RECENTLY PATENTED INVENTIONS.

Of General Interest.

PUMP.—P. J. LEITHAUSER, Clarendon, Texas. This invention relates particularly to improvements in pumps for raising water from deep wells, an object being to provide a pump with novel means for centering and yieldingly holding the pump at any desired position in a well-casing and also to provide a simple means whereby the working parts of the pump may be readily raised from the well when it is necessary to make repairs.

SEAT-BRACE.—C. B. LIMERICK, Mount Sylvan, Texas. The invention is an improvement in braces for spring-boards, such as spring-seats on wagons and the like. The brace prevents the seat from careening in either direction, will avoid breaking the bolts which secure the springs to the seat, will take up lost motion, and will render the seat safe and secure.

COMBINATION PENCIL-SHARPENER AND ERASER.—C. PAYNE, Los Angeles, Cal. This combination instrument is formed from a single piece of metal and may easily be cut out and shaped up by machinery, and thus very cheaply manufactured. There are no springs, screws, or separate knives in Mr. Payne's invention, which is an advantage in the durability of the article and in the saving of the original expense.

CHAIR.—C. E. WHIPPLE, North Charleston, N. H. The invention refers to improvements in camp chairs or stools, an object being to provide a chair so constructed that the seat may be readily raised or lowered as occasion may require and the back of which may be arranged straight or at any desired angle or inclination by the person while sitting in the chair.

ARTIFICIAL LIMB.—S. J. HENRY, Princeton, Iowa. In this patent the invention has reference to artificial limbs. The object of the improvement is the production of an artificial limb which may be worn with comfort and which in use gives a certain elasticity of movement, preventing shocks and jars to the amputated limb.

SPRING-SUPPORTED SIDEWALK.—J. S. GREGG, Pomona, Mich. The invention has for its purpose the provision of novel details of construction for a sidewalk to be used by pedestrians which render the sidewalk measurably resilient and adapt it for service at any point where it is desired to locate a sidewalk, the resilience of the structure rendering it easy to walk upon.

TRESTLE.—I. O. CLAYBAUGH, Toulon, Ill. The principal object in this case is to provide a device of simple and durable construction which may be quickly and readily adjusted to different heights, which may be considerably extended in length when necessary, and which may be folded into a very compact form for convenience in transportation.

COMBINED LETTER-OPENER, PENCIL-SHARPENER, AND ERASER.—A. F. REBHAN, Syracuse, N. Y. Mr. Rebhan's improvement relates to a combined letter-opener, pencil-sharpener, and eraser; and the object of the inventor is to provide a small, compact, serviceable, and inexpensive implement of the character specified which may be conveniently carried about and which may be easily manipulated.

DECOY-DUCK.—G. W. GREEN, Lincoln, Neb. The intention in this instance is the provision of a decoy which shall be light and easily taken apart for shipping and carrying about, thereby preventing the breaking of the parts. To these ends the invention consists of a duck the body portion of which is hollow, made of wood or fiber, and the head portion being of metal, made hollow and readily attached to and detached from the body portion.

Hardware.

WRENCH.—P. F. DUROSS, New York, N. Y. The purpose of the inventor is to provide a wrench which is primarily a pipe-wrench, the said wrench being so constructed that it may be quickly and conveniently adjusted to take various sizes of nuts or different sizes of pipes and so that it will act with a maximum of power on the article gripped, but without a tendency to unduly mutilate or mar the article

COMBINATION-TOOL.—A. P. BERGGREEN, Elkhorn, Iowa. This tool embodies in its construction a carpenter's pincers or pliers, a nail-puller, and a plurality of wrenches. An object of the invention is to provide an implement extremely simple in its construction, the arms and jaws forming the body portion thereof being connected in such a manner that they may be easily separated and each one of the members may be used as a wrench.

Heating and Lighting.

