RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR FENDER.—Theodore Cocheu, Brooklyn, N. Y. The platform of this fender, covered with wire netting, is pivotally held in brackets under the forward end of the car, the fender extending forward horizontally at a slight distance above the track. At the front end of the fender, and extending somewhat beyond it, is a guard rail, with rearwardly extending side rods, which are adapted to be pushed inward by an object coming in contact with the guard rail, and a catch is thus released by which the fender is dropped down upon the track, the lower side of the fender having shoes adapted to ride upon the rails. The fender may also be dropped to its lowermost position by the motorman or gripman pressing upon a foot lever.

CAR COUPLING.—James D. McDonald, Port Morien, Canada. This is a coupling adapted to couple with another one like itself or with the old fashioned link and pin coupling, holding the link in a manner to guide it accurately into an opposing coupling, and the link being automatically fastened. Spring buffers are arranged to take up part of the shock and prevent a link from being badly bent, and the device automatically sounds a gong or alarm when a coupling is made or the cars are uncoupled.

CATTLE GUARD.—Harvey M. Jack, Palestine, Texas. This improvement comprises sections of metallic frames and plates secured between the rails and along each side of the track, to guard a gap in the fence and keep cattle off the track, the plates having pricking points designed to prick the legs of the stock at or above the top of the hoof. Adjacent to the points or prongs are inclined surfaces on which the feet of stock will slide to bring the prongs in contact with their legs.

Electrical.

MEASURING INSTRUMENT.—Herschel C. Parker, Brooklyn, N. Y. To accurately indicate the volts and amperes of an electric current this inventor provides a coil of wire pivotally mounted between the poles of a permanent magnet, and adapted to move an index moving over a scale graduated to indicate either volts or amperes, or both. The coil is adapted to be placed in circuit with a resistance, to ascertain the voltage of a current, and to ascertain the amperage it is included in a shunt or branch circuit from the main circuit, the resistance being then cut out of circuit with the coil.

TIME ALARM ATTACHMENT.—Max Wolff, New York City. Combined with the alarm post of a clock or similar mechanism, according to this improvement, is an electrical circuit including a generator and an alarm, and having flexible terminals connected with the post and normally out of contact with each other. The terminals are twisted by the turning of the alarm post, the terminals being thus crossed and brought into contact with each other to close the circuit.

Mechanical.

FRICTION GEAR.—Charles and Harry Burgon, Malin Bridge, England. This is an improvement for transmitting motion from a line of shafting to flexible or jointed shafts by which shearing or clipping machines are driven. A peripheral friction gear is employed, the driven pinion being on a counter shaft parallel to the main shaft, the driving pulley and pinion being also parallel to the main shaft, and of sufficient breadth to permit lateral deviation of the driving pulley. The first member of the flexibly jointed transmission shaft is coupled to the pinion shaft by a universal toothed coupling which allows one shaft to assume any angle relative to the other through a range of 180°.

Miscellaneous.

TIRE INFLATOR.—Donald McKenzie, London, Canada. This is a device for automatically inflating the pneumatic tires of bicycles and velocipedes, and comprises an air pump of novel character arranged upon the inner part of the wheel rim, and having a pivoted arm with suitable tread projecting outwardly from the tread of the tire, to come in contact with the ground at each revolution of the wheel, and thus automatically keep the tire fully inflated, a safety valve preventing too high pressure.

VEHICLE STARTING MECHANISM.—Auguste M. G. de la Rochefontenilles, Paris, France. According to this improvement clutch boxes loosely mounted to turn on the rear axle and embracing the wheel hubs with spring-actuated clutch dogs are flexibly connected with one arm of an elbow lever whose other arm is connected with the draught mechanism, the arrangement relieving the horses of the sudden strain necessary to put the vehicle in motion, and the starting mechanism ceasing to act when the wheels have acquired the velocity they would have with the draught applied directly to the axles.

ELEVATOR AND DUMPING DEVICE.—Ferris J. Nowlin, Guilford, Ind. To elevate a loaded vehicle and dump the contents into a car or as required, this inventor has devised a portable device readily operated by horse power, the vehicle being returned by gravity to receive another load. The improvement comprises a sill frame and an upright frame with inclines, in combination with a two-part sectional hinged traveling frame operated by link bars and rope and pulley connections. The whole apparatus may be loaded on wagons for transportation or compactly stored.

SAFETY CATCH FOR ELEVATORS.—John S. Chase, Lansing, Kansas. To securely hold the cage of freight or passenger elevators in case of accident to the hoisting device this inventor provides a simple arrangement of a cam adapted to engage with its cam surface the guide posts for the cage, the cam being on a shaft turning on the cage, while a spring-pressed arm on the shaft is connected with the hoisting cable. Should the cable break or become slack the cams would be instantly thrown in contact with the guide post to lock the cage so that it could not descend.

