RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING. — Henry W. Hoss, Gamma, Mo. This device is automatic in coupling, and does not require the brakeman to step between the cars in coupling or uncoupling, while it is designed to be very simple and durable in construction. Spring-pressed plates are mounted to slide opposite each other in the drawhead, and a coupling link having an arrow-shaped head on each end is adapted to pass between the plates to press them apart and finally engage with the back of the head the inner ends of the plates, which are pressed toward each other by the springs.

CAR COUPLING. — Patrick Lee, Boise City, Idaho. This device is adapted for use with cars of the same or different heights, and is arranged for coupling from either side or the top of the cars, without the need of the trainmen going between the cars. The invention consists of a link pivoted at one end in the drawhead and a pin fitted to slide in the drawhead and adapted to be pressed on by the opposite drawhead of the car to be coupled, the pin being adapted to engage the link to swing it into position to couple the other drawhead. The construction is simple and durable, and a car provided with the improvement may be readily coupled with one having the ordinary link and pin coupling.

Engineering.

LINK MOTION. — John Lunz, Claflin, Kansas. This invention relates to valve gear mechanism for engines, providing a valve motion designed to relieve the reverse rod from all strain while the engine is at work, and throw the entire motion direct on the valve pin. The outer ends of the eccentric rods have hooked members, which are pivotally joined to the upper and lower end of a slotted reversing frame, the slots being of greater width at their ends but contracted at the middle to a width just enough to accommodate the valve pin. The motion is direct through the respective rods on the valve pin, and the plates of the reversing frame have a free movement without frictional contact with the valve pin.

Mechanical Appliances.

AXLE ROLLING MACHINE.—James S. Patten, Baltimore, Md. This invention provides a machine of simple construction designed to roll both the spindle or arm and the body portion of the axle section. Within a suitable framing is a pair of main rolls having around their circumference grooves or cavities adapted to form the body of the axle, while end rolls with grooves or cavities are adapted to form the axle spindle, the grooves being formed to open out at the end of the end rolls. The number of rolls may be increased at will and the form of the cavities varied to roll any desired form of spindle or axle body, while a simple, easily operated and effective feed for the axles is provided.

YARN NIPPERS. — Louis Wimmer, Elizabethport, N. J. This invention relates to the nippers or nipper heads of yarn or twine spinning machines, and consists in a nipper die provided with a movable wear block having several wear faces that may be successively brought into the path of the sliver to receive wear as the preceding one becomes worn. With this construction, when one surface will no longer exert the proper tension on the sliver, the wear block is merely given a slight turn to bring the next succeeding wear surface in line with the passage through the head.

SPINNING MACHINE YARN NIPPER.—This is another invention of the same inventor for a device from which knots or obstructions of the fiber may be easily removed without dismembering the parts, and which will produce tightly twisted, smoothly finished yarns or twines, of any desired size or gauge, with economy of time and labor. The bed die of the nipper has a groove or channel receiving the yarn and provided with a medial cavity and a transverse opening, while a yielding die has a convexed face, between which and the concavity of the bed die the sliver passes at the transverse opening while being twisted.

MILLSTONE DRESSING MACHINE. — George A. Smith, Cohoke, Va. This machine is designed to quickly cut furrows and facing on stones, and consists in a main frame carrying a socket secured to the drive spindle to turn a stem or spindle carrying a drive gear, while a circumferentially and radially movable cutter frame is arranged to carry a vertically reciprocating cutter or chisel, there being a jointed connection between the cutter frame and the main frame, and belt and gear connections between the cutter-operating devices and the gear on the socket spindle. The cutter-carrying frame is automatically fed radially toward the eye of the stone when the machine is used for cutting furrows.

Mining, Etc.

ORE CONCENTRATOR. — Edward W. Clark, Butte City, Montana. In a suitable framework a central vertical drive shaft carries two circular tables, one above the other, the tables having concentric steps thereon, while a series of water pipes is arranged to deliver upon them. The ground ore or pulp is delivered centrally on the upper table, and as it is washed the heavier portion is left on each step. As the table revolves, the concentrates are rewashed, until removed by outward pointing jets and a scraper, the tailings being washed on the lower tabie.