HOT-WATER HEATING APPARATUS.—A. B. RECK, Copenhagen, Denmark. This invention relates to apparatus of that class in which steam is introduced directly into the water to be heated. The subject-matter of this application is a division of a prior application filed by Mr. Reck. The object of the invention is the construction of an apparatus in which a very economical operation and exact regulation can be obtained by the same low steam-pressure that is now used in common house-heating steam boilers.

FURNACE-GRATE.—R. M. RUBIO, Puerto Real, Cadiz, Spain. Mr. Rubio's improvements relate to furnace-grates or the arrangement and form of the fire-bars constituting the same, the object being to provide a form and arrangement of fire-bar adapted for use in boiler and like furnaces burning small coal or the residue obtained by washing coal, with the ultimate object of economy in fuel consumption. Although the bars are a less distance apart than usual with ordinary grates, the area for passage of air is greater.

CARBURETER.—A. J. O'SHEA, Fargo, N. D. In this contrivance the fluid-pressure in the supply-tank constantly tends to produce a flow through a partition-opening, and this will continue until the level rises to an upper opening, at which the vent-pipe will become closed and the flow will consequently stop. As the fluid in the carbureter evaporates or is taken up by the passing air the level will fall, freeing the upper opening, when the flow will resume until the original height has been restored.

Machines and Mechanical Devices.

ELEVATOR.—E. ALTMANN, Helena, Mont. In this instance the object is to provide an elevator more especially designed for elevating grain and the like and arranged to take up comparatively little room, to allow of conveying a large amount of material without requiring the running of the elevator at a high rate of speed, thus insuring long life to the elevator.

CONVERTIBLE LOCOMOTIVE AND STATIONARY ENGINE.—M. H. KELLY and E. E. PLOUGH, Spokane, Wash. In this patent the invention has reference to engines and to the mechanism used in connection therewith, and the more particular object of Messrs. Kelly and Plough being to produce a type of engine suitable for use as a locomotive or as a stationary engine, being readily convertible for this purpose.

Prime Movers and Their Accessories.

DEVICE FOR SEPARATING PISTON-RODS FROM CROSS-HEADS.—C. J. MCCARTHY, Moncton, New Brunswick, Canada. This invention relates to improvements in devices for removing or separating piston-rods from cross-heads; and the object is to provide a device of this character of simple construction, strong and durable, and that may be quickly attached to a cross-head and as readily detached therefrom.

STEAM-GENERATOR.—P. E. LEROUX, 7 Rue Sainte-Croix Arras, Pas de Calais, France. This generator comprises one or more series of horizontal water-drums connected in series or in parallel to a steam-collector and arranged above the fireplace, each series branched upon a vertical drum and preceded by one or more vertical water-drums in the flue. Upper part of each drum is connected to the next by means of a tube so that water arriving to the bottom of this tube is forced upward through the whole drum to pass into the next one. Horizontal drums branched upon the last vertical drum have means to circulate water in these parts and prevent swell. The same arrangement cools surface exposed to flames in drum next to fireplace.

Railways and Their Accessories.

CAR-COUPLING.—F. KELLER, Allentown, and D. BOWERS, Emaus, Pa. This coupling is simple, strong and durable, the parts well protected and not liable to be broken, and readily removable, the draw-head removable as a whole by withdrawal of its pin, while both the knuckle and locking-block may be separated in a similar manner, with the head in position. Coaction between the locking-block and locking-arm of the knuckle and the maintenance of the latter in position by its spring prevent accidental disengagement of the coupling by shocks or upon grades.

CAR-COUPLING.—C. A. MCKERAHAN, Wilmerding, Pa. This invention relates to couplings of the Janney type. The object is to provide details of construction which are readily cast into form at moderate cost, adapt the coupling for convenient and effective service, render it automatic in effecting engagement with another coupling of same character, facilitate detachment of two interlocked couplings, and conduce to safety by preventing the knuckle if broken from falling upon the track and possibly causing derailment of other cars.

