RECENTLY PATENTED INVENTIONS.

Engineering.

LOCOMOTIVE DRIVING GEAR.—David S. Patterson, North Platte, Neb. This invention provides for a front and a rear cylinder ar anged on opposite sides of the driving wheel and connected by their pitmen with crank pins on opposite sides of the center of the driving wheel, the improvement forming a driving gear of simple and durable construction, designed to prevent horizontal straining of the axle journals and pounding of the wheels on the rails, whether caused by the centrifugal force of a single main connecting rod, a single parallel rod, or a single crank pin, or by the angular thrust of the main connecting rod.

ENGINE GREASE ARRESTER. — Jeremiah F. Traver, Newburg, N. Y. The oil, grease, and other impurities with which the steam becomes charged in passing through the engine to the condenser are effectively separated from the water of condensation, according to this improvement, in a novel form of filter box, the water of condensation being returned to the boiler comparatively pure. A pipe valve is adapted to be seated on the outlet pipe of the filter box, the valve being actuated by a float and extending from its seat to a point above the highest level of the water in the filter box, whereby only the lower, pure strata of water can be drawn off by the pump, the impurities being held for removal when a sufficient quantity has accumulated.

Railway Appliances.

CAR COUPLING.—Joseph Zehneck, Magdeburg, Germany. This is a device especially adapted to the form of car coupling employed on the German state railways. Combined in the coupling is a drawhead having a hooked outer end, a rock shaft on which is a yoke pivotally connected with a link, with means for throwing the shaft, while a frame pivoted to rock vertically has an operating lever, the frame ca ying arms diverging from each other and extending across the hooked end of the drawbead.

CAR COUPLING.—Lemuel S. Manning, Alessandro, Cal. In this device a cylindrical drawhead is employed, spring cushioned against percussion and draught strain, conically recessed at its front and provided with a pivoted latch block adapted to interlock with an elongated slotted link. The coupling link has a conical recess at its front end, the link body having nearly parallel side walls, with top and bottom walls tapered toward each end from the center of length, and similarly slotted near each end to receive the tongue of a latch block in the conically recessed drawhead. The device is adapted to couple automatically with another coupling of its class, and uncoupling may be readily effected from either side of the car.

METALLIC TIE.—Charles Worden, Rye, N. Y. The body of this tie is formed of a central arch and upwardly projecting side flanges, its shape being designed to insure great strength and at the same time permit of using comparatively thin sheet metal. Blocks resting upon the arch engage the flanges to prevent them from spreading, the blocks serving as supports upon which the rails rest. At or near the middle of the arch is a longitudinal opening through which packing mate ial may be introduced to insure the stability of the tie on the track.

IMPROVED TRACK. — John Murnane, Coopersville, N. Y. To securely hold the rails so they cannot spread and prevent accidents from broken rails is the object of this invention. The rails are each provided with a casing made in two sections, formed in such a manner that each covers one half of the base of the rail, the web, and the under side of the base of the rail. The sections are held in place by bolts passing through at the web, where the sections are united together and secured to the rail. The rail so protected can be spiked to the ordinary wooden tie, but a sectional tie of special form and having curved flanges engaging the casing sections is preferably employed.

Electrical.

TIME SIGNAL. — Gerhard W. Van Vianen, Cologne, Germany. This invention relates to electric alarms for dwelling places, hotels, etc., permitting visitors, guests and others to set the alarms for any time in their own rooms, so that the occupants of rooms will not be dependent on the punctuality of servants or others. The apparatus is set in motion by a clock provided with specially constructed contact mechanism, there being placed in each room a plug contact apparatus provided with a bell which serves as an alarm, conducting wires connecting the clock with the different alarms.

WIRE COUPLING.—John Bodine, Pittsfield, Ill. To couple the ends of electric wires, or mend broken wires, so that the circuit will be as good as it was before the break, is provided for by this invention by means of a longitudinally bored coupling body, with two pivoted clamping dogs pivoted between their ends to the body and projecting at their inner ends into the bore, a spring-pressed plate bearing on the inner ends of both dogs. The ends of the wires are thus firmly bound in place in such way that the g ip of the coupling is increased by increased tension on the wires.

TOWER WAGON. — Joseph S. Hill, Lafayette, Ind. This is a wagon to facilitate stringing trolley wires for electric railways and for putting up electric lines generally. It has an extensible tower and is provided with an insulating platform for supporting the wagon, there being also a reel for holding the line wire, sheaves for guiding it, and a brake controlling the reel, whereby any desired amount of tension may be given to the wire.

Mining.

