

## RECENTLY PATENTED INVENTIONS. Railway Appliances.

**CAR COUPLING.**—William H. Harris, Newberry, S. C. This invention relates particularly to twin jaw couplers, the device provided being very simple, and having but few parts, while one of the jaws automatically and safely locks to effect a coupling. The drawhead has a central cavity and side recess, and the coupling jaw has a coupling and locking arm, and when two cars are brought together, the coupling arm of one car contacts with the locking arm of the opposite car. The uncoupling is effected by rocking a shaft journaled at the end of the car, whereby a pivoted catch block is raised, and may be fixed in elevated position if desired.

**CABLE TRACTION SYSTEM.**—George Muller, Hoboken, N. J. This is an improvement on a former patented invention of the same inventor, providing a system which permits the employment of two cables for each track and reducing the friction to a minimum, the picked up or dropped cable not coming in contact with the other one. The invention consists principally of two sets of pulleys arranged on opposite sides of the cables on an S or similar curve, each set of pulleys comprising two pulleys, one for each cable, and mounted to turn in a yoke adapted to swing.

**CABLE RAILWAY CURVE.**—The same inventor has likewise obtained a patent relating to cable traction with a duplex cable system as applicable to its use on curves of the roadbed, the improvement providing for the convenient use of either cable on a curve without one cable interfering or coming in contact with the other. Two sets of supporting devices are arranged on opposite sides of the cables to pass one cable over and above the other, and, with two cables entering the curve one above the other, a device is provided for passing and guiding and crossing the lower cable over and above the other, so that on leaving the curve the position of the cables is reversed.

**RAIL JOINT.**—George G. Stacy, New York City. This invention relates to a former patented invention of the same inventor, providing a cheap, strong and simple joint, which may be easily applied to the meeting ends of rails to hold them so that they cannot move lengthwise or sideways. It consists of angle plates whose vertical portions fit the rail webs, and with outwardly extending notched base flanges, in connection with a base plate to receive the rails and having uprights fitting the notches, the uprights having side arms overlapping the flanges. The joint is a very strong one, practically making the rails continuous.

### Electrical.

**ELECTRIC RAILWAY TROLLEY AND CONDUITS.**—Wilton F. Jenkins, Richmond, Va. Three patents have been granted this inventor relating to railways having underground electric conduits. With-in a conduit carrying two conductors or circuit wires, one carrying current to the motor and the other returning it therefrom, means are provided for separating or insulating from each other the wheels or rollers that travel upon the conductors, together with means for insuring a steady and constant contact between the trolley wheels and the conductor, the trolley being loosely connected to the car. One of the patents also provides means for adjusting the trolley to the car in such manner as to permit the connection to be readily made, a drag connection being provided for the trolley which may be reversed without disconnection from the car, while vertical and lateral vibration between the car and trolley will be taken up. Another of these inventions provides a novel construction of the body of the conduit and means for holding the conductors in proper insulated position. The tubular conduit has a continuous longitudinal slot on its upper side and transverse external re-enforcing ribs, terminating externally some distance from the slot and reappearing internally, while adjustable slot plates are applied to vary the width of the slot.

### Mechanical.

**DIE PLATE.**—Lewis C. Wetzel, Bellefonte, Pa. This invention provides a very effective implement, of durable construction, by means of which the desired sized die may be conveniently brought into the proper position for immediate use, a series of different sized cutters being provided in the same tool, while the die stock can be readily opened after the thread is cut to disengage the dies from the threaded bolt.

**FLOOR JACK.**—Edward A. Bullock, Bellefonte, Pa. This is an implement which may be readily shifted from one joist to another, its grip portion being adjustable to fit joists of varying thickness. It is designed to be quickly and conveniently operated to force the tongue of one floor board into the groove of the next board, making a perfect joint between the two boards, while the last board laid is nailed to place. Its construction is very simple, and one person may operate the device and nail the board to the place in which it is held by the jack.

**MATCH AND TOOTHPICK MACHINE.**—Joseph Boulard, Newport, R. I. Blocks of wood fed to the machine designed by this inventor are rapidly cut into toothpicks or matches, according as the machine may be adjusted for one or the other kind of work. The machine will also point the splints, deliver them into a carrier, dry them thoroughly, and finally deposit them in a suitable receptacle. In the making of matches it dips the splints in the baths, so that a finished article is made by the machine.

**WELL DRILLING MACHINE.**—James W. Draper, Frederick Draper and Walter Ellsworth, Alden, Iowa. This is a simple and durable machine of improved construction, designed to be very effective, and to be operated at a high rate of speed. The main driving shaft, journaled in the base of the derrick, imparts motion to a walking beam, by means of which the drilling tools are lifted and dropped, the amount of lift and drop of the tools being conveniently regulated by adjusting clamps on the beam.