ORE SAMPLING DEVICE. — Robert C. Hawley, Pueblo, Col. This invention consists of a hopper, and dividing wings arranged under it to divide the ore passing down into halves. The hoppers also may be arranged one above the other, and dividing oscillating wings arranged alternately with the hoppers, so that the wing below a certain hopper divides the ore from that hopper into halves, of which one-half is guided by the wing into the hopper next below. The construction is simple and durable, and the device is designed to give an accurate sample of any quantity of ore passed through it, whether fine or coarse, the sample being cut down to the size desired.

Agricultural.

HAY RAKE.—John H. Soehren, Everly, Iowa. This is a simple and effective implement whereby the hay may be placed in a windrow at the right or left of the implement, or may be carried straight ahead. When it is desired to dump the hay, or free the rake head from engagement with it, this is accomplished by means of a lever within easy reach of the driver, whereby the teeth may be elevated from the ground, the hay being left in such position as greatly to facilitate the work of the loader following the rake.

Miscellaneous.

REFRIGERATOR AND GAS GENERATOR.—Harry B. Cornish, Hampton, Iowa. This is a combination apparatus for the cooling of refrigerators, cars, and cold storage compartments, and which may also be employed to furnish gas to a burner or gasometer for lighting purposes. The refrigeration is effected by the use of gasoline or other volatile fluid, in conjunction with compressed air and an atomizer, the gas generated by the air and fluid forced through the atomizer being sprayed into coils of pipe in the compartment to be cooled, and all the fluid not generated into gas finding its way back to the fluid receptacle.

DIVING SUIT. — Joseph L. Boucher, Emery H. Brault, and Romuald Filteau, West Superior, Wis. This invention provides an armor to be worn under a rubber suit, to give greater air space and prevent the pressure of the water from interfering with the comfort and use of the limbs and body, thus enabling the diver to work at a greatly increased depth. The armor has its body portion made in two hinged halves working about a vertical axis, and has longitudinal articulated limb braces to which are attached circular rings or ribs, the body section having an adjustable slide for increasing or diminishing the size of the arm holes, while the crotch and the body section have an articulated connection with a vertical adjustment.

BOTTLE WASHING MACHINE. — Otto Eick, Philadelphia, Pa. This is a simple and durable machine adapted to simultaneously wash a large number of bottles, which are not handled by the operator. Connected with the water supply are revoluble pipes, each having a cleaning device at its discharge end, the nozzles passing through a sliding frame on top of which is held a crate supporting the bottles so that the nozzles pass into them. Each set of bottles may be subjected to one or several scrapings by the movement of the frame.

CIGAR BUNCHING MACHINE.—Thomas and Lee B. Hancock, Richmond, Va. This machine is designed to quickly and evenly wrap the binder around the tobacco fillings, the binder being wrapped as smoothly at the point as at the butt end of the bunch. The rolling apron is constructed, in connection with traveler slides, to act as formers, so that after the binder has been placed upon the fillings the cigar body will have its proper shape ready for the outside wrapper. The machine is designed to be made at a small cost and easily operated.

CHECK BOOK.—George L. Winn, Jersey City, N. J. In this book the checks are printed consecutively on the same side of a single sheet, which is so folded that only a portion of the checks or the entire number may be rendered quickly visible, the checks being removed singly or connected in sheet form. The stubs are also contiuously connected, and having a continuous column for records, thus dispensing with the carrying over of balances from page to page, and enabling one to readily detect and rectify mistakes.

MAIL WAGON.—Robert R. Richardson, Portland, Oregon. The body of this wagon has a fixed vertical flange extending around its sides and front, and a revoluble turret is mounted on the body within the flange and provided with a series of compartments. The turret is held in fixed position by a ratchet mechanism, and may be revolved by means of a lever. It has compartments having openings through the outer walls, and other compartments with pigeon holes and swinging doors, adapted respectively for newspapers and letters, the wagon being designed for carrying assorted mail or distributing light articles, and so constructed that the various compartments may readily be brought within easy reach.