MINER'S SAFETY LAMP. — Heinrich Hubner, Hermsdorf, Germany. This is a lamp in which the ignition of the wick is effected by the explosion of a percussion cap or the like, the invention also providing other novel features designed to insure safety, the construction being such that the chimney and the gauze cylinder may be readily connected and disconnected from the reservoir, while the accidental disconnection of the parts is guarded against.

COAL WEIGHING BASKET. — Simon Jones and Samuel B. Bishop, Hamilton, Ohio, and Thomas C. Dupont, Central City, Ky. This is a device for weighing coal in transit from the inclined screens or chutes to the railway car, the basket being of such construction as to permit the miner's quota of coal to be weighed at one operation, and yet separate this quantity while in the basket into different grades to be separately discharged into different cars or be loaded with the other coal which goes through the screen for which the miner is not paid.

Agricultural.

CULTIVATOR.—Joseph R. Finney, Randolph, Wis. The cultivation of corn and similar plants is especially the design of this machine, in which, when two rows of teeth are employed, either of the rows may be raised or lowered independently, or both elevated or depressed simultaneously, while the beams carrying the rows of teeth are so swiveled to the frame of the machine that when the latter is turned at the end of a row the cultivator does not injure the plants. The cultivator teeth are also of peculiar formation, and in their rear are located the teeth of hill coverers not adapted to enter the ground, but to travel quite close to it.

SEED POTATO CUTTER. — Isaac Dunn and William R. Dunn, Jr., New Brunswick, N. J. This is a device to facilitate the cutting of potatoes for seeding purposes without danger of bruising or injuring the eyes or skin of the potato. The box containing the potatoes has an opening to form a rest for the operator's arm, and a knife of special shape is secured to the end of a swingmg arm, the latter being connected by a link with a treadle. The arrangement is such that a shearing cut is given to the potato, which may be very conveniently handled by the operator.

Miscellaneous.

ORGAN.—Jerzy Polukanis, Bloomfield, N. J. A rapid sounding of the organ pipes is designed to be obtained by the improvement made by this inventor, the performer being also enabled to easily manipulate the keys. A self-acting pneumatic valve is adapted to be actuated by the wind from the wind box, on releasing air from the valve by means of the keys or pedals, the valve being controlled by a preponderance of pressure from the wind box at the time the keys or pedals are actuated.

INKSTAND.—Phineas B. Myers, Brooklyn, N. Y. This is an inkstand provided with one or more racks so arranged that when a particular rack is pressed down, the cover of a corresponding ink well will be automatically opened, the covers of other ink reservoirs remaining closed, enabling a bookkeeper to keep a red ink pen upon a rack operating the lid of the red ink well, the black ink pen being placed on a similar rack for the black ink well, etc., thus preventing the frequently recurring mistake of dipping a pen mto the wrong ink reservoir, and enabling the penman to work with perfect safety and dispatch.

GLOVE. — George M. Cluze, Paris, France. This is a new article of manufacture, consisting of a glove almost identical in appearance with the usual style, but having the thumb sewed to it in a particular manner, whereby the seam around the thumb is avoided, and the thumb is rendered yielding in its length, affording greater freedom for the movement of the hand. The seam by which the thumb is secured does not extend to the wristband, nor is it continued to the palm, so that the latter is left perfectly smooth, as in ordinary gloves.

ROLLER SKATE.—Carl Storla, Belford, South Dakota. This skate has a box-like frame containing compartments for holding steering mechanism, wrenches, and other articles, and means are provided for tying the skates together to form a vehicle for carrying the rider. The skates likewise have movable spring-pressed platforms held to move vertically within the box-like body, in connection with a ratchet mechanism for turning the wheels by the downward movement of the platforms, a tripping device automatically releasing the ratchet during the upward movement of the platforms, and the skates being operated by simply shifting the weight of the body from one skate to the other, whereby the skates may be made to run very rapidly.

WASHING MACHINE.—James H. Jones, Floyd, Texas. This device comprises a revoluble cylinder mounted in a casing, there being on the interior of the cylinder slats corresponding to the ribs of the washboard, while in connection therewith is arranged a series of buckets, so shaped as not to present sharp edges likely to injure the clothes, the buckets serving to carry up water and empty it upon the clothes as the cylinder is revolved by means of a crank. The clothes are thus tumbled about as the water is kept in a state of agitation, and the clothes are conveniently washed without a possibility of their being injured.

CONVERTIBLE STOOL.—Frank Graham and Irvine E. Curtis, Easton, Washington. This is a sectional stool which may be folded to incase an umbrella, the whole device being then adapted for use as a walking stick. It consists of an upper and lower series of braces hinged at their adjacent ends to swing outwardly, each brace having an outer hinged section to swing inwardly into a horizontal position, while an annular ring or cap connects the adjacent inner ends of each series of hinged sections. When the stool is folded an open-ended tube is formed to removably inclose an umbrella.

