

## ENGINEERING INVENTIONS.

A car coupling has been patented by Mr. John G. Ogden, of No. 46 Jackson Street, Chicago, Ill. The invention relates to means for automatically coupling and uncoupling railway cars without going between them, and to this end covers novel details of construction and arrangement of parts.

A car truck has been patented by Mr. Charles E. Candee, of New York city. The principal feature of the invention lies in the equalizing bars, which are fitted to swing so as to allow lateral motion of the truck frame independently of the wheels and axles, together with boxes of novel construction, and holders for the supporting springs, by which the springs are held upright in any position of the truck.

A car coupling has been patented by Mr. Frank D. Root, of Cortland, Ill. A drawhead is held in hangers, and has at its rear end a neck passed through the rear hanger, a large nut being screwed on the end of the neck; a spring is held in the transverse cavity in the free end of the drawhead, the spring acting on a tongue on the inner end of a coupling hook, pivoted in the outer end of the drawhead, the coupling hook being connected by a chain with a plate having a quadrant edge, and the plate secured on the lower end of a vertical shaft on the platform.

## AGRICULTURAL INVENTIONS.

A side hill sulky plow has been patented by Mr. Addison D. Sewell, of Colton, Washington Ter. It is made with two plows rigidly connected in reversed positions, and pivoted to a plow beam having a locking mechanism, there being a spiral spring on the beam, and a foot lever connected with the beam and the locking sleeve, whereby the plows will be locked automatically and can be readily released, with other novel features.

## MISCELLANEOUS INVENTIONS.

A machine for threading screws, bolts, and nuts, has been patented by Mr. Edmond P. Bavielle, of Brussels, Belgium. It is for threading screws in general, and especially screw bolts, and has for its object to impart to the manufacture greater rapidity, considerable economy, and greater accuracy. The universal adjustable cutting tool consists of a mere piece of flat steel bar, in one side of which are triangular or rectangular grooves, that may be cut on a planing machine, according to the thread to be made, this cutting tool allowing the pitch of the screw being varied at will; by means of its peculiar adjustment in the screw stock, this tool also cuts the thread on the cylindrical surface of the rod or stem without compressing the latter or squeezing it between the tools, the tool cutting as well at the heel as at the top of the thread. With the machine as preferably constructed, with four die stocks and four taps, it is said that eight to nine thousand bolts can be made in a day of ten hours.

A neck yoke clamp has been patented by Mr. Elihu Wolf, of North Vernon, Ind. This invention covers a novel construction and arrangement of parts constituting a clamp for holding a neck yoke on the end of a pole in such a manner that it can easily swing vertically and laterally on the end of the pole.

A fence wire strainer has been patented by Mr. Sydney W. Fulton, of West Taieri, near Dunedin, New Zealand. The invention consists of a ring or frame carrying two pairs of clamping jaws, and a wire straining shaft or roll disposed on side of the line of the jaws, with certain novel details of construction.

A tricycle has been patented by Mr. Carl G. E. Hennig, of Paterson, N. J. Combined with four pairs of treadles are two rocking arms, connected to the cranks of the axle by rods, two pairs of said treadles being connected to the axle, and the two other pairs of said treadles being connected to a tube arranged upon the axle, with other novel features.

An improvement in the construction of buildings has been patented by Mr. Richard S. Pearsall, of Sea Cliff, N. Y. This invention covers a special manner of construction, especially in the joining and mortising of the stuff, whereby a house may be made very strong and tight, and so that it can be easily, quickly, and cheaply built.

An automatic weighing scale has been patented by Mr. Henry C. Keeler, of Ogden, Utah Ter. This invention relates to scales having a revolving dial and a stationary pointer, so the record of the weight may always be seen at one place through a small glazed opening, instead of having to follow the pointer around its range, and covers several novel features of construction and arrangement.

A lifting device has been patented by Mr. Eugene Paul, of Norwich, N. Y. It may be made of wood or metal, and is for lifting heavy articles, such as logs, for sawing or loading, and combines, with legs and a center piece, a lifting lever held by links on the center piece and carrying a shackle, through which a toothed lifting bar passes, which latter also passes through a shackle on the top of the center piece.