SASH FASTENER. — Joseph De Mars, Albuquerque, New Mexico. This is a device for locking both the upper and lower sashes, and consists of a casing supporting two bolts arranged at right angles to each other, there being independent springs for operating the bolts in one direction, one of the bolts being movable longitudinally, and the other longitudinally and rotarily, while it has a crank-like arm to engage the bearing of the first bolt. The construction is such that the lower sash may be locked closed or at any desired height, and the lower sash may be locked to the upper sash, so that the two sashes may be held in any suitable position or entirely closed.

COOKING APPARATUS. — Paul L. Dermigny, New York City. This is a foldable apparatus designed for tourists, etc., and forming also a convenient storage receptacle for articles previous to cooking. It has a base forming a fuel receptacle, and to which is hinged legs supporting two concave dishes held together at their edges and forming a shallow air tight vessel, the upper dish being adapted for use as a plate or saucer. Suitable keepers are provided for retaining a knife and fork, and a separate dish is provided for alcohol to be used in cooking if desired.

SCISSORS.—William H. Sample, Albany, N. Y. In these scissors a swinging latch is pivoted to one blade and provided with a notch in one side edge to receive a portion of the pivot, which is reduced adjacent to its head. The latch forms a permanent attachment of the scissors, and the invention is an improvement on that class of scissors in which the pivot has a notch engaged by a latch to hold the two blades together.

BUCKLE FASTENER. — Frederick A. Blackburn, Bisbee, Arizona Ter. This fastener is composed of two independent metal parts or slides, one part having a flat, band-like loop, with a projecting flat tongue having a pin on its face, while the other part has an upper or outer flat base piece forming an intermediate band-like loop provided with a pin beneath, small holes being punched in the strap for the pins. By this means the buckle may be fastened to a strap without sewing or riveting, the fastening being very durable.

GATE WORKER.—Silas Portis, Monrovia, Ind. This invention provides an apparatus for opening and closing a gate in a carriage way, as the wagon approaches and leaves the gateway, doing away with the necessity of a gate tender. The gate is connected by rods and chains with a lever pivoted on a post at the side of the roadway, a few yards distant, and this lever is connected with a crank in the path of the vehicle wheel, by means of which, as a vehicle approaches, the lever is operated to swing the gate open, a similar crank and lever connection operating to close the gate when the vehicle passes beyond it.

WIND TOY.—Johann R. Zuberbuhler, Greenville, S. C. This device contemplates the mounting of sail boats or similar bodies on arms pivoted at a common center, there being also retarders upon the arms. The whole forms a toy to be carried in the hand to afford amusement to children, or to be arranged for support as an ornament in a garden or lawn, where it may be employed to keep birds away from small fruit and seed beds, etc.

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Notes & Queries

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References to former articles or answers should give date of paper and page or number of question.
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(3682) C. P. M. writes: 1. In query (3494) page 251, you say that if a rifle ball be fired perpendicularly into the air, it will have a greatly lessened penetration on its return, while philosophies say the velocity is the same both ways. Then why would it not have the same penetration downward? A. We think what the "philosophies" say must be modified by the further statement that, to secure such results, the ball must be fired in a perfect vacuum. The air resistance certainly diminishes the height to which the ball rises, and retards its descent, so that its penetration must necessarily be greatly diminished by its excursion in the air. 2. Could the motor described in SUPPLEMENT, No. 641, be run with gravity batteries such as are used in depots? A. Gravity batteries are not adapted for running motors of the size given.

(3683) A. S. Q. says: Suppose a man to fall overboard from a vessel in midocean, water very deep; will he go to the bottom, or after having reached a certain depth, will the water be too dense to allow of his sinking further? A. There is every reason to believe that any body that will sink at all will sink to the bottom. The known fact that fishes live at the bottom of the deep seas, that water is but very slightly compressible, and that organic bodies are also equally or more compressible than water, sustains this view.