EGG HOLDER.—Abraham A. Anderson, New York City. Two patents have been granted this inventor for a device comprising a frame containing an egg cup or socket, a top ring fitting the upper end of the egg, and a horizontally swinging knife with a circular egg-receiving aperture, and a swinging cover plate also having an egg-receiving aperture, whereby an egg may be securely held and one end cut by the knife, which does not then interfere with the removal of the contents of the shell. The egg may be further cooked if desired, the egg and the holder being together placed in the water. The holder also affords facility for introducing condiments and stirring them within the egg shell. With the holder likewise an egg may be conveniently cooked at the table with an alcohol or other lamp.

POT OR KETTLE SCRAPER.—Peter Unsinger, Fremont, Ohio. This is a flexible scraper to facilitate removing grease and dirt from the sides, bottoms, and corners of pots, kettles, metallic sinks, etc. It consists of a thin steel blade with a handle formed in two parts, each part pivotally connected at its forward end to the blade, and the parts pivotally connected with each other at their rear ends. The scraper readily conforms to the outer surfaces of the pot or kettle, and may be readily introduced into the sharp corners to clean them.

COOKING STOVE.—Albert Loewenthal, Berlin, Germany. This is a portable or pocket stove, comprising a casing formed of two sections fitting one upon the other, each section being provided with a bowl-shaped cavity, the cavity of one section being adapted to receive spirits or alcohol when placed under the other section. The device is specially designed to serve the convenience of travelers, as it can be readily carried and easily set up for use in preparing, cooking, and warming coffee, cocoa, eggs, soup, etc.

BURNER FOR GAS STOVES.—Anton Weiskittel, Baltimore, Md. An annular cup or receiver has an open central air space, and its edges have outwardly flaring beveled surfaces forming a concave seat, in which rests by gravity an annular top having beveled surfaces and radial grooves, the latter serving to conduct off any liquid that may be spilled, and prevent its passing into the cup or receiving chamber of the burner. All separate fastening devices are dispensed with, and access may be readily had to every part for cleaning.

PUMP. — John W. Gregory, Garden City, Kansas. This pump has a displacing cylinder so constructed and arranged that the cylinder may be made of equal weight to the liquid which it displaces, thus reducing the power required to operate it, the relative weight and buoyancy of the displacing cylinder being conveniently adapted or adjusted to different depths of wells or heights to which the water is to be raised.

DESIGN FOR A FLAG.—John Terhune, Hackensack, N. J. This flag has on one side the insignia of Ferdinand and Isabella, and on the other representations of Columbus and his caravels, with characters simulating a page of his log book. The flag is swallow tail in shape, the Maltese cross of the insignia on one side being of comparatively large size.

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Notes & Queries

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(5146) F. I. A. asks: 1. Would the microphone described in "Experimental Science" work well as a telephonic transmitter? A. Yes. 2. If so, would it make it better to substitute a diaphragm of tintype in the place of the wooden one? A. Yes; the diaphragm being not more than 2¼ or 2½ inches in diameter. 3. Which of the two motors described in SUPPLEMENT 641 and 759 respectively would give the most satisfaction? A. Probably the motor described in SUPPLEMENT 759 would prove satisfactory.

(5147) F. M. M. writes: In our gas field we have rock pressure of gas 135 lb. Our line pressure is about 125 lb. The question in dispute is this: We have a four inch pipe running from part of our field, say three miles, into the six inch pipe. Parties here claim by placing another three inch pipe alongside the four inch, we would gain pressure by it on the six inch line. We have now, understand, twenty-two miles of six, inch and three miles of four inch. I claim the pressure would be the same, that is, it would equalize on the six, and pressure be the same; but by placing a pump on said line to force from the end of six inch line to city would be far better, and use suction on the four inch line. A. The difference in pressure between the four inch pipe and the six inch pipe is no doubt due to friction. Any additional supply that you can make to the six inch pipe by an additional pipe will increase the flow and tend to equalize the pressure or raise the pressure in the six inch main. A pump will also overcome the difficulty, bnt in general, is expensive for gas transmission.

(5148) N. R. F. asks: 1. Why is it that the wheel of a radiometer always rotates with the white faces in advance when exposed to the sun? A. All radiometers do not turn the same way. At a certain degree of exhaustion the black surface moves toward the source of heat, while at a further degree of exhaustion the white surface moves toward the source of heat. The cause of rotation is supposed to be the difference in the degree of absorption and radiation of heat by surfaces of different colors. The dark surface being hottest repels the molecules of gas. If the gas is sufficiently rarefied the reaction due to such separation turns the vane. If the