BOOK BOARDING APPARATUS.—John Ring, Washington, D. C. This invention provides a simple mechanism for book binders' use by which to accurately bind and stop the boards and books in proper relation in piling. It comprises a base frame with front and rear guideways, a carrier in the front guideway having an adjustable end stop, there being underlying supports adjustable on the front guideway and having extensible sections, while side stops movable in the rear guideway have adjustable stop portions, with other novel features. It is designed that with this improvement an inexperienced person shall do more and better work than a skilled workman in the old way, the machine automatically gaging the books and boards as the piling proceeds.

PROTECTING METALLIC SURFACES.—Marion D. Fleming, Butte, Montana. For the protection more especially of pipes from corrosion by mineral waters or air contaminated with corrosive impurities, according to this invention, the metal is freed from grease, and two coats applied of a composition containing powdered silica, powdered litharge, powdered asbestos, powdered plumbago, liquid shellac and alcohol in proportions specified.

EYEGLASSES OR SPECTACLES.—Albert E. Butterfield, Portland, Oregon. By means of this improvement a full sized lens may be used in spectacles or eyeglasses for distant vision, while other lenses are so attached to the distance lenses that they may be brought over them, rendering the same glasses fitted for near work. When the glasses are to be used for distant vision the auxiliary glasses may be carried entirely out of the way, the adjustments being effected without the necessity of removing the glasses or spectacles from the nose of the wearer.

WINDOW FASTENER.—Ewing Eaches and Robert M. Kerr, Louisville, Ky. A rotatable bolt is, according to this improvement, mounted in the meeting rail of the lower sash, the bolt having a crank arm on its inner end and a handle on its outer end, and a slotted plate is secured over a recess in the meeting rail of the upper sash, the slot extending downward from the upper edge of the plate and having an upwardly curved lower end. The fastening is simple and inexpensive, may be quickly applied and does not detract from the appearance of the sashes.

AXLE LUBRICATOR.—Jesse D. Lyon, Higginsport, Ohio. This invention provides a simple and durable device for lubricating the axle from a reservoir held on the hub, the reservoir being formed at the end of the hub by the hub band and a cap. The oil is fed to the spindle by capillary attraction, aided by the motion of the bearing surfaces and by centrifugal action, due to the rotary motion of the boxing.

BEDSTEAD IRON.—Edwin F. Tilley, New York City. For rigidly attaching tubular or other iron bedposts to the side rails this bedstead iron is made in two sections, one having a rib on its outer face and adapted to be secured to the side rail of the bedstead, while the other section has a groove receiving the rib of the first section and a second groove receiving the post, the two sections being bolted together.

COVER FOR COOKING VESSELS.—William C. Mapledorum, Fort William, Ontario, Canada. This cover has an angular pivoted handle, the lower or horizontal member of the handle engaging the cover when its other member is in an approximately vertical position. The improved cover is designed to remove the danger of burning or scalding when handling a heated pot or pan to pour out hot or boiling contents.

NON-REFILLING BOTTLE.—John N. Adams and Wilton F. Jenkins, Richmond, Va. This bottle has automatic shifting valve or stopper devices which, when the bottle is held with its neck uppermost, will close off the outlet, and when the bottle is tilted will shift to allow the contents to freely flow out. The neck of the bottle has a contracted valve seat in which is held a gravity valve and keeper, together with a supplemental keeper consisting of a spring ring member and a central flexible portion. This valve device can be added to the bottle without materially increasing the cost of its manufacture.

Designs.

COAL SCUTTLE.—John W. Feeny and Roe Reilly, Elmira, N. Y. This scuttle has a flat black rising above the body of the scuttle, the projecting upper end flaring.

CUFF HOLDER.—Louis P. Kleiderer, Henderson, Ky. This device has a wavy shank portion, at each end of which is a laterally projecting pin.

CHUCK FOR HAT BLOCKS.—Ferdinand Herbin, Amesbury, Mass. This chuck has thickened side portions with beveled inner sides, there being openings in the depressed central part of the plate and opposite peripheral recesses in the thickened side portions.

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.

ENGINEERING CONTRACTS AND SPECIFICATIONS. Including a Brief Synopsis of the Law of Contracts and Illustrative Examples of the General and Technical Clauses of Various Kinds of Engineering Specifications. By J. B. Johnson, C. E. New York: Engineering News Publishing Company. 1895. Pp. 417. 8vo. Price $4.

Since custom has laid on engineers and architects the duty of writing specifications and contracts, it is well for them to know something of the legal ground they are forced to traverse. The leading American engineering schools have long needed a text book on the subject of the law of contracts and engineering specifications. In the absence of any such text, this department of engineering practice has received scant and meager treatment at the hands of these schools. This work has been written primarily to serve the purpose of a text book. The author is professor of civil engineering at Washington University, St. Louis, Mo., and has imparted instruction on the subject of the book for many years. The value of this work, with its wealth of technical clauses and forms, will be apparent to all engineers and architects.

