RECENTLY PATENTED INVENTIONS.

Railway Appliances.

SECTIONAL JOURNAL BEARING.—William J. Tripp, New York City. This is an improvement on a formerly patented invention of the same inventor, providing a revoluble bearing more specially designed for car wheels and axles, reducing the friction and taking up lateral thrust. The car wheel has an annular exterior recess in its hub, which is inclosed by a journal box having an annular interior recess, there being rollers in the recesses between the journal box and hub, while the wheel also has in its web recesses at a greater distance from the wheel center, there being in the recesses of the web balls adapted to bear against the journal box.

CAR BRAKE.—Russell W. McKee, Clifton, N. J. An emergency brake has been designed by this inventor, adapted for use in connection with other brakes, especially on trucks of trolley and cable cars. The truck is provided with curved guideways, shoes provided with pins working in the guideways, there being springs secured to the shoes and to the truck frame, while bell cranks above the shoes have one arm engaging the shoes and the other arm adapted for connection with an operating lever. It is designed that with this improvement the car may be stopped so suddenly that the use of safety fenders will not be necessary, the stoppage being also effected without disagreeable jar.

Mechanical.

INDICATOR.—Joseph H. Scott, Aspen, Col. This invention is especially designed to indicate accurately at all times the position of a cage in the shaft of a mine. The indicator consists of a traveling chain belt driven from the hoisting drum through the medium of sprocket wheels. The length of the chain belt is proportioned according to the depth of the mine, and the sprocket wheels are also regulated to insure the proper movement of the chain belt. The front run of the chain belt runs through a vertically disposed guideway. Indicating plates are secured on the chain belt and denote different levels of the mine shaft. The pointer is secured to the guideway and is adapted to indicate the levels in connection with the indicating plates as they pass through the guideway.

SHAFT TUG. — Arthur Edwin Hart, Broken Hill, New South Wales. This invention is designed to supply a more durable and ornamental shaft tug than those already in use. It consists of a tug body which is formed of an outside piece of leather joined and stitched externally, and packed internally with scrap leather, and the stitches and joints being so placed and formed that they are not exposed on the wearing surface. The tug body is connected to the buckle by a strap, and it is stiffened by metal plates, the buckle being so hinged and secured that the tug retains its shape and the buckle is held securely.

THILL COUPLING.—Daniel Parker, Calvert, Texas. This improvement comprises an axle clip having forwardly projecting lugs and a base plate having its front end projecting beneath the lugs and a resilient block whose lower end rests on the base plate between the lugs. The thill iron has a knuckle thickened at the back and is adapted for pivotal connection with the said lugs in advance of the resilient block, and there is an abutment plate on the back of the thill projecting beyond the back of the knuckle and above the yielding block.

TRANSMITTING GEAR FOR WINDMILLS.—Frank J. Brown, Alfred Allen and Solomon Allen, of Halstead, Kansas. To the driving shaft is secured a pinion. Fastened to the rod which transmits the power to the ground are parallel vertical guideways provided with an elongated internal rack and with an adjustable auxiliary segmental rack at top and bottom. This rack, which is thus made continuous, meshes with the pinion of the driving shaft. By adjusting the segmental rack and lengthening or shortening the guideways the stroke of the rack and consequently that of the rod can be readily increased or diminished. Friction rollers on a fixed support hold the rack in engagement with the pinion.

BUGGY TOP ATTACHMENT.—John D. Axline and James L. Baillie, Shawnee, Ohio. The object of this invention is to provide a new and improved buggy top attachment which is comparatively simple and durable in construction and is arranged to permit of conveniently raising or lowering the buggy top without the operator leaving the seat and without much exertion on the part of the person in the buggy. It consists of a spring-pressed shaft journaled in the body of the buggy and provided with arms on its ends and links pivoted to the arms and having their upper ends pivotally and slidably connected with the forward stays of the top. To the shaft is secured a segmental ratchet wheel engaged by a pawl, which is connected with a handle which terminates at the top of the seat. By the means of this mechanism of pawl and ratchet the top is easily manipulated through the medium of the shaft and arms.

PACKING DISPLACER. — Joseph Matthews, New Bedford, Mass. This invention relates to packings contained in glands and abutting on a fixed sleeve supported in a bonnet. The object of this device is to provide an improved packing displacer which is durable and which is arranged to be used without the use of hooks and similar devices. It consists principally of a pushing device adapted to act on the packing, on moving the gland longitudinally, to push the packing out of the same, so that the operator can readily mend or renew the whole packing and without damaging it.

Agricultural.