**POLISHING WHEEL.**—John McClellan, Greenbush, N. Y. A wheel designed for conveniently polishing marble and other material, is provided by this invention. The wheel is attached to an ordinary polishing machine, and the invention consists of an inverted revolvable cup, adapted to contain the grinding material, an adjustable ring on the rim of the cup holding the material in place and preventing the cup from striking the marble.

**MECHANICAL MOVEMENT.**—Felix Meny, Elizabeth, N. J. Two rock shafts are, according to this invention, controlled from a reciprocating crosshead, provided with slotted arms, or drivers, one delivering the crank pin to the other, to carry it around a half revolution. The reciprocating crosshead has pivoted wings engaging the crank arms of the rock shafts, and adapted to be locked in place, the improvement being designed to facilitate converting reciprocating into rotary motion effectively and uniformly, avoiding dead centers.

### Agricultural.

**HARVESTER.**—Jacob T. Mider, Wathena, Kansas. This invention relates more particularly to harvesters in which the heading and thrashing of the grain is effected as the machine travels over the field, the machine heading, thrashing and separating the grain in a simple, rapid and economical manner. The parts of the machine are so arranged that the several operations are carried on continuously, without wasting, and detachable bins are provided whereby the grain may be gathered in bins ready for shipment.

**HAY STACK CUTTER.**—John T. Evans and Joseph H. Douglass, Adamsville, Utah. A machine which may be placed above the stack or over piles of hay to be operated upon is provided by this invention. The machine is adapted to be operated by hand, and carried across the stack or stopped at any desired point, for cutting out large or small sections of hay for baling or cutting purposes, or for being fed to cattle and stock. Upon a bed vertically adjustable upon trestles is a traveling carriage, carrying a vertically reciprocating crosshead, to which is secured a knife projecting below the bed, means being provided to simultaneously move the carriage and reciprocate the crosshead.

### Miscellaneous.

**SELF-RECORDING PLANOGRAPH.**—Justo Soler (deceased), Yanko, Porto Rico, W. I. (Perry B. Turpin, administrator). This machine is mounted on three wheels, and adapted to be moved over the ground by hand, a strip or ribbon of paper and a pencil being used to make horizontal angles, lines or curves, and another pencil being used to mark elevations or depressions. The paper is caused to travel under the pencil at a speed bearing a known relation to the diameter of one of the main wheels, thus affording a scale for reading the scroll made by the pencils, which form a figure on the paper similar to the ground measured.

**EYEGLASSES.**—Adolph H. Hartmann, Brooklyn, N. Y. An attachment for glasses is provided by this invention, to hold the glasses in proper position before the eyes, and prevent them from dropping downward or slipping out of place. It is so made as to conveniently accommodate itself to any shape of nose, and the device may be attached to glasses of any description. It consists of bracket-like strips detachably secured to the frame, each strip having a vertical portion and a foot section, the strips forming auxiliary clamps to engage the nose.

**CAUSTIC ALKALIES AND CHLORINE.**—Farnham M. Lyte, London, England. This invention provides a conjoint process of continuously producing caustic alkali and chlorine by decomposing an alkaline nitrate by heating it with ferric oxide to evolve nitrous fumes, decomposing the residue by boiling with water into caustic alkali free from iron and a precipitate of ferric hydrate, converting the nitrous fumes into aqueous nitric acid, dissolving plumbic oxide therein, precipitating plumbic chloride, fusing it and decomposing it electrolytically into chlorine and metallic lead, and finally converting the lead into plumbic oxide and the ferric hydrate into ferric oxide, for recommencing the cycle.

**LIFE SAVING AND PLEASURE CRAFT.**—Arthur B. Shearer, Reno, Nevada. Three separate and distinct boats, connected together and propelled by an electric motor, forms the distinctive feature of this invention. Each boat has a copper bottom, an air and water tight cover for its deck, is divided into compartments, and has a motor which may be operated from the shore or from the deck of the vessel. The boats are joined together with strong braces, covered with steel mesh as a platform for passengers, and here are seats with straps buckled across them, while there are suspended knotted ropes to enable persons in the water to pull themselves upon the craft.

**NUT LOCK.**—Axel Wareskjold, San Diego, Cal. This is a safety nut for wagon axles, bolts, etc., and is of very simple and durable construction, readily applied, and very effective. It is longitudinally and internally grooved, and has a longitudinally sliding spring-pressed key crossing its bore, the spring pressing the key toward that end of the bore which receives the bolt. The spring and the key are always in position in the nut so that they cannot be lost, and the nut is always ready to be attached.

**HARNESS TUG.**—Samuel P. Chandler, Lake City, S. C. This is a thill tug, comprising a yielding loop portion, having rigid end sections arranged to be interlocked and detachably connected, so that they may be readily separated to allow of the unhitching of the horse from the shafts. The device is simple, inexpensive and very efficient.