A combined desk pad, portfolio, and calendar has been patented by Mr. William R. Cole, of Pottsville, Pa. The calendar is fixed to the head or top of the pad, and has a roller indicating the months and days of the month, and another indicating the days of the week, the days showing through slots in the calendar case, and the portfolio being fixed to the back of the pad.

Improved suspenders form the subject of a patent issued to Mr. Frank E. Flagg, of New York city. The end of the shoulder strap has a cap with a tubular socket to receive a rubber rod, upon which is a regulator to which the suspender ends are attached, and which is made with a tubular aperture smaller than the rod, whereby the rod is securely connected with the shoulder strap, and the regulator can be readily adjusted and held in place.

A measuring, sacking, and registering attachment for grain separators has been patented by Mr. James Forrest, of Grand Forks, Dakota Ter. This invention consists in a peculiar construction and combination of parts to facilitate the work for which it is designed, and so the grain will all the time be covered during its passage from the discharge spout of the separator to the sacks, and thus kept clean from chaff, dust, straw, etc.

A shirt and necktie fastener has been patented by Mr. Sigmund Fechtmeier, of New York city. By this improved device the shirt, scarf, or necktie, and fastener, are all combined and connected to make of the whole one article, dispensing with studs or buttons for closing the shirt in front, and the device at the same time serving to form an ornamental clasp for the ends of the tie or scarf at the neck, or other points down the bosom of the shirt.

A handle for pot and other covers has been patented by Mr. George E. Palmer, of Horseheads, N. Y. This invention relates to ring or loop-shaped handles, and covers a novel construction and means of attaching it to the cover; it may be held in its place without solder, and when attached and in use will always occupy an upright position, thereby keeping comparatively cool when applied as a handle to a stove or other pot cover.

A street lamp has been patented by Mr. George Schuette, of Manitowoc, Wis. The invention covers an elevator contrivance within a hollow lamp post for suspending an oil lamp, and arrangement for lowering the lamp to an opening in the side of the post for filling and trimming the lamp without climbing, all contrived for great convenience in the care taking, for protection from snow and ice, and from wanton abuse.

A two wheeled vehicle has been patented by Messrs. Ruben F. Taliaferro and Edward P. Mitchell, of Hueneme, Cal. Spring holders, clipped or otherwise, are secured upon the axle, and to these holders, at their rear ends, are pivoted the inner ends of bars secured to the under side of the shafts and extending backward beneath the axle, with other novel features, for so attaching the shafts that they can be raised or lowered, and the axle with the springs kept plumb.

A fire escape has been patented by Mr. Lewis B. McDonald, of Little Rock, Ark. This invention combines, with a bifurcated L-shaped rod pivoted to the floor and window sill, a rope pulley or drum pivoted between and in the prongs of the rod, with other special features, to enable the safe descent of a person escaping from a burning building, and to cause the automatic recoiling of the rope to permit the descent of another person.

A damper has been patented by Messrs. David Manuel, of Hyde Park, and George H. Burrows, of Boston, Mass. This invention covers two disks, flat at their central portion and concavo-convex at their outer portions, with openings through the outer portions, so an annular chamber can be formed between them, and the openings will alternate with each other, so that the ascending air and products of combustion may be sufficiently retarded to insure perfect combustion.

A water closet valve has been patented by Mr. Hermann C. Apel, of Milwaukee, Wis. Combined with a piston working in a cylinder and forming a valve is a lever for pressing down the piston, and an inlet for admitting water into the bottom of the cylinder to raise the piston valve, which is fitted in an inner cylinder with its seat depending in an outer cylinder, the seat being slightly elevated above the upper end of the inner cylinder, with other novel features.

An axle box and skein has been patented by Messrs. Lawrence Bimel and William Bimel, of St. Mary's, O. This invention relates to thimble skeins employed in connection with wooden axles of wagons and other vehicles, insuring the continuous oiling of the axle for a long time, and permitting of the ready application of a fresh supply of oil without removing the wheel from the axle, the bearing of the axle being protected at both ends from sand and mud, so that it will run with the minimum of wear.

A boot or shoe ventilator has been patented by Mr. Adoniram J. Trask, of Nobleborough, Me. A flexible bulb in a cavity at the heel is combined with an insole which has an aperture above and in line with the bulb, whereby the latter communicates by a tube with the inside of the boot or shoe, and by a second tube with the external air, the tubes having valves, so the bulb is alternately compressed and expanded, and air is forced into the shoe by the action of walking.