CORN HARVESTER.—Henry M. Cox, Palmer, Nebraska. The object of this improved corn harvester is to provide a harvester which, when driven between two rows of corn, will cut the corn from each row and whereby further the cut stalks may be placed upon a shock platform and be bunched or held in a bunched position while the platform is tilted to dump the shock upon the ground and also to provide a means whereby the binding twine will be carried by the machine and be near at hand for use by the operator tying the shocks.

Miscellaneous.

COAL AND GAS BURNING STOVE OR RANGE.—Albert Stecke, of Osnabrück, Germany, assignor to Walter C. Eymann, of Anaheim, Cal. The object of this invention is to provide a cooking stove adapted to be heated by either coal or gas or both. The gas burners are arranged at various openings in the stove, as the ovens, and are provided with means for protecting the same when solid fuel is used. The stove has an opening in the top above the passage for the products of combustion. A gas burner is arranged below this opening and is provided with a covering plate fitting into the opening and with a tubular extension into which the burner projects.

PAPER FOR BANK NOTES, BONDS, CHECKS, ETC.—David N. Carvalho, New York City. The object of this invention is to provide a safety paper for checks, bonds, etc., so that when any chemicals which will remove ink are applied they will instantly and permanently discolor the paper, producing thereon a stain wherever the chemicals have touched it. The paper is charged with bismuth iodide and sodium iodide. The reaction which takes place by the action on this compound of an oxidizing reagent is, in general terms, to liberate the iodine, and there may also be effected the formation of some definite compounds of iodine with the metals, the stain produced being of a high degree of permanency. For coloring matters suitable for use in this process, primulin, congo red, or the solution of a benzidene dye may be cited.

ANIMAL TRAP. — Victor J. Scherb, North Pasadena, Cal. The object of this invention is to produce a trap which is of such open structure that it does not resemble a trap. It has a pair of jaws to catch the animal, the jaws being arranged in such a way that the animal enters between them without fear. The trap is easily sprung and can be made cheaply. It consists, in brief, of a pair of jaws somewhat resembling a pair of tongs made of heavy spring wire. The jaws are held apart by a tripping plate with a bait hook thereon. This tripping plate is easily dislodged by the animal, who is immediately caught by the spring jaws.

INHALER. — Edmond Souchon, New Orleans, La. This invention relates to an improvement in devices for injecting an anæsthetic vapor into an orifice of the head in such a manner that nothing but the vapor can be introduced into the head and which can be operated with one hand and which shall also be cheap and durable. It consists of a bottle containing an absorbent substance which holds the anæsthetic so that the vapor only can be ejected. The bottle is closed with a stopper provided with two tubes, one for the air which is forced into the bottle by a rubber bulb, the other to allow the anæsthetic vapor to escape. Both tubes are provided with stop-cocks. The rubber tube for administering the vapor is pointed at its free end and is provided with a side opening through which the vapor issues.

MAGAZINE OR BOOK HOLDER.—Frank Barwick, of Honolulu, Hawaii. This is a magazine or book holder adapted for use in libraries or public places where magazines may be read but not removed. The device may be quickly adjusted to hold books or papers of varying thicknesses. Two parallel serrated jaws are provided of a size slightly greater than the magazine. One of these jaws is provided with offsets which contain a device for adjusting the holder to the size of the work. This adjustable device can only be operated by those having the key to the holder. The holder cannot be opened and the magazine removed without a key.

TROUGH.—Adam W. Haag, Fleetwood, Pa. The object of this invention is to provide an improved metallic trough which shall be of a light and strong construction without sacrificing durability. It is also less costly to manufacture, and is less liable to be broken in transportation than a cast iron trough. The improved trough consists of a sheet of metal bent to form the bottom and side portions of the trough, and having the upper edges of the side portions formed with hollow scrolls and separate end pieces, each provided with bottom and side flanges adapted to be secured to the sheet metal bottom and sides, and having about its upper edge a bead corresponding in arrangement to the scrolls of the sheet metal sides, and projections at the ends of the bead arranged inside and adapted to fit the end portions of the hollow scrolls on the sheet metal sides.

Designs.

DESIGN FOR A NUT. — John G. Lane and George Lane, Poughkeepsie, N. Y. The leading feature of this design consists in a nut having two parallel ornamental flanges, the lines of which depart laterally from the body at the bottom and near the top respectively and present each a many-armed figure. The minor features of the design consist in the cylindrical body, and the ornamental arms of one flange extending outward slightly beyond those of the other flange. The arms of one flange further overlap at one side the arms on the other flange.

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.

A DISCUSSION OF THE PREVAILING THEORIES AND PRACTICES RELATING TO SEWAGE DISPOSAL. By Wynkoop Kiersted. First edition. New York: John Wiley & Sons. 1894. Pp. xiv, 182. Price $1.25.