**VEHICLE BRAKE.**—Ernest W. Broadhead, Dolores, Col. This brake is designed to be comparatively noiseless, the construction being such that the brake shoes will be normally out of engagement with the wheels. A shaft journaled under the vehicle, and having crank arms carrying the brake shoes,

has an upwardly extending arm connected by a link with a foot lever, while a spring around the shaft, having one end secured to an adjustable collar and the other end to the shaft bearing, keeps an even tension upon all the joints of the brake.

**VELOCIPEDE.**—Abram C. Shelley, Blythebourne, N. Y. A machine especially adapted for traveling upon water is provided by this invention, its construction also admitting of its quick and easy adjustment for use upon land. The wheels are formed in two sections, one adjustable toward the other, the sections being connected by detachable floats with stiff heads and flexible bodies, and removable paddles being held in the wheels. The machine is designed to ride upon the waves and not plow or sink into them, and combines economy of construction with lightness and strength.

**DOOR SPRING.**—John A. Cooper, Nashville, Tenn. The spring proper, according to this invention, has a terminal portion or limb at its fast end, adapted to engage in removable manner with fixed holders or staples, a socket or shank piece entering in and engaging the opposite or free end, while a removable wrench, adapted to engage the shank piece, forms a part of the spring fixture. The improvement forms an attachment for convenient application to light or heavy doors, gates, etc., the spring being readily tightened or loosened, or taken off and reversed as desired, without the aid of special tools.

**HOLDER OR RACK.**—Charles Worden, Rye, N. Y. This is a device more especially designed for conveniently holding brooms, billiard cues, and similar handled articles, automatically clamping the handles and permitting the ready removal of the articles when desired. The device has a series of vertical ribs between which the handle is passed, and a roller travels in a recess in the inner side of one of the ribs, the bottom of the recess being inclined outward and upward from near the lower end of the rib. The article is thus held suspended, and the greater its downward pull, the tighter will the roller press against it to sustain it.

**INKSTAND.**—Liston B. Manley, Duluth, Minn. This is an improvement on a former patented invention of the same inventor, the inkstand being rendered more simple and more easily manipulated, while being more readily attached to a desk and occupying less room. A standard to be attached to a desk forms a swing support for the entire stand, and the sockets receiving the ink wells are so connected with the adjustable arm that when the arm is carried upward the ink wells will always maintain a horizontal position, the ink wells being movable laterally as well as vertically.

**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.

## SCIENTIFIC AMERICAN BUILDING EDITION. SEPTEMBER NUMBER.—(No. 83.)

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2. Plate in colors showing an elegant residence at Montclair, N. J. Two perspective views and floor plans. Cost \$17,000 complete. Mr. Frank H. Kimball, architect, New York.
3. Elevation and plans for a house at Arlington, N. J. Cost \$5,500.
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5. Elegant residence at Denver, Colorado. Cost about \$30,000. Floor plans and perspective elevation.
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## Notes & Queries

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(4516) J. B. B. asks: 1. Does a boat run faster when she is loaded by the head or stern is a question under discussion. One claim is that when loaded by the head the position of the boat makes her run down hill, and when loaded by the stern she has to run up hill. Others claim that if loaded by the stern she is made to float higher and requires less displacement, and if loaded by the head she is forced down into the water. A. Boats for speed as built after modern practice have their lines formed for the greatest speed or least resistance on a specified water line, with their keels generally sloping to a greater draught near the stern. Loading by the stern or head interferes with the speed by changing the form of the immersion lines. In sailing craft loading by the stern is required to a certain amount to counteract the tendency to dip the stem by the action of the wind on the sails.

(4517) W. H. B. asks: 1. Is lead or iron ballast better for a sailing yacht than stone? If so, has it been proved? A. Lead or iron is the best ballast for sail yachts, because of its density allowing a given weight to lie closer to the keel and thereby give greater stability to the vessel. 2. What would it cost to build a steam yacht 12 feet keel? Will a cylinder 2x3 inches drive the boat at a fair speed? A. Do not know the cost. The 2x3 inch cylinder will run the 12 foot boat at a fair speed. 3. Do you illustrate all the new war ships launched? A. We have illustrated many of the new war ships of the United States Navy.

(4518) L. L. H. says: We have a 1½ inch pipe laid from our factory to a river, which is 47 rods away and is about 26 feet lower than the factory. The pipe enters a bank as it nears the factory and runs into a large well 12 feet below the surface of the ground. The well is 26 feet deep and the pipe turns from where it enters the well and goes to the bottom, then turns up again in a U form to a height of 6 feet. Here we have a Vanduzen steam jet pump which drew the water from the river for about three or four months after it was first laid, but since then has given us considerable trouble. I would like to know if you think a piston pump would