DEVICE FOR HANGING AND OPERATING CAR-DOORS.—P. J. MCCULLOUGH, St. Louis, Mo. The purpose of this improvement is to provide a means controlled by a single lever for locking and unlocking the door and placing the door in and out of closing position and also to provide an auxiliary locking device capable of being used at will and which is independent of the lever, but serves to lock the lever against movement when the door is closed. The invention relates to an improvement in devices for hanging and operating car-doors, particularly flush doors for freight-cars.

GRAIN-DRIER FOR CARS.—J. J. SWAINE, Baltimore, Md. Mr. Swaine's invention is an improvement in driers especially designed for use in drying the grain in cars. The inventor is able to introduce air, heated or otherwise, to the body of grain at the bottom of the latter and throughout the area of the base of the grain, so the air circulating up through the mass of grain will thoroughly dry the same.

SWITCH-OPERATING DEVICE.—W. R. THURSTON, Jacksonville, Fla. In this patent the invention has reference to a device for operating switches which can be attached to an engine or a car of any kind and is intended to be so situated as to come into contact with a switch-operating mechanism located between the tracks and automatically open and close switches.

TRACK AND SWITCH SYSTEM.—W. R. THURSTON, Jacksonville, Fla. In the present instance the invention relates to a track and switch system constituting a safety device for use in connection with fast trains. The inventor's object is the provision of an automatic switching device which will be operated by the movement of a train to close all switches to side tracks and keep the main track open.

Pertaining to Vehicles.

HOLDBACK ATTACHMENT FOR VEHICLES.—J. T. MILLEN, Claxton, Ga. The object of this invention is to provide an improved attachment for vehicle-shafts which shall be adapted for convenient adjustment to accommodate horses of different sizes and lengths. The main feature of this improvement is the metal holdback-bar, which enables the usual holdback-straps and breeching of harness to be dispensed with and also greatly economizes time in hitching up and unhitching.

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 the paper.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. **In every case it is necessary to give the number of the inquiry.**

MUNN & CO.

Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 6345.—For makers of a pneumatic carpet-cleaning apparatus.

AUTOS.—Duryea Power Co., Reading, Pa.

Inquiry No. 6346.—Wanted. machinery for making wire novelties and articles similar to duplex safety pins.

"U. S." Metal Polish. Indianapolis. Samples free.

Inquiry No. 6347.—For makers of distilling apparatus, adaptable to the production of essential oils.

Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 6348.—Wanted, information concerning stamping presses for wooden boxes, such as soap boxes, etc.

Handle & Spoke Mchy. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Inquiry No. 6349.—For the address of the manufacturer of "Parker Games."

Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 6350.—For makers of small tin boxes, perforated at one end, such as talcum powder boxes.

TO LET.—Contract to make an article similar to safety pin. Box 337, Blairsville, Pa.

Inquiry No. 6351.—For manufacturers of typographical machines and accessories.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

Inquiry No. 6352.—For makers of steam engines from ⅛ to 1 h. p.

Robert W. Hunt & Co. bureau of consultation, chemical and physical tests and inspection. The Rookery, Chicago.

Inquiry No. 6353.—For makers of penny slot machines, such as punching, weighing and vending machines.

If you wish to buy patents on inventions or sell them, write Chas. A. Scott, 340 Cutler Building, Rochester, N. Y.

Inquiry No. 6354.—For makers of gasoline engines from 25 to 50 h. p.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company. Foot of East 138th Street, New York.

Inquiry No. 6355.—For a steam rubber for removing skins from fruits.

I have every facility for manufacturing and marketing hardware and housefurnishing specialties. Wm. McDonald, 190 Main St., East Rochester, N. Y.

Inquiry No. 6356.—For makers of metallic packing for ammonia pump rods, also for an instrument for testing aqua ammonia.

We manufacture anything in metal. Patented articles, metal stamping, dies, screw mach. work, etc. Metal Novelty Works, 43 Canal Street, Chicago.

