.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

DECEMBER 26, 1899,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing various inventions and their patent numbers, including items like 'Acids, apparatus for making', 'Air brake coupling', 'Air compressor', etc.

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