STENOTYPY, OR SHORTHAND BY THE TYPEWRITER. By the Rev. D. A. Quinn. Providence: The American Book Exchange. 1895. Pp. 55. 8vo. Price $1.50.

This work gives the details of a system the principles of which can be learned in a few hours, and words may be written with a speed equivalent to two and one-half times that of the ordinary typewriter. In this system a typewriter is used. It is based on phonetics, but instead of arbitrary letter or word signs, the letters of the Roman alphabet, with figures and stops, are utilized. By a judicious collocation of capitals and letters, as also figures and stops, a complete system of shorthand has been devised.

THE CENTURY MAGAZINE. May, October. 1895. New York: The Century Company. Gilt cloth. Pp. 960. Price $3.

Such a rich, beautiful, highly instructive and exceedingly interesting volume as six months' bound numbers of the Century Magazine make can hardly be realized by those who do not see it in this form, but simply read the separate numbers as they appear from month to month. The bound volumes are also worth a place on the drawing room table for a few weeks, before being placed on the library shelves, and all good libraries should have these volumes. The most important serial is Professor Sloane's Life of Bonaparte, begun in November, 1894, a work which has thus far given large promise of being the most complete and best balanced of all the accounts thus far put forth of the life and character of the great Corsican.

SPECIAL CONSULAR REPORTS. Highways of commerce. The ocean lines, railways, canals and other trade routes of foreign countries. Washington: Issued from the Bureau of Statistics, Department of State. 1895. Pp. 763. 8vo, maps.

RECEIVED.

PHYSICAL, INTELLECTUAL, AND MORAL ADVANTAGES OF CHASTITY. By Dr. M. L. Holbrook. New York: M. L. Holbrook & Co. Pp. 120. Price $1.

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.

(6677) W. H. B. says: What preparation is best for tanning cat and other small hides with the fur on, so that the skin will be soft and yet strong? A. Supposing the skins are dry, they should be softened throughout by soaking in pure water; soft water is best, but any ordinarily pure water may be used, and care must be taken that the skins are thus soaked only a sufficient time to soften them. Then clean off any bits of flesh that may remain on the flesh side, rinse all well, shake off the loose water, and gently stretch out and tack on a board, flesh side up. Then sprinkle with a mixture of powdered alum and salt, about two-thirds alum and one-third salt, enough to just cover every part. As the skin dries it takes up the mixture, but if any be left on the surface the second day, sprinkle on a little more water, otherwise put on more alum and salt, and sprinkle. Two to three days should be sufficient for such small skins, the idea being to give the skin all the alum and salt it will take up, while in a moist condition. This tawing process makes the hair firm, a gentle rubbing and beating softens the flesh side, and it is preserved from decay, although tawed skins are never calculated to stand much wetting. This process is well adapted for all small skins, although those which are heavier require more time, and the flesh sides are sometimes folded together, and the skins rolled up. When the skins are freshly taken off, no soaking is needed, but more care is then called for in thoroughly washing off and cleaning them, and the first application of salt and alum should be in the proportions of one-half each. It requires the judgment of a tanner to deal with skins in a dry state which may have become partly damaged before drying, and it requires special knowledge also to tell whether a dry skin is so damaged.

(6678) P. W. J. says: Can you give me some information regarding the nature of alloys? A. The following is from Hiorn's "Mixed Metals": "When two or more metals are caused permanently to unite, the resulting mixture is termed an alloy. When mercury is an essential constituent, the mixture is termed an amalgam. The general method of effecting combination is by the agency of heat, but with certain soft metals true alloys may be formed by subjecting the constituents to considerable pressure, even at the ordinary temperature. Alloys such as those briefly referred to were doubtless first discovered by the metallurgical treatment of mixed ores, from the simultaneous reduction of which alloys would be formed; or in some cases, as in ores of gold and silver, naturally formed alloys would be obtained by a simple melting process. The direct preparation of alloys by the simple melting together of the constituent metals has been enormously developed in modern times, and the attention which mixed metals are now receiving by chemists is far greater than in any period of history. Comparatively few of the metals possess properties such as render them suitable to be employed alone by the manufacturer; but most of them have important applications in the form of alloys. Even among the metals which can be used independently, it is often found expedient to add portions of other metals, to improve or otherwise modify their physical properties. Thus gold is hardened, and made to resist wear and tear, as well as to lower its cost, by the addition of copper; silver is likewise hardened by alloying it with copper; and the bronze coinage is formed of an alloy of copper, zinc and tin for similar reasons."

(6679) E. W. B. says: Can you tell me how to preserve bird skins? A. Make an incision from