A steam radiator forms the subject of two patents issued to Messrs. Juan B. Arci and John Chapman, of Brooklyn, N. Y. These inventions relate to radiators where circulating pipes are used, communicating at their ends with upper and lower chambers, and embrace such construction of the chambers and tubes that the latter are adapted to reach through the chambers, to receive nuts or caps at their outer ends, and so the tubes and chambers may be joined together, forming the radiator complete without any extra fitting of the parts.

## NEW BOOKS AND PUBLICATIONS.

PICTURESQUE CALIFORNIA HOMES. S. & J. O. Hewson, architects, San Francisco, Cal.

This is a series of some forty folio plates representing both the elevation and plans of dwelling houses erected on the Pacific coast, costing from \$700 to \$15,000. Not only the dimensions of the different houses are given, but the size of each room, hall, and closet, and also detail drawings of the ornamental woodwork specified in the agreement. Forms of builder's contract, with full specifications, covering all work from the foundation walls to the speaking tubes, electric bells, and gas fittings, accompany the plates. To persons about to build in the country, this series of plates will be found useful.

## 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 next issue.

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Stephens' Pat. Bench Vises and Planer Chucks. See adv., p. 76.

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## Notes &amp; 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.

Special Information requests on matters of personal rather than general interest, and requests for Prompt Answers by Letter, should be accompanied with remittance of \$1 to \$5, according to the subject, as we cannot be expected to perform such service without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Minerals sent for examination should be distinctly marked or labeled.

(1) L. C. L.—Turtles are shipped from Cuba and Florida to New York by steamers. Will stand a voyage of a week or ten days. Require no attendance. Tie the flippers together, and lay on their backs. They are sent by rail in the same manner. Oysters are shipped from New York to Europe, and to all the neighboring States, by rail and boat. If for a short trip, say of less than two days, can be shoveled into perforated barrels and closed with bagging or in boxes with bagging for cover. If for distant places, pack them belly down and cover as above, which insures proper handling.

(2) R. K. T. writes: I would like to put reading matter on one side of a knife blade so it will not rub off. Could it be done with a rubber stamp, using an acid for ink? I am now making the blades of hot rolled steel, but would use cold rolled with a bright finish if the letters could be put on that finish to stay. A. Mark the blade with a rubber stamp and ink made by rubbing into a paste with a muller and stone, flower sulphur with linseed oil and a little vermilion for color. Make it as thick as printer's ink. Stamp the blades, and lay aside to dry. When the stamp wears off, the blade will be found marked by the sulphur.

(3) S. B. G.—Small toy balloons for use without gas are usually made of tissue paper with paste. The cutting of the shapes is an easy matter, which you should be able to study out yourself. Fire is the usual means for inflating with hot air. A hoop of fine wire at the mouth of the balloon to keep it from collapsing, with a small piece of sponge tied within the hoop with fine wire, is all that is required until ready for use; then saturate the sponge with a little alcohol or a mixture of alcohol and resin, and set it on fire; at the same time the balloon must be held up and spread out, so as not to take fire. A little practice will enable you to accomplish this.

(4) P. J. C. writes: A floor for a skating rink was deadened by a mixture of lime, earth, and saw dust, in the proportion of 1, 1, and 6, respectively. About one-sixth of it was covered by the first layer of the floor, and the mixture under this had lain over night before being put in place. The remainder was put in as fast as it was mixed. The night after it was put in, the building burned down. Granting that one-quarter of the lime was not slaked, could it have set fire to the building? A. You fail to tell us whether the lime, earth, and saw dust was mixed with water. If the lime was slaked by wetting with water, and then mixed with the other materials, there is no reason to believe that the fire was caused by the slaking of the lime. If, on the contrary, the lime was mixed with the other materials dry, and any of the mass left in a heap or even spread between flooring, spontaneous combustion might result from the air-slaking of the lime in contact with saw dust. Damp saw dust alone in a mass of no more than a cubic foot is liable to spontaneous combustion. We have experienced this phenomenon in a drawer of saw dust used for drying jewelry after washing.