Inquiry No. 6357.—For makers of or dealers in flexible wire screen.

The SCIENTIFIC AMERICAN SUPPLEMENT is publishing a practical series of illustrated articles on experimental electro-chemistry by N. Monroe Hopkins.

Inquiry No. 6358.—For dealers in machinery and supplies for laundries.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 6359.—For makers of or dealers in hay-baling machines.

Drawings, Estimates. Tools, Dies
Sheet, Wire and Rod Specialties (all metal)
Stamping, Spinning, Turning and Screw Work
Tin Plating, Nickel Plating, Bronzing.
THE W. S. BURN MFG. CO., NEW HAVEN, CONN.

Inquiry No. 6360.—For manufacturers of hollow shafting.

Inquiry No. 6361.—For manufacturers of portable wood saws.

Notes and 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.

(9512) P. G. W. says: I have a brazing torch that I bought some time ago, but do not seem to get heat enough to melt the brass so that it will flow. I use common brass wire. May be if I used spelter it would be better. What per cent gasoline should be used, and how should the articles be arranged when brazed? Is it necessary for the pieces to be brazed that they should be heated to a red heat? A. You should be able to braze with your torch if you use spelter, which you can make by adding 15 per cent of zinc to the brass that you are using. Also by placing the work on a piece of charcoal with a charcoal backing you should be able to braze with the brass wire. You must heat the piece to be brazed to a red heat.

(9513) O. K. says: A train a mile long is speeding at the rate of a mile a minute. A man is seated on the engine of the train, and another man on the rear car. The latter shoots at the man on the engine. Now, the question is, does the bullet hit the man up front? I forgot to add that the bullet is also traveling at the rate of a mile a minute. A. Your inquiry in reference to a gun fired on a moving train is constantly coming up. We have answered it six times in the SCIENTIFIC AMERICAN within two years. You will find it in queries 8823, 8862, 8997, 9058, 9270, 9433. Really the question is very simple. A gun will send a ball in exactly the same manner when the gun is in motion as when the gun is at rest. There is this difference: When the gun is at rest, the shot has but one motion; when the gun is in motion, the shot has two or more motions. In the case you propose, the shot moves with the motion of the train, and at the same time with the motion of the gun. With reference to the gun, it moves as if the train were at rest, and would hit a man at which it was aimed as if the train stood still. If you stood in a car and fired at a man at the opposite end of the car, you would expect to hit him while the train carried you and the shot along in another motion. If you could hit a man at the other end of a car, why ought not a man at the other end of a train be hit as well? The distances and velocities which you give have nothing to do with the question. They are but a relative matter. If a man could be hit with one velocity, he could be with another as well. Then, too, everybody on the earth is being carried in just the same way by the motion of the earth, and shots can be fired and objects hit as if the earth stood still. The whole matter is a very simple one to understand if the fact is seen and understood that the gun affects the shot as if the gun stood still, and the train carries the shot along also with all the motion which the train may have.

(9514) F. W. L. asks: The water furnished one town where I stop has such a percentage of air in it, that when it is drawn at the spigots it has the color of milk. It is clear, pure mountain water. After standing two or three minutes, it becomes perfectly clear. What causes this? The reservoir is about two miles from the town, and has a fall I believe of from three to five hundred feet. How could this be remedied? In metering this water, would there be more shown on the register than actually received? A. All natural water contains air. Under more pressure it can hold more air than when under ordinary pressure. So when the water of which you write flows from the pipe and escapes from pressure, the contained air expands and rises in bubbles. No harm is done by the air in the water. The air can be removed from the water by having a tank a little way above the town, into which the water may flow from the reservoir, and from which the service pipes will take it into the town. The small weight of air in the water cannot make any appreciable difference in the quantity of water passing a meter. Nor should we think it desirable to reduce the pressure in the mains for the sake of removing the air, since such a head as you name will produce a pressure sufficient for the best fire service.