The subject treated by our author is one of great importance at the present day, when so many of the smaller towns and villages throughout the country are introducing sewage systems. The work, in a certain sense, is discouraging, as the author points out the faults and weaknesses of the different systems in use and does not devote the book to taking an optimistic view of any one of them. He very sensibly states that the different methods of sewage disposal meet different cases, and that it is not worth while, at the present day, to pin one's faith entirely upon one way of solving the problem. This is the general gist of the book, as far as we have seen it, and it is characterized by a general advocacy for the adoption of one or the other of the methods or of combined methods according to circumstances.

CLOUDLAND: A STUDY ON THE STRUCTURE AND CHARACTERS OF CLOUDS. By Rev. W. Clement Ley. With numerous colored plates, photographs, charts, and diagrams. London: Edward Stanford. 1894. Pp. xiv, 208. Price $3.

This very pretty book with colored illustrations, as well as very fine half tones in black and white, treats of the meteorology of the clouds and of the relation of their forms to atmospheric movements, such as cyclones. The ground covered is one certainly not satisfactorily treated up to the present, and it is believed that this work does adequately describe the phenomena it relates to and the atmospheric movements producing such. We have all heard of the "mackerel sky," and it is a satisfaction, at least, to find in this book the representation, in color and in black and white, of types of "stratus maculosus."

THE CENTURY ILLUSTRATED MONTHLY MAGAZINE. May, 1894, to October, 1894. New York: The Century Company. London: T. Fisher Unwin. Vol XLVIII. New series, Vol. XXVI. Pp. viii, 960. Price $3.

ST. NICHOLAS: AN ILLUSTRATED MAGAZINE FOR YOUNG PEOPLE. Conducted by Mary Mapes Dodge. Vol. XXI. Part I., November, 1893, to April, 1894, and Part II., May, 1894, to October, 1894. New York: The Century Company. London: T. Fisher Unwin. Pp. viii, 1104. Price $4.

Among the scientific books of more or less dry aspect which we have to review in this column, the Century and St. Nicholas may seem out of place. We are however glad to have a chance to notice them, to observe the elegance of their make up, and testify to the excellence of the matter they contain. The world is becoming so scientific now that even in these publications for children of lesser and larger growth much science will be found and some excellent scientific articles.

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

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.

(6345) A. L. asks: 1. Where can I get chloride of silver sticks with silver wire fused in? A. Address Queen & Co., Philadelphia, or other of our advertisers. 2. How many cells, one volt each, or say about two volts each, and in what way connected, will light up an incandescent lamp, 50 volts, and if one lamp can be lit up, can more lamps be applied to the same current at the same time, and how many? The lamps should be 16 candle power. A. It depends on the resistance of the cells. Probably 100 will supply a single lamp. 3. If I had enough of Leclanche batteries, could they be used for electric light purposes? I mean so that the batteries would furnish strong enough current to last four or five hours? A. They could, but a very large number would be required and some special device would be required to compensate for polarization, with consequent reduction of current.

(6346) G. T. asks: 1. What is the best kind of carbon to use on an electric telephone lead out of a large pencil or carbon they use in electric lights? A. Carre electric light carbons are very good; if you cannot get these, use common lamp carbons. 2. I am making a telephone, but I have to use two wires; how can I do away with one of these? A. Use a single wire and ground the ends by soldering to gas or water pipes. 3. Which is the best for short distance—a carbon or magneto transmitter? A. The carbon transmitter. 4. Where can I get iron for diaphragms? A. Get ferrotype plate from a photographer.

(6347) C. E. L. writes: 1. How can I get instructions on electrical calculations? A. Consult our advertising columns for correspondence schools. We also recommend Sloane's "Arithmetic of Electricity," which we can supply for $1 by mail. 2. I am trying to learn how to figure out induction coils to produce certain voltages. If you can give me any light on this, let me know. A. For induction coils divide the number of turns in the secondary by the number in the primary and multiply the original voltage by the factor thus obtained.

(6348) F. E. B says: 1. I want to make an induction coil for a telephone transmitter. How many layers, and what size wire shall I use, and how long to make the spool? A. Wind the secondary of your induction coil to 80 ohms with No. 36 wire; the primary to ½ ohm with No. 20 wire. Make it two inches long on a quarter inch diameter core of pieces of thin iron wire. 2. If I coat the inside of wooden battery cells with common yellow beeswax, will it make them acid proof? A. Coat cells with a mixture of 4 parts resin, 1 part gutta percha, melted together with a little boiled oil. Apply with a hot iron. 3. Why is it that they use finer wire to wind an armature than they do to wind the fields of a dynamo? A. The armature wire works in parallel, and would be much shorter than the field wire, if of same size. A definite ratio of resistances must obtain. 4. I have some small articles that I want to nickel plate. I have four gravity batteries. How can I do it? A. See our SUPPLEMENT, Nos. 310, 436, and many others.